



Annual Report & Accounts

2018/19

NDA

Annual Report and Accounts 2018/19

Report presented to Parliament pursuant to Section 14 (6) of the Energy Act 2004 and Accounts presented to Parliament pursuant to Section 26 (10) of the Energy Act 2004.

Report laid before the Scottish Parliament pursuant to Section 14 (8) of the Energy Act 2004 and Accounts laid before the Scottish Parliament pursuant to Section 26 (11) of the Energy Act 2004.

Ordered by the House of Commons to be printed on 4 July 2019

HC 2425

This publication is available at www.gov.uk/official-documents.

Any enquiries regarding this publication should be sent to us at:
Nuclear Decommissioning Authority
Herdus House
Westlakes Science and Technology Park
Moor Row
Cumbria
CA24 3HU

ISBN 978-1-5286-1451-1

CCS0619490712 06/19

Printed on paper containing 75% recycled fibre content minimum

Printed in the UK by the APS Group on behalf of the Controller of Her Majesty’s Stationery Office

Contents

Overview of performance

2018/19 progress

An overview of our business and annual performance

LAST

fuel shear marks the end of THORP reprocessing at Sellafield

GDF community-driven siting process launched

Good clean-up progress delivered within budget set by HMG

Demolition of Sellafield's pile chimney now underway

80%

of all fuel removed from Wylfa

ALMOST HALF

of all fuel elements removed from Dounreay Fast Reactor

1st

Bradwell first UK Magnox site to enter care and maintenance

Successful assembly of the first silo emptying machine at the Magnox Swarf Storage Silos, Sellafield

Chairman's review

Tom Smith

Message from our Chairman

Our teams on the ground bring passion, determination and innovation to the challenges we face.

I look forward with anticipation and confidence as our improvement activities start to make a positive difference across the group.

Our performance

Clean-up of the UK's historical nuclear facilities is an essential task for the country, and we're committed to carrying out our mission safely and responsibly while delivering maximum value for taxpayers.

Safety performance, one of the Board's top priorities, has been satisfactory, but we see opportunity for improvement and more sharing of safety-related experience and methods across our estate.

Our sites made steady progress during 2018/19 in our long-term clean-up mission. Magnox placed its first site into formal care and maintenance, with the approval of the Office for Nuclear Regulation. Sellafield ended fuel reprocessing operations, as planned, at one of its two reprocessing facilities. Our subsidiary Radioactive Waste Management Ltd launched the consultation and dialogue process to identify a volunteer host community for a Geological Disposal Facility.

One NDA

Alongside continued progress in the decommissioning challenge, we have over the last 2 years undertaken a wholesale review of our resources, our capability, our structure, our culture and our relationships with the 17 sites that make up our estate. That work reached a conclusion in the final months of 2018/19. We enter the new financial year as a substantially renewed organisation with a new set of principles that define the way we, and the sites, will work together. Our headline description for this is 'One NDA' and the aim is to create a foundation for collaborative working that will enable us to achieve continuous improvement in everything we do.

We hope these changes, which will take some time to mature and embed themselves, will be a positive and effective response to the extensive public scrutiny that the NDA has rightly been under. I am excited and optimistic about the possibilities that lie ahead for us.

Workforce and stakeholders

As I travel around the country visiting different NDA sites, I'm continually impressed by the commitment of our people. Our teams on the ground bring passion, determination and innovation to the challenges we face.

Our relationships with the surrounding communities are also vitally important. We welcome the engagement we have with site stakeholder groups, politicians and local organisations, who challenge our approach and hold us to account for our decisions. Our constructive dialogues also enable us to allocate our socio-economic investments to projects that help sustain communities affected by our decommissioning activities. We depend on their support both now and in the future.

Board changes

Dr Adrian Simper has stepped down from the NDA Board after more than 4 years. On behalf of the Board, I thank Adrian for his service as a Board member and I'm delighted that he is continuing to support the Board through his vital work as our Group Director of Nuclear Strategy and Technology.

Over the course of 2018/19, we welcomed Lorraine Baldry as Chair of Sellafield Ltd, and Lawrie Haynes as Chair Designate at Magnox Ltd. Both bring many years of experience to their roles.

Thanks

I'd like to pay tribute to everyone involved in our mission, particularly the workforce, our regulators, government sponsors and colleagues and the community stakeholders who live near our sites. They all provide indispensable support and important challenge to us, and I look forward to continuing these partnerships.

Tom Smith
NDA Chairman
18 June 2019

Chief Executive's review

David Peattie

Message from our Chief Executive

Our role in cleaning up the nuclear legacy is of national importance.

A year of change and progress has set a strong platform from which we can build a more cohesive NDA group to drive the delivery of our mission.

We're here to clean up the legacy of the past. Our role is to ensure that this task - of significant national importance - is carried out safely and efficiently, ensuring both people and the environment are safeguarded at all times.

We have again ensured spending remains below the annual limit set by the government and exceeded our revenue targets, generating income of £1.0 billion to supplement the £2.2 billion government allocation.

When I took up my role 2 years ago, I asked for a fundamental re-assessment of how we should move the businesses forward. The changes we have made are the most significant since the NDA was established almost 15 years ago. And while we still await the conclusion of the Magnox Inquiry, I am seeing real momentum among our people to seek out new approaches to deliver our mission in a better way.

During the year, we welcomed the Nuclear Sector Deal, which puts nuclear at the core of the Industrial Strategy. We are working closely with our businesses and supply chain to seek innovation that will reduce the costs of decommissioning.

We have also published our group-wide Equality, Diversity and Inclusion Strategy and are working towards a more diverse and inclusive culture. This includes key focus areas such as workplace behaviours, fairness and meritocracy, mental health and well-being and innovation. Examples of progress include our focus on raising awareness and implementing employee education workshops with regard to bullying and harassment, and training employee volunteers to become mental health champions. I am also pleased to say that, during the past year, all permanent NDA employees signed up to our newly published code of conduct.

Developments in the broader nuclear sector have led to some uncertainty, particularly around plans for new build. Regardless of this, our clean-up work must continue. We're working hard to ensure that we are able to attract young people leaving school, college and university so we have access to the skills and bright young minds we will need to deliver our mission.

Progressing our decommissioning journey
We're approaching a new era at Sellafield, transitioning from operations to environmental restoration, with reprocessing at the Thermal Oxide Reprocessing Plant (THORP) at an end and Magnox reprocessing following in 2020. We're also now routinely removing waste from some of the oldest and most hazardous plants on the Sellafield site.

We've delivered the UK's first commercial nuclear power station – Bradwell – into care and maintenance. And at the retired Wylfa Magnox power station on Anglesey, we have removed 80% of the used fuel with the remainder to be removed this year. This will leave Calder Hall in Cumbria as the final Magnox power station with fuel in its reactors.

Continued progress has been made removing fuel from the Dounreay Fast Reactor, and the Dounreay Materials Test Reactor is ready for demolition after 10 years of preparatory work.

Meanwhile, our transport businesses, International Nuclear Services (INS) and Direct Rail Services (DRS) continue to expand their markets and generate revenue for the UK taxpayer.

Finally, and very importantly this year, we launched the consent-based process to identify a volunteer site for geological disposal of higher-activity nuclear waste, a process which has communities at its heart.

Shared learning
Across the entire NDA group, safety and security remain our enduring priorities. Last year we held our first NDA group-wide safety event which established a common approach to sharing learning and best practice across all our businesses.

I am always inspired by the dedication and passion of our people to make a difference. Their skills are vital to our performance and, along with the expertise of our supply chain, enable us to share our learning internationally. When I visited Japan recently as chair of our jointly owned shipping business, PNTL, I was pleased to note the esteem in which UK capability is held overseas, particularly with respect to the ongoing clean-up of the Fukushima Daiichi nuclear power plant.

Constructive dialogue with a wide range of industries and overseas nuclear organisations was a positive feature of our successful supply chain event which attracted a record 1,700 visitors.

A look ahead
The year ahead will be busy as we continue our work, prepare for a government spending review and embed new ways of working across our businesses, including Magnox which will become an NDA subsidiary from September 2019. I'm personally motivated by the opportunity the NDA group has to make a real difference, as it delivers one of the most important and challenging environmental restorations in the world.

Finally, this year we are creating "One NDA", a stronger organisation with a more robust and standardised governance framework. For current and future employees, I am determined to establish the NDA group as a great place to work, where people are not just motivated by the importance of our mission, but by our culture, values, focus on delivery and the difference we are making today for future generations.

D. Peattie

David Peattie
Accounting Officer and Chief Executive
18 June 2019

Financial Overview

This year over £3 billion has been spent tackling the nuclear legacy while good progress has been made across the estate.

Securing maximum value from the funds allocated by Parliament, while at the same time balancing this against income uncertainty, remains a perennial challenge for the NDA.

It is pleasing to note that over the year we have again remained within the key parliamentary control totals, and the £3.2 billion expenditure has enabled significant progress to be made across the estate, as detailed in this report.

Behind the headline income of £1 billion, there have been 2 significant changes. During the year, the NDA implemented IFRS 15, a new accounting standard for the recognition of revenues from contracts, details of which can be seen in the notes to the financial statements. The end of reprocessing operations at Sellafield's Thermal Oxide Reprocessing Plant (THORP) produces a further change in the NDA's revenue profile, bringing to an end a long period of income generation.

This is the penultimate year of the spending review settlement agreed in 2015. The spending review settlement required a commitment from the NDA to deliver efficiency savings of £1 billion, and we continue to make good progress towards achievement of that target. Preparations are well under way for the next spending review, which will see a significantly lower level of income from commercial activities and demand greater focus on cost efficiency.

On the understanding that future BEIS sponsorship and parliamentary approval will continue, we will consider it appropriate to adopt a going concern basis for the preparation of the financial statements.

The NDA corporate centre has grown during the year, reflecting the first steps in moving to a new group operating model (One NDA) and the need to increase the capacity and capability of the organisation ahead of the transition of Magnox into a subsidiary from September 2019.

This will mean that over 90% of spend will be under direct NDA group controls. The changes in the NDA to date will serve to address the initial findings of the Public Accounts Committee and the Magnox Inquiry and provide a stronger base from which to address the findings of the full report when published.

We have generated a budgetary surplus of £32 million in the year, returned to HM Treasury.

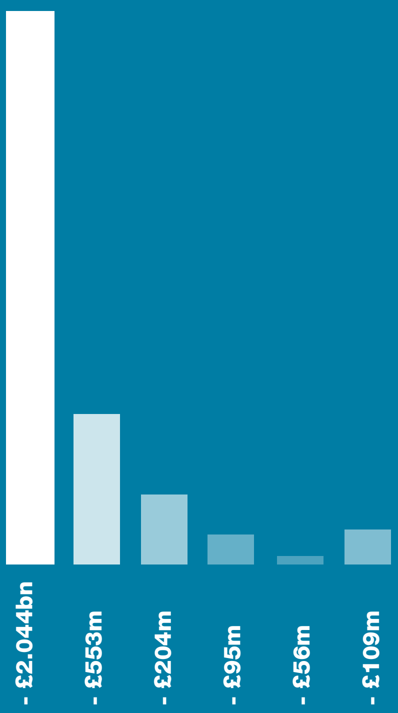
A change in the basis for calculating discount rates (including revised inflation assumptions) by HM Treasury has driven a £104 billion decrease in the discounted nuclear provision. The underlying undiscounted provision has increased in the year by £3 billion principally due to inflation. Details behind the key numbers are shown on pages 90 to 136.

David Batters
Group Chief Financial Officer

Performance against financial targets

How £3.061bn funding was used tackling the nuclear legacy

- **£2.044bn** Sellafield
- **£553m** Magnox
- **£204m** Dounreay
- **£95m** LLWR
- **£56m** Springfields and Capenhurst
- **£109m** Other



Expenditure limit **£3.210bn** - Expected income **£0.972bn** = Net funding limit **£2.238bn**

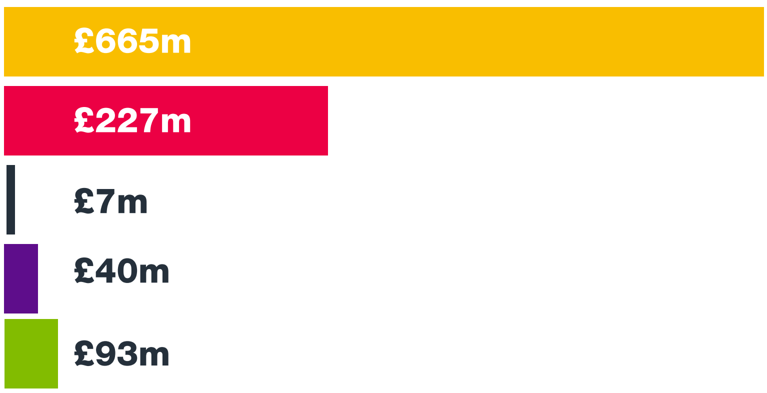
Actual expenditure **£3.237bn** - Actual income **£1.032bn** = Actual net funding **£2.205bn**

Other costs

Industry costs **£39m**
Fees to SLCs **£44m**
Energy costs **£38m**
NDA running costs **£55m**

Total £176m

NDA actual income £1,032m
£665m Reprocessing/waste contracts
£227m Spent fuel management
£7m Energy sales
£40m Nuclear materials and transport
£93m Other



Note: the figures in the above graph are prepared on the basis of government financial reporting (HM Treasury's Consolidated Budgeting Guidance) which differs in part from the basis used to prepare the financial statements.

One NDA

Our mission is to clean up the UK's earliest nuclear sites safely, securely and cost-effectively with care for people and the environment.

Our business model

The diagram indicates the organisational structure within the Group. See page 42 for a more detailed illustration of the estate structure and the organisations covered by this Annual Report and Accounts.

Our vision is to deliver our mission more creatively, transparently and efficiently, to be a great place to work and to be trusted to do more in the UK and globally.

The Nuclear Decommissioning Authority (NDA) is a non-departmental public body created through the Energy Act 2004. The clean-up mission is led by the NDA on behalf of government. Our plans for cleaning up each of our sites must be approved by the Department for Business, Energy and Industrial Strategy (BEIS) and Scottish Ministers who provide the policy framework.

Our sites

Our 17 sites are situated across England, Scotland and Wales and are grouped, regulated and controlled under 6 site licence companies (SLCs). These site licence companies are responsible for the safe operations and decommissioning of historic nuclear activities, with extensive support from the supply chain.

As well as its site licence companies, the NDA group comprises a number of specialist wholly owned subsidiaries, responsible for a wide range of activities including rail and shipping services, insurance, property and developing solutions for dealing with the long-term disposal of high and intermediate level waste for England and Wales.

A number of our sites are home to the UK's pioneering Magnox nuclear reactors that have helped generate up to 30% of the UK's electricity over the last 40 years or more, and Sellafield, in West Cumbria is our largest and most hazardous nuclear site.

Our 17 sites are at differing stages of decommissioning and each have their own unique challenges. Our goal is to continuously seek ways to optimise the way we work and share best practice across our entire estate, so we can deliver more for less and drive real value for the taxpayer.

How we are funded

NDA is publicly funded through BEIS and our total planned expenditure is voted upon annually by Parliament.

The revenue we generate through commercial activities across the NDA group reduces the level of public funding required from government. These activities are mainly spent fuel and nuclear materials management and transportation services.

Within the constraints of affordability, we seek to deliver best value for the UK taxpayer by focusing on reducing the highest hazards and risks, while ensuring that safe, secure and environmentally responsible operations at our sites are maintained.

One NDA group

We are unified by a mission of national importance

NDA

Dounreay

LLW Repository Ltd

Sellafield Ltd

Direct Rail Services

Magnox

INS International Nuclear Services

Radioactive Waste Management

NDA Archives Ltd

Rutherford Indemnity Limited

NDA Properties Ltd

What we do really matters. We're making a difference.

As one NDA group, we're proud to have one of the most advanced nuclear workforces in the world. More than 16,000 employees are part of our mission to clean up the UK's earliest nuclear sites.

We're focusing on dealing with a complex legacy built up from the 1940s onwards – with safety, security, environmental responsibility and value for taxpayers' money our top priorities. We're also developing the UK's waste management infrastructure to reduce the risks to this and future generations.

We deliver our mission through our subsidiaries and site licence companies. The NDA's role is to support our sites, businesses and employees, optimising delivery and managing performance by providing group leadership, strategic focus and governance.

We take an estate-wide view of how we deliver our mission, and we secure and allocate the funding to clean up our 17 sites. We work with our businesses, site licence companies and contractors to ensure that:

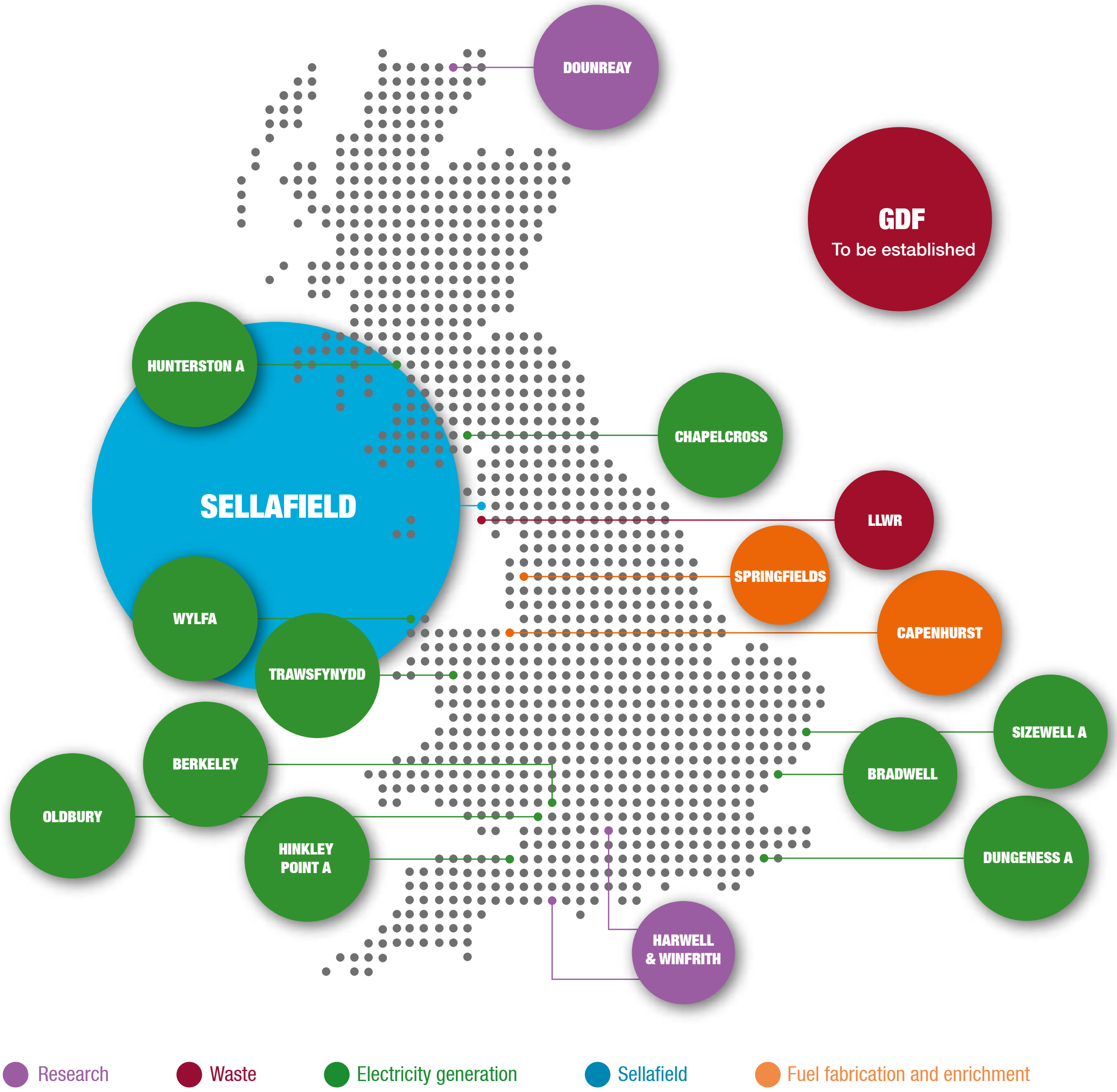
- **the right options are considered and chosen in line with government policy**
- **the right plans are in place for the long term to deliver the safest and most cost-effective clean-up**
- **the right skills and resources are available**
- **the right technology is developed**
- **where appropriate, local communities are supported economically and socially during and after the clean-up mission**

In 2016, Sellafield Ltd became a subsidiary of the NDA. Taking direct ownership of Magnox Ltd from September 2019 will allow us to further use our unique advantage of having a group-wide view to simplify and standardise our approach, removing barriers, supporting research and development and seeking innovation to deliver decommissioning more quickly and efficiently for the taxpayer.

As well as dismantling facilities, cleaning up sites and helping to secure a more sustainable future for the communities surrounding our sites, we have to fulfil the responsibilities placed upon us by the Nuclear Sector Deal. This includes growing a highly skilled workforce for the future, seeking ways to reduce the cost of decommissioning, and addressing the issue of gender balance.

The NDA's role is to support our sites, businesses and employees, optimising delivery and managing performance by providing group leadership, focus and governance.

Our mission is complex



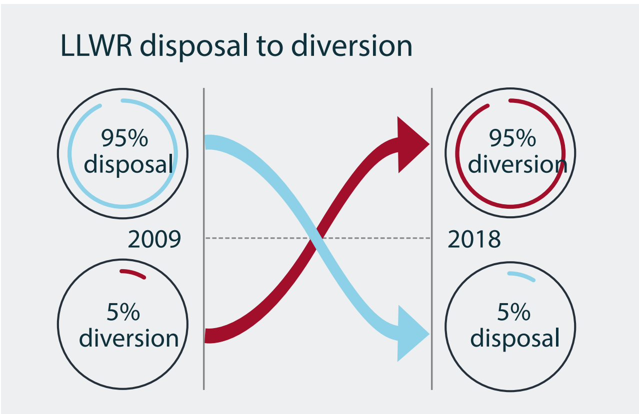
1,046 hectares of designated land on nuclear licensed sites

10 businesses

17 nuclear sites

15,988 employees across the estate

800+ buildings to be demolished



TELLING THE STORY OF PROGRESS AGAINST OUR STRATEGY

NDA STRATEGY

Purpose: **Energy Act requirement** that describes how we will deliver our mission

Period covered: 100+ years
Published: every 5 years
Public consultation: 12 weeks

NDA MISSION PROGRESS

Purpose: To provide our stakeholders with a clear, concise and simple story of NDA Mission Progress since 2005, that demonstrates delivery of NDA's strategic themes and outcomes as explained in NDA Strategy 2016.

Period covered: 100+ years

Published: every 5 years

- SPENT FUELS
- NUCLEAR MATERIALS
- INTEGRATED WASTE MANAGEMENT
- SITE DECOMMISSIONING AND REMEDIATION

NDA BUSINESS PLAN

Purpose: **Energy Act requirement** that describes what the main activities will be across our estate over the next 3 years and what funding will be available for them. Provides a 20 year picture of programme outcomes.

Period covered: 3 years
Published: every year
Public consultation: 8-10 weeks

MID-YEAR PERFORMANCE REPORT

Purpose: To provide a progress update against Business Plan targets. Incorporates NDA group targets.

Period covered: 6 months

Published: every year

ANNUAL REPORT AND ACCOUNTS

Purpose: **Energy Act requirement** that describes what has been achieved and what has been spent. Reports against Business Plan targets and gives updates on Priority Programmes and Major Projects. Also to contain overall progress update against our mission.

Period covered: 1 year

Published: every year

Delivering our mission

We break the mission down into 4 strategic themes, enabling work to be clearly defined and prioritised.

These areas are closely linked. However, the most urgent task is dealing with sites' highest hazard materials: spent fuel, nuclear materials and highly radioactive wastes. Once the inventory has been made safe, the redundant nuclear facilities can be dismantled and demolished.

SPENT FUELS

Our strategy defines our approach to managing the diverse range of spent fuels for which we are responsible, which are divided into Magnox, Oxide and Exotic.

Spent fuel is removed from the reactor for temporary storage in a pond or dry store until it can be dispatched to Sellafield.

Reprocessing extracts materials (plutonium and uranium) that could potentially be re-used and also generates highly radioactive wastes.

The NDA's strategy is to bring the reprocessing programme to an end. One of the reprocessing plants (THORP) has already shut and the Magnox reprocessing plant is due to complete its mission in 2020.

All remaining spent fuel will be safely stored until a permanent solution for disposal is available.

NUCLEAR MATERIALS

Our strategy defines our approach to dealing with the inventory of uranics and plutonium currently stored on some of our sites.

These nuclear materials are by-products from different phases of the fuel cycle, either manufacturing or reprocessing. All nuclear materials must be managed safely and securely; either converted into new fuel or immobilised and stored until a permanent UK disposal facility is available.

Consolidation of plutonium (at Sellafield) and uranics (at Capenhurst) is currently being carried out so the materials can be managed in an appropriate and effective way.

INTEGRATED WASTE MANAGEMENT

Our strategy considers how we manage all forms of waste arising from operating and decommissioning our sites, including waste retrieved from Legacy facilities.

Managing the large quantities of radioactive waste from electricity generation, research, the early defence programme and decommissioning is one of the NDA's biggest challenges. Some of this radioactive waste is in a raw (untreated) form, some has been treated and is being interim-stored and, in the case of low level waste, some has been disposed of.

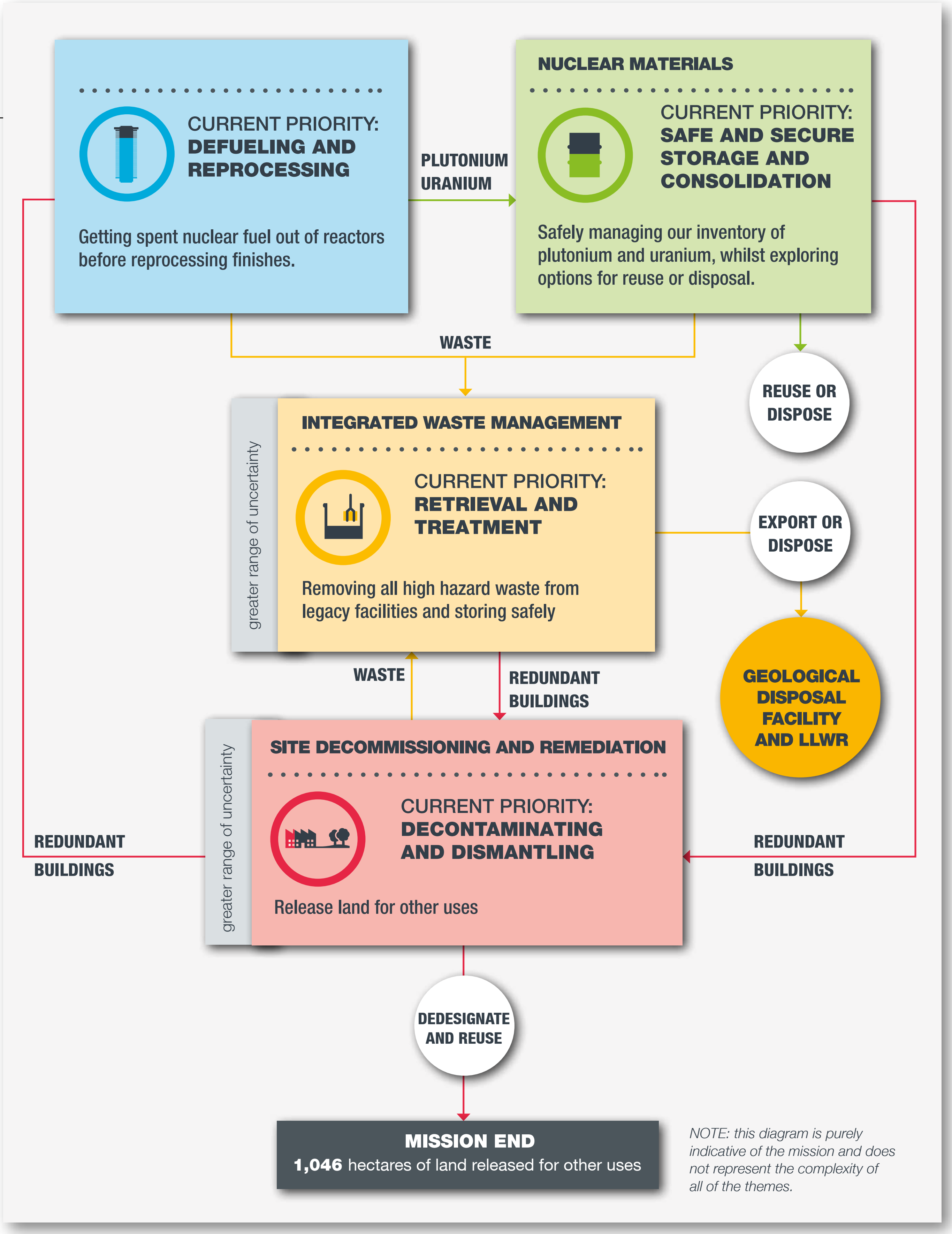
Retrieving, treating and interim-storing the radioactive waste from Sellafield's four legacy ponds and silo facilities is the NDA's highest priority.

SITE DECOMMISSIONING & REMEDIATION

Our strategy defines our approach to decommissioning redundant facilities and managing land quality in order that each site can be released for its next planned use.

After the buildings on our sites have been decommissioned, decontaminated and dismantled the land will be cleaned up to allow it to be released for other uses. At that point its ownership would transfer to the new user of the land.

The NDA is currently assessing alternatives for the final stages of decommissioning that could lead to earlier release of land, continued employment and simpler regulatory controls.



NOTE: this diagram is purely indicative of the mission and does not represent the complexity of all of the themes.

Progress to 2019

Since it was established in 2005, the NDA has made excellent progress in dealing with some of the most complex nuclear risks in the world.

We have identified the steps that we need to take to deliver our mission. We call these strategic outcomes.

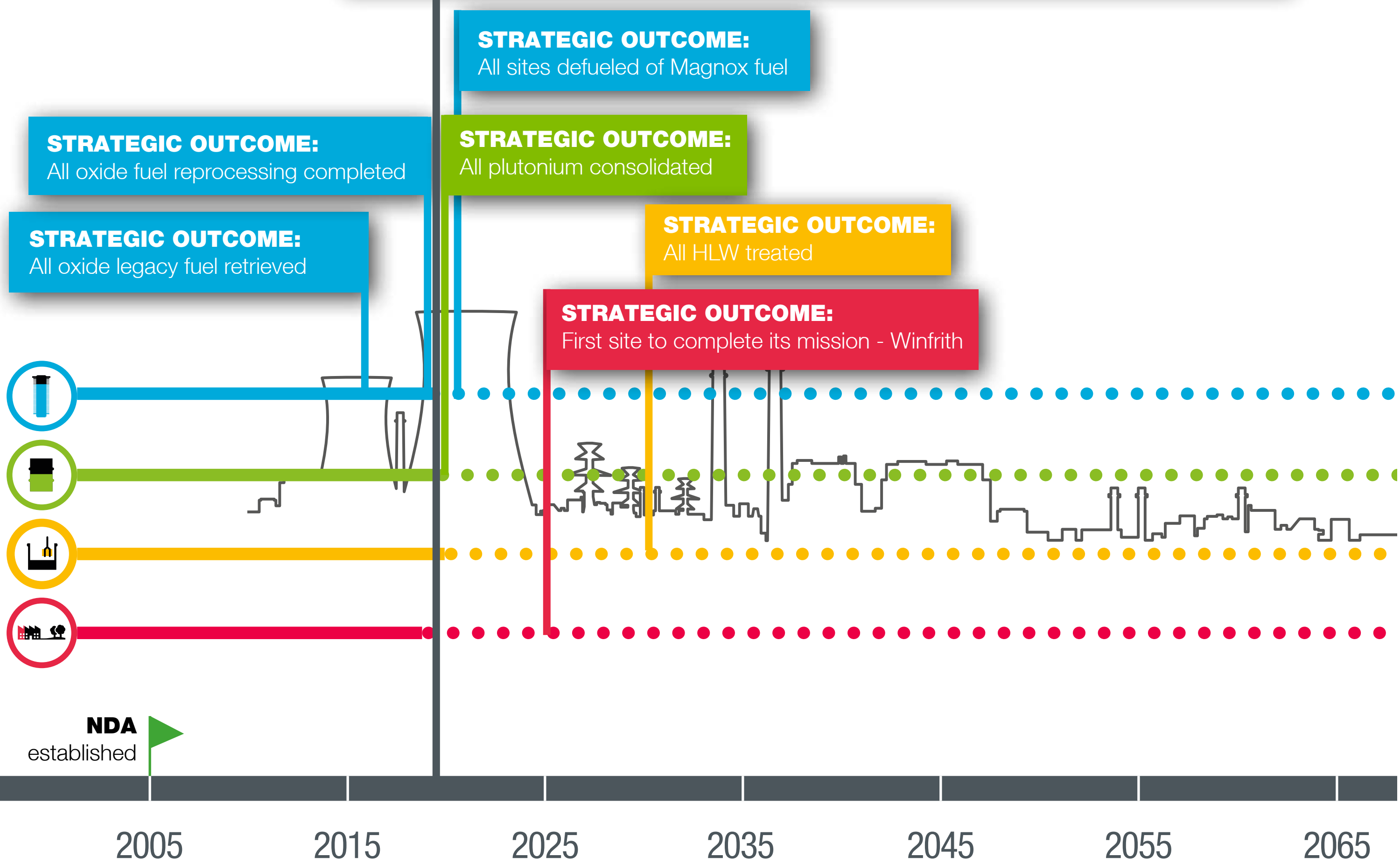
Two of our strategic outcomes (see timeline below) have been achieved and good progress is being made with the safe management of nuclear inventory and reduction of its risks.

More strategic outcomes will be achieved with the closure of the reprocessing facilities and the building of new modern treatment and storage facilities to manage nuclear material and waste - ultimately working towards the final disposal of nuclear inventory and the release of land for other economic uses.

> “Our mission will be complete when we release our sites for other uses.”
>
> NDA Strategy effective from April 2016, p19

953 hectares remaining

1,046 hectares of designated land on nuclear licensed sites for clean up under the Energy Act 2004



PROGRESS AGAINST PRIORITY STRATEGIC OUTCOMES

SPENT FUELS

ALL SITES DEFUELED OF MAGNOX FUEL	95%
ALL MAGNOX FUEL REPROCESSING COMPLETED	88%
ALL EXOTIC FUEL CONSOLIDATION COMPLETED	34%
ALL EXOTIC FUEL DEFUELED	43%

NUCLEAR MATERIALS

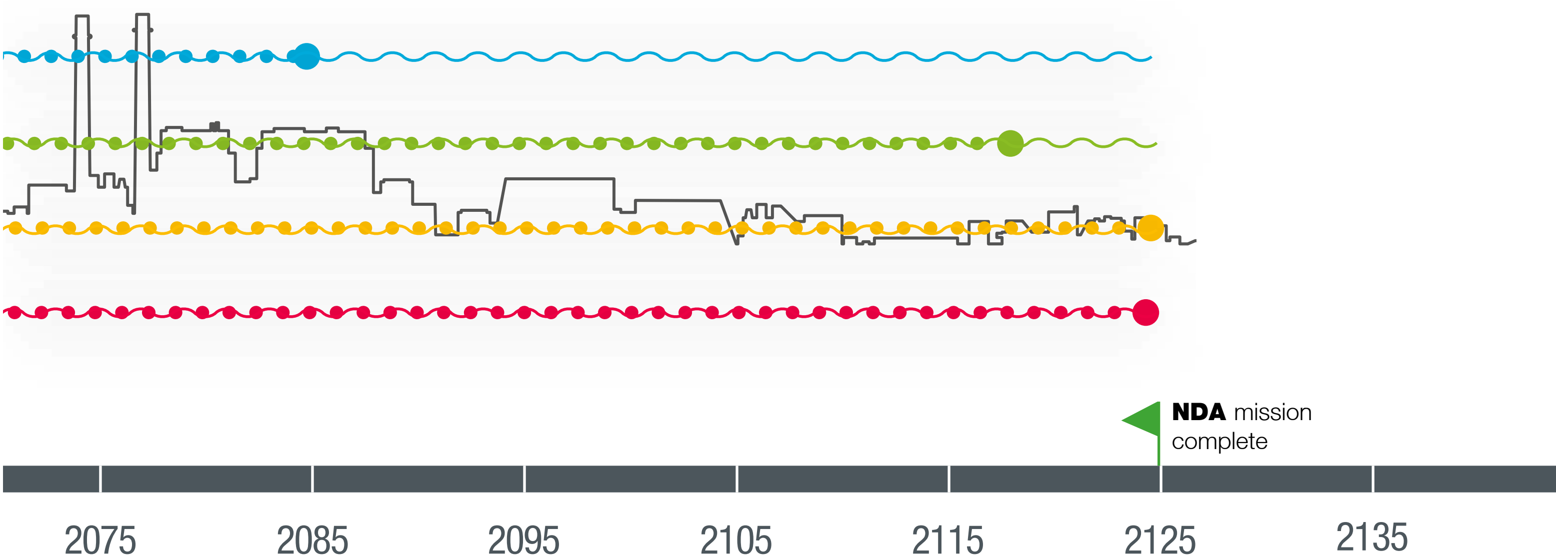
ALL PLUTONIUM PRODUCED	95%
ALL PLUTONIUM CONSOLIDATED	80%
ALL URANIUM PRODUCED	86%
ALL URANIUM CONSOLIDATED	86%

INTEGRATED WASTE MANAGEMENT

ALL HLW TREATED	70%
ALL HLW IN INTERIM STORAGE	80%
ALL WASTE REMOVED FROM LEGACY PONDS AND SILOS	6%
ALL ILW TREATED	9%

SITE DECOMMISSIONING & REMEDIATION

ALL RADIOACTIVE BUILDINGS - COMPLETED PRIMARY FUNCTION	46%
ALL RADIOACTIVE BUILDINGS - COMPLETED DECOMMISSIONING	26%
ALL RADIOACTIVE BUILDINGS - DEMOLISHED OR REUSED	23%
ALL LAND DEDESIGNATED OR REUSED	9%



Health, safety, security, safeguards and environment overview

It's our priority to carry out our technically-complex mission safely and efficiently, ensuring people and the environment are safeguarded at all times.

We set clear expectations across all of our businesses for the highest performance in environment, health, safety and security that reflects both international standards and policies, and relevant good practice from UK industry.

While fulfilling obligations as holders of licences, permits and authorisations rests with our site licence companies, it is the NDA's duty to have particular regard for the safety of people handling hazardous substances, the protection of the environment and security. We take our responsibilities seriously and monitor performance, holding the businesses to account.

We have started to work with our site licence companies to produce 5 year Health, Safety and Environment plans. This work will culminate in a single plan for the whole NDA estate which will be monitored for delivery by the NDA Group Director of Nuclear Operations.

We have responsibilities for the safety and well-being of our staff, the security of information that we use, and our own impact on the environment.

In October 2018 we held our first NDA group-wide safety and well-being event attended by over 200 colleagues from across the group. This was an opportunity to share good practice from across our businesses and drive innovation.

Building on this success, we are planning to hold our second event in September 2019, which will recognise the contribution of our people through the introduction of Safety and well-being awards.

We take our responsibilities seriously and monitor performance, holding the businesses to account where it is necessary to do so.

More details on our performance in health, safety, security safeguards and environment at the NDA can be found on page 78

During 2018/19, Mental Health was a focus for the NDA. To support the standards set out in the 'thriving at work' guidance, we established an NDA group-wide mental health delivery group, sponsored at Executive level by Dr Adrian Simper. The group provides an opportunity for each business to communicate, share and promote mental health at work. During 2019/20, we will be collaborating with our businesses on a group-wide mental health awareness campaign.

Overview of performance

Sellafield

Sellafield is a wholly owned subsidiary of the NDA

The long-term nature of our business means that delivery this year is a stepping stone for future years. Our ability to deliver risk and hazard reduction tomorrow relies on our ability to become a more efficient organisation today.

Sellafield is changing
On behalf of the NDA, we are doing this work safely while maintaining the security of the site and nuclear assets. In 2018/19 our safety performance was mixed. We had no significant nuclear site incident reports for the second year running, but we did have a number of lost time accidents, environmental conditions and personal contamination events that impacted on our overall safety and environmental trends. This resulted in some of the annual metrics being less favourable than previous years. We're continuing to focus on improvements in error prevention and creating the right mindset and environmental awareness. One of the ways that we are making Sellafield safer is through the clean-up of our highest hazards on the site, including:

- continuing decommissioning of nuclear facilities
- receiving, reprocessing and storing used nuclear fuel
- managing the UK's special nuclear materials
- delivering capital projects to support the mission

The end of reprocessing in the Thermal Oxide Reprocessing Plant (THORP) in 2018, and the planned cessation of Magnox reprocessing in 2020 represent a significant milestone achievement for our employees past and present, and mark a seismic shift in our focus towards environmental remediation.

This year we made good progress in the clean-up of our highest hazard facilities including:

- installing retrievals equipment on the Pile Fuel Cladding Silo (PFCS) and the Magnox Swarf Storage Silo (MSSS)
- continuing to retrieve fuel, waste and sludge from the First Generation Magnox Storage Pond and Pile Fuel Storage Pond
- re-purposing existing waste plants so we can retrieve waste from the ponds and silos before new waste storage buildings are available

In 2019/20 we will start retrievals from the MSSS and the PFCS. This milestone will mean that all 4 legacy buildings will be routinely exporting waste for processing and safe, long-term, storage.

A more visible change on the site was the start of work to remove the diffuser from the ventilation stack damaged by the Windscale Fire in 1957.

Our challenge is to deliver more hazard and risk reduction by becoming more efficient. This means reducing the cost of work at Sellafield, diverting money from overheads to front line decommissioning, retraining and reskilling people into priority work, and working differently with the supply chain.

Changing the way that we work with our supply chain
We cannot deliver the challenges alone. We rely on our supply chain partners, from the experience and capability of global companies to the innovation and agility of small to medium-sized enterprises.

Our long-term alliance frameworks are delivering benefit in decommissioning, design and infrastructure. In 2019 we extended this approach to project management through a 20-year contractual arrangement – Programme and Project Partners, where Sellafield Ltd will act both as intelligent client and delivery partner. This will enable future performance improvement by utilising the expertise and knowledge from these supply chain partners.

We have also introduced LINC (Liaise, Innovate, Network, Collaborate), an initiative that simplifies the procurement process and allows small to medium-sized enterprises to collaborate and bid directly for defined packages of work.

Changing the way we work with each other
The NDA group survey on equality, diversity and inclusion (ED&I) revealed some unsettling facts about our organisation's culture and the way we treat each other. In 2018/19 we started to tackle this, introducing an ED&I council and launching campaigns to address mental health, bullying and harassment.

We have more work to do in this area and will continue to prioritise it in 2019/20 so we can become the organisation we want to be.

Paul Foster
Chief Executive Officer,
Sellafield Ltd

#ThanksTHORP

Since the Thermal Oxide Reprocessing Plant (THORP) began operating, it has brought in more than £9 billion to the UK from around the world by reprocessing more than 9,300 tonnes of fuel.

The plant was designed to operate for 25 years and has now reached the end of its design life. The closure of THORP will reduce our authorised discharges and eventually reduce the hazard posed by the Sellafield site.

Shearing the final batch of fuel in THORP in November 2018 was not a signal for the team to turn the lights out and lock the door behind them.

Parts of the highly engineered building, such as the medium active evaporator, will continue to support other work at Sellafield.

At the same time, we will use the receipt and storage area to store used fuel from EDF Energy, helping them to keep their nuclear power stations running and the lights on across the UK.

The fuel will be stored in the receipt and storage pond, which will continue operating until around 2030.

The decommissioning of THORP will take until around 2075 to finish. This will be different work, with different challenges, and different skills required.

Through a programme of retraining and reskilling, we have redeployed people to new jobs at Sellafield, meaning that there were no redundancies as a result of this significant change to our mission.

> Parts of the highly engineered building will continue to support other work at Sellafield

Overview of performance

Magnox

Magnox Ltd is owned by the Parent Body Organisation, Cavendish Fluor Partnership (CFP) comprising Cavendish Nuclear and Fluor Corporation. On 1 September 2019 Magnox will become a wholly owned subsidiary of the NDA.

Magnox achieved its best safety performance in more than 4 and a half years during 2018/19, with its total recordable incident rate falling to 0.21 from a peak of 0.76 in 2015/16, while making significant progress in reducing nuclear hazards across its sites.

At Wylfa, we accelerated defuelling in the latter part of the year after a slow start due to reliability issues with ageing plant. The reactors are now over 80 per cent defuelled and we expect to complete the task by autumn 2019.

Magnox continues to make good progress transferring nuclear materials from Harwell to Sellafield, completing more than 100 shipments. The first shipments of Dragon nuclear materials to Sellafield also started.

A Magnox first
Bradwell became the first UK commercial nuclear power station to reach care and maintenance, a safe and passive state which lasts for around 70 years before final site clearance. This is historic for Magnox and for the wider UK nuclear industry. Learning from Bradwell will be used to inform work on other NDA sites and the AGR reactors when they reach the end of their operational life.

We've seen success in removing waste sludge from the ponds and draining them down at Oldbury and Dungeness, with draining due to start imminently at Sizewell. We're confident that by the close of 2019, all Magnox ponds, apart from Chapelcross, will have been drained.

Our waste strategy continues to enable efficiencies as we consolidate intermediate level waste packages onto fewer sites. Packages have been moved from Dungeness to Bradwell and shipments are due to begin from Oldbury to Berkeley. We've also made progress in building stores at Hinkley, Chapelcross and Harwell, as well as new waste processing plants across the fleet.

Managing conventional hazards effectively is also a huge part of what we do, and I'm pleased to say we are making progress across all sites in asset care and asbestos management.

Supporting our communities
We take our responsibilities to our local communities seriously, with the Magnox Socio-economic Scheme supporting many vital projects that help mitigate the impact of decommissioning. A recent example is the Envision project which works with young people from schools in south west England, particularly those from disadvantaged backgrounds, in a programme to improve their employability.

A committed workforce
None of this would be possible without the commitment of our employees and we've been working hard to promote a culture of respect and inclusion and foster a positive environment for dealing with mental health and well-being.

The CFP contract to manage Magnox ends on 31 August 2019 and we're committed to continuing the good work and ensuring a seamless handover so Magnox is in the best possible place going forward.

Tony Moore
Managing Director,
Magnox Ltd

Case study

PRIORITY - Site decommissioning and remediation

Teamwork wastes no time in delivering innovation

A complex technical challenge to retrieve radioactive debris from a Wylfa spent fuel store has finally been solved, thanks to the collaborative determination of the site's workforce and two small Welsh companies.

The initial problem dated from 1991 when water from a leaking roof led to corrosion of a small number of spent fuel elements in a dry store cell, making it impossible to retrieve the fuel using conventional equipment.

Removal of the corroded elements took place a number of years ago leaving some contaminated residual debris in the 37 storage tubes that had housed the damaged elements.

Few detailed plans from the 1970s construction period remained, and an understanding of the cell's precise internal configuration had to be developed by interpreting existing drawings and data gathered from on-site surveys by the Magnox team.

Custom-designed equipment was needed to gain access through the roof, reach down and retrieve the debris, then package it into cast-iron containers. Two local engineering businesses were appointed, specialising in toolmaking and heavy lifting equipment.

Working closely together, Anglesey-based BICO Engineering, MONA Lifting Ltd and the Magnox team manufactured the toolkit components and lifting gear to complete the retrievals. The aim was to produce a system that would work seamlessly and accurately on the very first deployment.

A 3D electronic model of the dry store was developed, as well as one built from MDF, enabling the design concepts to be fully tested. This was followed by trials in an off-site test facility allowing the bespoke equipment to be refined further before being used on site.

The proximity of both businesses to Wylfa site meant any uncertainties or issues could be resolved both speedily and effectively.

Following 6 months of full rehearsals and modifications, the equipment was successfully deployed and has now safely retrieved all the debris and the tubes.

As well as successfully delivering the original scope, the team also removed a further 10 tubes that proved to be badly contaminated.

The dry store cell will now be taken out of service and dismantled as the site progresses with its decommissioning programme.

Unlike most other Magnox power stations, Wylfa built dry stores for spent fuel elements, lowering them into steel tubes arranged inside skips, where they were stored for a period of time before despatch to Sellafield for reprocessing.

With concrete walls two metres thick, the seven-metre deep cells were designed only for remote access via discharge chutes. Deployment of the workforce into a highly radioactive space was never envisaged.

Overview of performance

Dounreay

DSRL Ltd is owned by the Parent Body Organisation, Cavendish Dounreay Partnership, comprising Cavendish Nuclear, Jacobs and AECOM.

The work to decommission Dounreay is recognised internationally as one of the most complex closure programmes being undertaken and hazard reduction continued on multiple fronts this year as we progressed towards the site's interim end state.

A multi-year project, undertaken in conjunction with the US Department of Energy, has been completed to safely package and transport around 700kg of highly enriched uranium, representing a significant milestone in an ongoing programme to remove nuclear material from the site.

We also took big steps towards large-scale skyline changes with the award of contracts to build a new waste store and demolish Dounreay Materials Test Reactor, the oldest of the site's 3 reactors. This follows the conclusion of a 10-year campaign, taking apart supporting facilities including a cooling pond and structure housing a 27-tonne crane.

Decommissioning the site's fuel cycle area requires a range of bespoke and first-of-a-kind techniques. Highly skilled teams continue to manually strip and dismantle redundant fuel examination cells. More than 2,000 entries were made by workers into complex controlled areas in the last year.

Progress also included making safe the first 30,000 litres of higher activity liquid waste produced during historic reprocessing of fuel from the Prototype Fast Reactor and building a 12-metre tool that was inserted into the same reactor to begin removal of residual sodium.

Delivering such a complex programme brings significant challenges and the removal of breeder fuel from the Dounreay Fast Reactor was delayed by several months this year when a crane developed a fault, a reminder of the increasing challenge of managing ageing assets. The team delivered a series of major repairs and the work to recover fuel, inside the reactor for several decades, has resumed.

Aiming for zero harm

Safety, security and environmental compliance remained at the top of our agenda. The Scottish Environment Protection Agency rated the site and adjacent waste vaults as 'excellent' in its most recent annual compliance assessment scores – a significant improvement from the previous year. It follows a series of reviews and infrastructure investment, with commitments made to continue upgrades in the next few years.

The workforce also achieved more than a year without a lost time accident and the lowest total recordable incident rate on record. We recognise the potential risk of complacency when performance is strong and so a programme is being rolled out to staff to raise awareness and target zero harm.

Our people at the heart of the mission

We welcomed 10 graduates and 11 apprentices and administration trainees as part of our efforts to ensure we have the skills to deliver our mission.

More than 98% of staff participated in unconscious bias training and a new well-being pledge was signed underlining our focus on equality, diversity and inclusion. We also doubled the number of female STEM ambassadors, with 86 men and women supporting more than 1,000 local students.

One of our female technicians was shortlisted for a national prize at the Women in Science and Engineering (WISE) awards and outgoing Managing Director Phil Craig was named Ally of the year at the Women in Nuclear UK awards.

Supporting the creation of suitable alternative employment

We continued to support the Caithness and North Sutherland Regeneration Partnership as the region looks to a future beyond the closure of the site. The NDA's decision to invest £5 million in Scrabster Harbour, along with Sutherland's selection as the preferred location for a vertical launch satellite site, are big steps forward this year and we continue to actively assist these, and other, priority projects in the area.

Martin Moore
Managing Director,
DSRL Ltd

Highly enriched uranium removal (HEU)

A multi–year project was completed to safely package and transport around 700kg of highly enriched uranium to the United States where it will be downblended and used as fuel in civil nuclear reactors.

42% of breeder fuel removed from Dounreay Fast Reactor

98% of the workforce has undertaken unconscious bias training

The work, which involved the Dounreay workforce and more than a dozen partner organisations, marks the largest removal of material to the US in the history of the Department of Energy's National Nuclear Security Administration (NNSA) Nuclear Material Removal Programme. The transfer plan was announced at a Nuclear Security Summit held in Washington DC in 2016 and will see the US send a different form of the material to Europe in return, where it will be used as research reactor fuel and in the production of medical isotopes.

NDA Chief Executive David Peattie said: "The successful completion of the complex work to transfer Highly Enriched Uranium (HEU) is an important milestone in the programme to decommission and clean up Dounreay site."

The project also helped to create a socio-economic legacy, with the NDA investing around £5.5 million to make improvements at Wick John O'Groats Airport. This made sure it was fit-for-purpose for the project and contributes to its future sustainability.

Dounreay Site Restoration Limited Chairman Simon Bowen added: "Delivery of this strategically important project is testament to the hard work of the Dounreay team and the collaborative approach taken by them, the supply chain and the other organisations involved, who have all helped make this a success."

Overview of performance

Low Level Waste Repository

LLWR Ltd is owned by the Parent Body Organisation, UK Nuclear Waste Management Ltd (UKNWM) comprising AECOM, Studsvik AB and Orano SA.

Safety has remained our highest priority during the year, and I am pleased that we have seen an improvement over the last 12 months.

Our Total Recordable Incident Rate fell from 1.4 at the start of the financial year to 0.2 at the end, realising the benefits of our safety improvement plan, developed in conjunction with our Parent Body Organisation, UK Nuclear Waste Management Ltd.

LLWR received national recognition during the year with a hat trick of awards: RoSPA Gold; Considerate Constructors Gold; and a Green Apple Environmental Award.

I took up my position as Managing Director following Dennis Thompson's decision to step down at the end of September 2018. Our aim was for a smooth transition with no adverse impact on the workforce or stakeholders, which we successfully achieved. Dennis continues to bring his experience to bear on the organisation as the non-executive Chairman of LLWR's Board of Directors.

Since the start of our treatment and diversion services we have diverted the equivalent of over 11,500 low-level waste containers that would previously have been disposed of at the Repository. This has resulted in £95 million cost avoidance for NDA in 2018/19; a huge step towards our final 5-year contract term savings commitment of £150 million.

We finished the year 30% ahead for the transport of low level waste for treatment and diverted 96% away from the low level waste repository.

We've continued to make sound progress on the plutonium contaminated materials decommissioning programme. We are on track to safely and compliantly complete the decommissioning activity by Q1 of 2019/20 at a cost of around £80 million, against a baseline of £100 million.

Despite a slower than scheduled start, we have now completed the preliminary design phase of the repository development programme ensuring alignment with our environmental safety case.

The programme has also discharged on time a number of planning conditions as requested by Cumbria County Council. Work will continue through the next phases of the programme to recover the schedule delay.

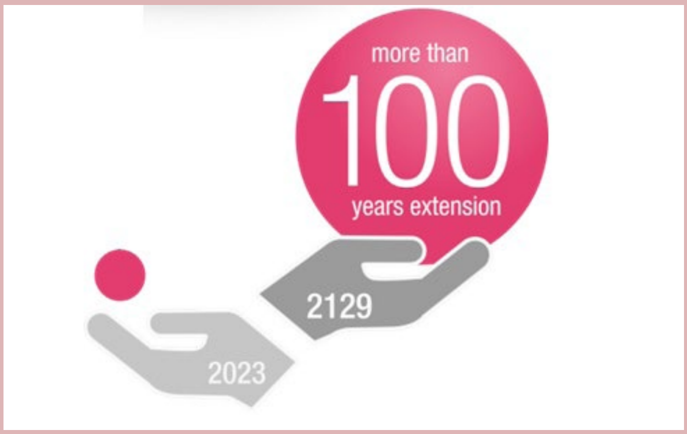
We are continuing our work on special waste projects. Fifteen boxes of waste from the Windscale Advanced Gas-Cooled Reactor have been consigned to the repository for disposal, freeing up space in the Sellafield intermediate level waste stores to support high hazard waste retrievals.

All permissions are now in place to receive re-categorised low level waste plutonium contaminated materials from Sellafield. This will also release valuable storage space at Sellafield and provide savings to the UK taxpayer in the region of £15 million-£20 million.

Paul Pointon
Managing Director,
LLWR Ltd

Diversion versus Disposal

LLW Repository Ltd has come a long way in a short time. Little over a decade ago, it operated a waste disposal facility receiving low level waste at an unsustainable rate.



Today it has evolved into a waste management services company, offering a full range of options to customers to reduce, re-use, recycle and dispose of their wastes, rather than just dispose of them at the repository site.

The repository has operated safely since 1959, ensuring that low level waste generated in the UK is disposed of in a way that protects people and the environment.

But in the early years of the 21st century, containers of waste were arriving for disposal at an unsustainable rate, prompting forecasts that the facility was on course to close by the mid-2020s, leading to the requirement for a new highly engineered site at a cost of over £2 billion.

A radical policy change was required, to solve the UK's short-term capacity gap and the longer-term issues facing the industry.

LLWR Ltd was established in 2007 to hold the nuclear site licence for the repository. The following year UK Nuclear Waste Management Ltd (UKNWM), an international consortium, won the 17-year contract to manage and operate LLWR and took over as the Parent Body Organisation (PBO).

Vault 9 opened in 2010 to address shorter-term capacity issues and this was followed by the launch of a suite of waste management services, to ensure safe and effective options to waste producers to reduce and recycle their wastes. A national waste programme was introduced to direct strategy in the industry.

The environmental safety case was submitted to the Environment Agency in 2011 and a new environmental permit was issued in 2015 guaranteeing the operation of the site for decades to come.

The figures speak for themselves. During 2018/19, fewer containers than ever - 93 - were sent to the repository for disposal, which is now reserved largely for waste that cannot be treated, or the residual wastes that remain after a treatment process has been completed. The expected container receipts for 2019/20 may be as low as 75.

In 2018/19, less than 5% of low level waste faced disposal at the repository. A decade earlier the figure was 95%.

UKNWM is now embarking on the third and final term of its contract. And if the current diversion performance is maintained, the repository is only expected to close its gates for the final time in 2130.

During 2018/19 fewer containers than ever were sent to the repository for disposal.

The NDA: Our people

Our people underpin our success. Our focus is on developing a high-performing organisation that is committed to continuous improvement in all that we do.

We want the NDA to be a great place to work. During 2018/19, we have focused on activity that will support the success of our businesses and ultimately our mission by strengthening effectiveness, innovation and collaboration.

We value greatly our relationship with the trade unions. To help us deliver successful decommissioning, we have been working with them at national and local levels to develop strong strategic partnerships that will take us into the future.

To fulfil our responsibilities under the Nuclear Sector Deal, we are taking a lead role nationally through our membership of the Nuclear Skills Strategy Group (NSSG). The skills group is developing the people theme of the Nuclear Sector Deal and at the NDA we have aligned our NDA group people strategy to reflect the national targets and aspirations. We have also continued to work with government and across the NDA group on workforce reform, specifically related to pensions.

Great places to work

As part of our journey towards making all NDA businesses great places to work, where colleagues feel able to share their ideas, views and concerns and feel supported, trusted, valued and respected, we have launched our Equality, Diversity and Inclusion strategy. It encourages collaboration across the NDA group whilst celebrating individual approaches and endeavours, reflecting the businesses' purpose and geographical locations.

We have established a progressive approach to mobility and transferability across the group, supporting career development, talent management, succession planning and progression.

In developing a workforce that is able to meet future clean up demands, we have during the past year undertaken a skills audit across the group. This has helped us to gain a clearer understanding of our skills challenges, and where the opportunities lie to work more collaboratively and innovatively across the NDA group to address these challenges.

More details on the recruitment and development of our people can be found on page 67-77.

Cyber Security Apprentices

The next generation of cyber security professionals are benefiting from one of the UK's first Cyber Lab classrooms, funded by the NDA.

The state-of-the-art facility, based at Energus, in Cumbria, has been specially designed to train the next generation of cyber experts.

The facility was funded through the NDA's Cyber Security and Resilience Project and forms part of the NDA cyber programme.

The Cyber Lab is an example of the NDA demonstrating a long-term commitment on cyber security – an area where it is looking to invest £80 million over the next 5 years.

Energus and the NDA are also leading the way nationally, working with GCHQ, the national cyber security centre. The training addresses a cyber security skills gap across the nuclear industry and grows capability across the NDA group.

This work directly supports the UK Government's Cyber Security strategy, building the pool of talent necessary to protect the UK from cyber attack and cyber crime.

Recruitment for the third cohort of cyber apprentices is currently under way. The cyber skills programme is also involved with Science, Technology, Engineering and Maths (STEM)-based training programmes for children and young people aimed at inspiring future generations of cyber trainees.

The knowledge and expertise of these home-grown students will go a long way in helping to keep the NDA, its businesses, and the wider UK, safe from the growing cyber threat.

It is important that we continue to attract the brightest young people to be part of our clean-up mission.

Nurturing a workforce of the future
It is important that we continue to attract the brightest and most committed young people to be part of our clean-up mission. Over the past year we have increased the number of apprentices and graduates that we recruit across the NDA group. We now have over 750 apprentices and 200 graduates on development programmes. We are reviewing the way we recruit to attract a more diverse workforce that will meet our current and future needs.

In 2018 we celebrated 10 years of the nucleargraduates programme. Our aim is for this already excellent programme to become the leading graduate pathway for the nuclear sector.

To help encourage and support the interest in STEM subjects from young people, we have reviewed how we work with schools, and published our options paper for consultation during the summer, 2018.

We are now aligning our group-wide approach with the NSSG. We have incorporated this work into the development of our Early Careers Strategy which will be published this summer.

Securing skills for the future
Our people strategy will be a continuous focus for us, supporting our people, identifying new talent and securing the skills we require for the future, ensuring that as one NDA, we are best placed to deliver our mission.

In 2019/20 we will launch our early careers strategy, continue to work closely with government on workforce reform, develop further our relations with the trade unions and implement a comprehensive framework of policies and standards in support of all the functional areas of the people strategy.

Working with our stakeholders

Engaging openly and transparently with all of our stakeholders is crucial to building the support, confidence and trust we need to deliver our mission.

In 2018/19, the total committed NDA group expenditure was approx £18.6 million, supporting more than 200 projects all across the UK.

It is important that we consider a diverse range of stakeholder views as part of our decision making process. We engage with stakeholders at the local level through our Site Stakeholder Groups and at the national level through our National Stakeholder Summit. We also run a number of issue-led engagement processes when required, particularly working closely with the local authorities around our sites to ensure alignment between our strategies and plans.

To support our vision of increased openness and transparency, we have recently published our Mission Progress Report which will provide a consistent way of reporting our progress across the NDA group. This report is available on our website: gov.uk/nda

Social impact
We are committed to supporting activity that helps sustain local communities affected by our decommissioning work.

Many of our 17 sites are located in remote parts of the UK, and we make significant contributions to their local economies through employment and supply chain contracts.

In line with our obligations, we take account of the impact of our decommissioning activities, spending one per cent of our overall expenditure on local projects. This funding is intended to support local communities as sites head towards closure.

Working in collaboration with local organisations, we focus on initiatives to improve education, training, employment, business support measures and economic diversification. Funds are allocated through a range of routes, including directly by the NDA, through our site licence companies, as well as Parent Body Organisations.

In 2018/19, the total committed NDA group expenditure was approximately £18.6 million, supporting more than 200 projects across the UK, ranging from small-scale social schemes to multi-million pound investment in major regional infrastructure.

Case study

NDA pledged £5 million in 2019 towards upgrading Scrabster Harbour

The NDA agreed a grant of £5 million in 2019 towards upgrading Scrabster Harbour in the far north of Scotland, improving its capacity to welcome larger cruise ships and vessels working in the offshore oil and gas industry.

Refurbishment of St Ola's pier to create deep-water berths is set to create up to 50 new jobs, increase commercial traffic and attract leisure visitors, providing a boost to tourism. Revenue is forecast to increase by 18% over 5 years.

Scrabster is already one of the UK's most important ports, supporting fishing, the oil and renewables industries as well as providing a vital ferry link to Orkney.

Worth £17 million in total, the improvements are a joint investment with Scrabster Harbour Trust, Caithness and North Sutherland Regeneration Partnership (CNSRP), Highlands and Islands Enterprise (HIE) and Scottish government.

The work will involve dredging to increase the depth of the water and modifications to the pier itself, enabling larger vessels to berth. Other measures include creation of a business/industrial park near the harbour and seabed reclamation south of the main harbour to create additional laydown space or industrial land.

The NDA has already contributed more than £3 million to harbour regeneration measures since 2010, as part of an ambitious investment programme launched by the Trust in 2007. The Trust's Board of Management is appointed from the local community members, with all operational surpluses reinvested in the port and its infrastructure.

Technology and innovation

Cleaning up the legacy from the UK's post-war nuclear programme requires ground-breaking science, innovative thinking and novel engineering.

Back in the 1940s, the country's scientists were pushing the boundaries of knowledge. Many of their experimental reactor designs were unique, producing radioactive wastes and spent fuel that no-one had ever dealt with before. The focus, however, was on making technologies work rather than future dismantling programmes.

Today, our challenge is to clean up this complex legacy, managing diverse kinds of waste that have been accumulating for decades, demolishing structures and returning sites back to their communities.

Our progress depends on clearly understanding the problems, finding solutions and ensuring the cost for taxpayers remains acceptable.

Our commitment to technology and innovation is crucial to our decommissioning approach, aiming to solve the challenges more effectively, more efficiently, more safely and, where possible, for less cost. We invest around £85-£100 million annually into research and development (R&D).

The majority of our R&D investment is delivered via our site licence companies and subsidiaries, who carry out the R&D work, together with their supply chains, addressing technical issues specific to their sites.

Separately, the NDA also maintains a strategic R&D portfolio of around £8 million a year to commission projects directly, in areas with potential to have an impact across a number of sites or to influence overall group strategy.

We collaborate with other public and private-sector bodies to leverage additional investment for projects that benefit decommissioning.

The aims of our NDA portfolio are to:

- **help shape and underpin the NDA's overall strategy for the UK**
- **deliver innovation across multiple sites**
- **develop vital technical expertise for the future**

Case study

Cutting-edge technologies to tackle highly radioactive Sellafield facilities

Five collaborative projects involving cutting-edge technology are taking shape after each secured up to £1.5 million of funding from the NDA, government agency Innovate UK and BEIS.

The Integrated Innovation for Nuclear Decommissioning competition was launched in 2017, investing a total of £8.5 million to develop new ways of tackling highly radioactive facilities where workforce access is too difficult.

Sellafield's two spent fuel reprocessing plants, which are due to end operations by 2020, require innovative systems that can access hundreds of high-hazard cells, measure radioactivity, cut up the contents (including large vessels and many miles of pipework), segregate the waste, and then remove it for treatment and safe storage .The projects are developing an integrated range of technologies that can be combined into a single seamless process for use across different facilities.

Technologies and solutions being investigated include immersive virtual reality (VR) interfaces to control activities and support planning, together with the latest robots, ranging in size from large industrial giants to small ant-like devices that can easily be replaced in the event of a break-down. The solutions include transfer of technology and systems that have been developed for other sectors such as space and automotive.

One of the autonomous navigation systems was developed for missions to Mars and will be adapted to map the interior of a radioactive cell.

The competition was launched in 2017 and has attracted interest from more than 100 organisations including small businesses, global corporations and academic institutions.

All the projects are being developed by collaborative consortia formed specifically for the competition and involving almost 30 participants.

Five promising ideas have made it through to the final stages after being whittled down from a shortlist of 15.

The consortia are currently finalising prototype demonstrators for testing in a simulated radioactive environment. The next phase of the competition is to evaluate the potential for deployment in a radioactive environment at Sellafield.

All have already attracted interest from wider industry sectors both at home and overseas, and could support the global marketing of UK nuclear expertise.

Collaborating with Innovate UK and BEIS has enabled us to maximise our investment and support their goals to drive growth in the UK by supporting innovation.

> NDA R&D involves more than 70 supply chain organisations in the UK and overseas.

NDA organisational structure

Department for Business, Energy and Industrial Strategy (BEIS)
Sets Policy, Governance and Funding

Nuclear Decommissioning Authority (NDA)
Provides group leadership and focus to:
Strategy and Planning, Governance and Assurance, Delivery Optimisation, Manage and Report Performance

Site Licence Companies

DOUNREAY SITE RESTORATION LTD	LOW LEVEL WASTE REPOSITORY LTD	MAGNOX LTD*	SELLAFIELD LTD	NDA ARCHIVES LTD	NDA PROPERTIES LTD
PBO Cavendish Dounreay Partnership Ltd Consortium Cavendish Nuclear, Jacobs, AECOM	**PBO UK Nuclear Waste Management Ltd** Consortium AECOM, Studsvik AB, Orano SA	**PBO Cavendish Fluor Partnership Ltd** Consortium Cavendish Nuclear, Fluor Corporation	***Responsible for the safe and secure operation and clean-up of the Sellafield nuclear site*** Wholly owned subsidiary of the NDA **NDA Group	***Archive and records management services*** Wholly owned subsidiary of the NDA **NDA Group	***Property management of assets located outside the nuclear licence site boundaries*** Wholly owned subsidiary of the NDA **NDA Group

M&O contract relationship (Dounreay Site Restoration Ltd, Low Level Waste Repository Ltd, Magnox Ltd)

* On the 1 September 2019, Magnox Limited will become a wholly owned subsidiary of NDA.

Other Businesses that support our mission

RUTHERFORD INDEMNITY LTD	DIRECT RAIL SERVICES LTD	INTERNATIONAL NUCLEAR SERVICES LTD	RADIOACTIVE WASTE MANAGEMENT LTD	URENCO NUCLEAR STEWARDSHIP LTD	SPRINGFIELDS FUELS LTD
Nuclear Liability, property and other insurance for NDA and its Businesses Wholly owned subsidiary of the NDA **NDA Group	*Rail transport services for nuclear and non-nuclear* Wholly owned subsidiary of the NDA **NDA Group	*International nuclear transport, design and licensing services* Wholly owned subsidiary of the NDA including subsidiaries; PNTL, INS Japan, INS France SAS **NDA Group	*Plan and deliver geological disposal of higher activity wastes* Wholly owned subsidiary of the NDA **NDA Group	**Owner** URENCO	**Owner** Westinghouse Electric UK Holdings Ltd
				Decommissioning contract, residue processing, leases and other commercial arrangements	

**NDA Group for Statutory Accounts

NDA Corporate Centre performance

NDA Corporate Centre performance

NDA Corporate Centre key activities 2018/19

The NDA sets the group-wide strategy, performance manages the operation of the businesses and provides assurance across the group to ensure value is delivered for the taxpayer.

The businesses are responsible for running day-to-day activities at site level, delivering progress for the NDA group, while a range of businesses operate the specialist services needed to support our work.

This section covers progress towards the NDA Corporate Centre key milestones and activities outlined in our 2018/21 Business Plan. Key milestones and activities are agreed at the start of each financial year and are grouped by strategic theme. The progress of key milestones and activities at our businesses is detailed on pages 138-157.

Our strategic themes are:

Spent Fuels	Integrated Waste Management	Nuclear Materials	Site Decommissioning and Remediation	Critical Enablers
to ensure safe, secure and cost-effective lifecycle management of spent fuels.	to ensure that wastes are managed in a manner that protects people and the environment, now and in the future, and in ways that comply with government policies and provides value for money.	to ensure safe, secure and cost effective lifecycle management of our nuclear materials.	to decommission and remediate our sites and release them for other uses.	to provide the stable and effective implementation framework that enables the delivery of our mission.

Status description

ACHIEVED	The key milestone or activity has been achieved during the financial year 2018/19 or satisfactory progress is being made towards achievement of longer term milestone.
MISSED	The key milestone or activity was due for completion before 31 March 2019 and as at that date there had been a delay against the planned schedule and the target has been missed.
DEFERRED	Activity deferred due to re-prioritisation and/or reallocation of funding.

Summary of NDA Corporate Centre performance

from 2018/21 Business Plan

Target	Status	Comments
Nuclear Materials		
Work with government to develop a long-term management solution for separated plutonium in the UK.	ACHIEVED	
Integrated Waste Management		
The NDA will work with group businesses to explore alternative disposal options for Higher Activity Waste.	ACHIEVED	
Critical Enablers		
Launch of the GDF siting process and community engagement.	ACHIEVED	
Undertake health of the supply chain review.	DEFERRED	Decision taken not to conduct review until emerging issues from the One NDA work can be fully understood.
Review of NDA operations and implementation of the recommendations from the Magnox Inquiry, NAO landscape report and Public Accounts Committee.	ACHIEVED	NDA is acting on the recommendations of reports received, noting that the final report from the Magnox Inquiry is yet to be published.
Manage the existing Magnox Limited contract through to termination; and transition to new arrangements.	ACHIEVED	
Development of strategic opportunities that optimise delivery of the mission.	ACHIEVED	
Manage special nuclear materials consolidation in agreed locations.	MISSED	Group Key Target to complete the consolidation of unirradiated exotic materials from Dounreay to Sellafield was declared as unachievable in Q2 due to operational delays being encountered. Completion date moved to 2019/20.
Development and implementation of a group Equality, Diversity and Inclusion (ED&I) Strategy.	ACHIEVED	
Implement government-led reforms of public sector pensions and exit caps across the NDA group.	DEFERRED	All viable 2018/19 activities around public sector pension reforms and exit caps have been carried out, however progress on HMG led pension reform is now delayed pending a parliamentary bill slot. Consultation on Public Sector Exit Caps was launched on 10 April 2019 and has been communicated to all NDA staff.
Provide support to government on nuclear new build decommissioning plans.	ACHIEVED	
Working to embed the capability to proactively protect, detect, respond and recover against current and evolving cyber threats.	ACHIEVED	

Target	Status	Comments
Critical Enablers		
Implementation of our strategic people delivery plan to enable resource planning, skills development and flexibility and mobility across the estate.	ACHIEVED	
Support Small and Medium Enterprise organisations by increasing overall spend with them in line with the government growth agenda.	ACHIEVED	
Performance management of group businesses.	ACHIEVED	
Embed the key tenets of the Industrial Strategy, including facilitation under any Nuclear Sector Deal, throughout the NDA's business.	ACHIEVED	
Support implementation of forthcoming new nuclear emergency preparedness standards across the NDA Group, as part of the UK's implementation of the Basic Safety Standards Directive 2013.	ACHIEVED	
Regulatory Matters		
Continue working with regulators and government to determine institutional controls appropriate to restoration of nuclear sites.	ACHIEVED	

Other key achievements for NDA Corporate Centre for 2018/19

One NDA
2018/19 saw us create One NDA, setting a clear direction for how we will work together with our businesses as one group in the future and maximise the opportunities that come from working together more effectively.

The creation of One NDA has driven significant and meaningful engagement with our businesses and stakeholders, providing us with a stronger platform for working together for the good of our mission and people.

Our vision
To support the One NDA direction of travel, we also developed a unifying vision, reflecting the changes the NDA group is making and the opportunities that One NDA provides.

Public scrutiny
As a public body we must expect and respect the scrutiny placed upon us and last year saw the NDA being the subject of one NAO Report and one Public Accounts Committee. A great deal of effort and resource rightly supported these reviews from across the group, ensuring maximum openness and transparency.

Stakeholder relations
A major success in stakeholder relations was the Stakeholder Summit held over two days in July in the former Berkeley Engineering Labs which have been converted into a Further Education college. The event brought together around 250 delegates from across the UK and Europe to hear from our Chairman and Chief Executive Officer, together with guest speakers including the BEIS Permanent Secretary, Alex Chisholm.

In May we held a very successful event at the Scottish Parliament co-hosted by the MSPs representing our Scottish sites. The Cabinet Secretary for Environment, Roseanna Cunningham attended along with several MSPs, advisors and officials. Also attending were representatives from the site stakeholder groups at Dounreay, Hunterston and Chapelcross together with our supply chain in Scotland.

BREXIT preparations
We have completed the NDA group 'No Deal' actions to ensure that we are prepared for a 'No Deal' scenario. While the future relationship with EU and Euratom remains uncertain, we have provided BEIS with the support it has requested.

Accountability report

Directors' Report

The NDA is an Executive Non-Departmental Public Body (NDPB), established by the Energy Act (2004) to oversee and monitor the decommissioning and clean-up of the UK's civil nuclear legacy. Since then, the NDA's remit has been extended to include the long-term management of all the UK's radioactive waste by finding appropriate storage and disposal solutions.

Accounts direction
These accounts have been prepared in a form directed by the Secretary of State with the approval of HM Treasury and in accordance with section 26 of the Energy Act (2004).

Directors' interests
Directors of the NDA must declare any personal, private or commercial interests. A register of such interests is maintained by the NDA.

Rob Holden declared a commercial interest. He is a Non-Executive Director of NNB Generation Company (SZC) Ltd., Director of Electricity North West Ltd and Director of North West Electricity Networks Ltd. and will therefore, be excluded from any involvement with Moorside deliberations.

All other directors have no personal, private or commercial interests which would conflict with their role as a director of the NDA. A full register of Directors' interests is available at nda.gov.uk.

Directors comprise senior management and Non-Executive Board Members whose details are set out in the Governance Statement on pages 51 to 66.

Auditor of the NDA
The NDA is audited by the Comptroller and Auditor General (C&AG) in accordance with the Energy Act (2004). The services provided by the C&AG relate to statutory audit work for the NDA. No fees were paid to the C&AG for services other than statutory audit work.

Pensions
All NDA employees are eligible to participate in the Civil Service Pension Arrangements. Employees within the Group participate in various defined benefit pension schemes detailed in note 26 to the accounts.

Group employees also participate in various schemes which are accounted for on a defined contribution basis, with details given in note 26 to the accounts.

Better payment practice
The NDA supports the Better Payment Practice Code in its treatment of suppliers with the aim of paying undisputed invoices as soon as possible. The key principles are to settle the terms of payment with suppliers when agreeing the transaction, to settle disputes on invoices without delay and to ensure that suppliers are made aware of the terms of payment and to abide by those terms.

During the year, the NDA group has achieved an average of 20.97% success rate for payment of valid invoices (i.e. one with all details correct and entered on the accounting system) within 5 days and 90.07% within 30 days. The total value of interest incurred in 2018/19 as a result of late payment of invoices is Nil across the group.

Personal data
There were no data breaches or loss of personal data for 2018/19.

Other disclosures
Some disclosures required in the Director's Report have been included elsewhere in the Annual Report. Disclosures on equal opportunities, learning and development and how the NDA engages with all staff are in the Remuneration and People Report on pages 67 to 77. Details of investment in socio-economic developments, research and development and funding, counterparty and foreign exchange risk are all included in the financial statements. The NDA's environmental performance is detailed in the HSSSE report on page 78.

No events affecting these accounts have occurred since the reporting date.
A full explanation of the adoption of a going concern basis appears in note 2.1 of the financial statements.

Statement of Accounting Officer's Responsibilities

Under Section 26 of the Energy Act 2004, the Secretary of State (with the approval of HM Treasury) has directed the NDA to prepare for each financial year a statement of accounts in the form and on the basis set out in the Accounts Direction. The accounts are prepared on an accruals basis and must give a true and fair view of the state of affairs of the NDA and of its income and expenditure, Statement of Financial Position and cash flows for the financial year.

In preparing the accounts, the Accounting Officer is required to comply with the requirements of the Government Financial Reporting Manual and in particular to:

- observe the Accounts Direction issued by the Secretary of State (with the approval of HM Treasury), including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis
- make judgements and estimates on a reasonable basis
- state whether applicable accounting standards as set out in the Government Financial Reporting Manual have been followed, and disclose and explain any material departures in the accounts
- prepare the accounts on a going concern basis
- confirm that the Annual Report and Accounts as a whole is fair, balanced and understandable and take personal responsibility for the Annual Report and Accounts and the judgements required for determining that it is fair, balanced and understandable

The Accounting Officer for the Department for Business, Energy and Industrial Strategy (BEIS) has appointed the Chief Executive Officer as Accounting Officer of the NDA.

The responsibilities of an Accounting Officer, including responsibility for the propriety and regularity of the public finances for which the Accounting Officer is answerable, for keeping proper records and for safeguarding the NDA's assets, are set out in Managing Public Money published by HM Treasury.

As the Accounting Officer, I have taken all the steps that I ought to have taken to make myself aware of any relevant audit information and to establish that NDA's auditors are aware of that information. So far as I am aware, there is no relevant audit information of which the auditors are unaware.

D. Peattie

David Peattie
Accounting Officer and
Chief Executive Officer
18 June 2019

Governance statement

NDA is sponsored by the Department for Business, Energy and Industrial Strategy (BEIS). UK Government Investments (UKGI) provides strategic oversight of NDA's corporate governance and corporate performance, working closely with and reporting directly to BEIS senior officials and providing advice to BEIS Ministers. The formal agreement between NDA and BEIS is set out in a Framework Document, supported by a Memorandum of Understanding between BEIS and UKGI. The Scottish government also has a governance role, working closely with BEIS to ensure its expectations are met.

This governance statement provides a summary of the NDA Board and the Executive structure and the governance over key activities undertaken during 2018/19. It explains the frameworks used to measure the effectiveness of delivery, the findings of audit and assurance reviews and associated improvement actions.

We are governed by the Energy Act (2004), the government's Framework Document and Cabinet Office guidelines for Non-Departmental Public Bodies (NDPBs). Our structure is summarised below and further explained in this statement.

		Meeting	Purpose of meeting	Meeting Chair
Chairman **Accountable for delivering obligations under Energy Act 2004 and providing effective leadership and direction of the Board**	NDA Board and Sub-Committees	NDA Board	To set strategic framework and direction. Ensure corporate governance is observed. Responsible for key decisions. To understand key risks and set risk appetite. Monitor and challenge the Group performance.	Board Chair
		Safety and Security Committee (S&SC)	To support Board on discharging responsibility across the NDA estate relating to Health, Safety, Environment, Nuclear Safeguards and Security matters.	Non-Executive Board Member
		Audit and Risk Assurance Committee (A&RAC)	To advise the Board on risk, control and governance. To oversee audit and financial reporting. Advise and report on the plans, activities and performance of internal and external audit. Assessment of assurance reliability and integrity.	Non-Executive Board Member
		Remuneration Committee (REMCO)	To advise the Board on remuneration, and monitor performance of Executive Directors.	Non-Executive Board Member
		Programmes and Projects Committee (P&PC)	To advise the Board on sanction, performance and assurance of programmes and projects.	Non-Executive Board Member
		Nominations Committee	To consider the composition and skills of the Board, advise on the structure and size of the committees, and assess succession planning and talent management.	Board Chair
Accounting Officer (AO) and CEO **Responsible for leadership and operational management of NDA. Accountable to Parliament for NDA activities, public funds employed and ensuring targets are met.**	Executive Committee and Sub-Committee	Executive Committee	Accountable for implementing strategy and plans approved by the Board. Includes sanction and decision making.	Chief Executive Officer
		Risk and Assurance Committee	To understand Group risk profile. To monitor and manage risk and assurance mechanisms. To ensure effective management of key risks. To monitor findings from audit and assurance reviews. To advise Board Audit and Risk Assurance Committee.	Group Director of Risk and Assurance
		Finance and Performance Committee	To review and approve annual reports and accounts. To review sanction plan and approve sanction requests within delegation and endorse onward submission where required. To review overhead and headcount budget and review group performance in preparation for Quarterly Performance Reviews.	Group Chief Financial Officer
		Sanction Committee	To review and sanction work activities across the NDA estate, including: programmes; projects; procurements; IT expenditure; contracts; asset disposal and investment opportunities. Further approval by the NDA Board and government may also be required.	Chief Executive Officer
		Strategy Committee	To approve business and 'technical' strategies. To review the portfolio of strategic decisions/initiatives under development and endorse for forward submission to the Sanction Committee.	Group Director of Nuclear Strategy and Technology

As at 31 March 2019, we had eight members of the NDA Board - two Executive plus six Non-Executive Board Members (NEDs) including the Non-Executive Chair. Board membership and current terms, committees and attendance for those who have served during 2018/19 are summarised below. A Nominations Committee was set up and held its first meeting in November 2018.

NDA Board - Number of meetings held and attended									
Name	Role		Term of office ends	Board (12)	A&RAC (7)	REMCO (5)	S&SC (5)	P&PC (6)	Nominations Committee (1)
Tom Smith	Chairman	N/A	28 Feb 2020	12/12	1/7	5/5	1/5	6/6	1/1
Janet Ashdown	Senior Non-Executive Board Member	Chair of S&SC	(i)	12/12	7/7	0	5/5	0	1/1
Volker Beckers	Non-Executive Board Member	Chair of A&RAC	(i)	12/12	7/7	2/5(iii)	0	0	1/1
Evelyn Dickey	Non-Executive Board Member	Chair of REMCO	(i)	12/12	0	5/5	5/5	0	1/1
Rob Holden	Non-Executive Board Member	Chair of P&PC	(i)	11/12	0	5/5	0	6/6	1/1
Candida Morley	Non-Executive Board Member	N/A	3 Jun 2019 (vi)	12/12	5/7(ii)	4/5	0	0	1/1
David Peattie	CEO and AO	N/A	N/A	12/12	7/7	5/5	5/5(iv)	6/6(iv)	0
David Batters	Group Chief Financial Officer	N/A	N/A	12/12	7/7	0	4/5	3/6	0
Adrian Simper	Group Director of Nuclear Strategy and Technology	N/A	28 Nov 2018 (v)	9/9	0	0	0	0	0

Member In attendance

Notes

(i) These appointments are made by the Secretary of State. The initial terms of all four were due to end in the course of 2018. Given the uncertainty, around the timing of completion of the Inquiry and publication of the final report, it was decided to extend the terms of all four to be no later than six months after the publication of the final report or six months after the date on which it was clear that the Inquiry would not submit a final report.

(ii) Candida Morley became a member of A&RAC in January 2019 (but attended previously)

(iii) Volker Beckers became a member of REMCO in November 2018

(iv) David Peattie became a member of S&SC and P&PC in September 2018 (but attended previously)

(v) Adrian Simper resigned as an Executive Board member from 28 November 2018

(vi) Candida Morley stepped down as a Non-Executive Board Director on 3 June 2019

(vii) There were also three joint sessions of the S&SC and A&RAC held to cover off specific risks

(viii) David Long joined the NDA Board as a Non-Executive Board Director on 11 June 2019.

Governance Statement (continued)

Current Non-Executive Board Directors (NEDs) including Non-Executive Chair

Tom Smith

Chairman

Tom began his career in the Diplomatic Service, working in London, Hong Kong and Beijing between 1979 and 1990, when he was part of the team that negotiated the 1984 treaty with China on Hong Kong.

In 1990, he joined Trafalgar House plc and held several senior positions before becoming Managing Director of Midland Expressway Ltd (MEL) in 1997, where he led the development and construction of the M6 Toll, the UK's first privately financed toll motorway. He subsequently joined the Go-Ahead Group plc as Managing Director Rail Development and, over 10 years, was instrumental in turning Go-Ahead into one of the country's largest passenger rail operators. He was Chairman of the Association of Train Operating Companies from 2009 to 2013. He was a Non-Executive Board Member of Highways England from 2014 to 2016.

Janet Ashdown

Senior Non-Executive Board Member

Janet worked for BP plc for over 30 years, holding a number of local and global positions in fuel supply, manufacturing, oil trading and retail marketing. She was a senior leader in BP, running BP's UK retail and commercial fuel business in her last role. Janet was, until the end of 2012, Chief Executive Officer of Harvest Energy Ltd.

Volker Beckers

Non-Executive Board Member

Volker was Group Chief Executive Officer of RWE Npower plc. He has worked in a variety of trade and industry bodies, including the CBI President's Committee, on the Board of the German-British Chamber of Industry and Commerce. He was also member of the Executive Committee of UKBCSE (now Energy UK).

He also chairs the UK PWC Advisory Council and is a Board Member and Vice Chairman of Danske Commoditities A/S.

He is a member of King's College Advisory Board and Honorary VP and member of the Energy and Utility Forum.

He holds Non-Executive Director and Chairman roles on various Boards.

A register of interests for the Non-Executive Board Members is maintained and is available for the public to view at www.gov.uk/government/publications/nda-register-of-directors-interests.

Governance Statement (continued)

Current Non-Executive Board Directors (NEDs) including Non-Executive Chair

Evelyn Dickey

Non-Executive Board Member

Evelyn has extensive human resources experience, leading design and delivery of major change programmes, business restructuring, employee relations, resourcing, executive remuneration, organisational capability and performance management initiatives.

Evelyn has worked in HR consultancy and as HR Director (HR Operations) for Boots the Chemist, before joining Severn Trent's HR function in November 2006, retiring as Director of HR in 2017.

Rob Holden CBE

Non-Executive Board Member

Rob led the London and Continental Railways (LCR) team in a series of transactions that secured the future of the Channel Tunnel Rail Link (later renamed High Speed 1). In 2009 he was awarded a CBE for services to the rail industry.

Rob is a Chartered Accountant with a career background of managing long-term projects including the Trafalgar and Vanguard classes of nuclear powered submarines and Crossrail. He now combines his non-executive with advisory assignments on transport and defence projects both in the UK and overseas.

Candida Morley

Non-Executive Board Member (until 3 June 2019)

Candida joined UKGI as a Director in September 2017 from HgCapital where she was an Operating Partner. Between 2001 and 2015 she worked at private equity fund LDC where her roles included Chief Portfolio Officer and Chief Operating Officer, prior to which she worked at Elementis plc, 3i plc and as Director of Development at the Victoria and Albert Museum.

Candida stepped down as a Non-Executive Board Director on 3 June 2019.

Board performance

Corporate governance

Compliance

The NDA supports high standards of governance and, where appropriate, given the size, status and complexity of the organisation, has continued to develop our governance taking account of the principles set out in the Government Code of Corporate Governance, government guidance for an arm's length body and the Financial Reporting Council's 2018 UK Corporate Governance Code:

- the Board monitors the NDA's performance and directs its business effectively, including taking an active role in stakeholder relations
- the Chair is responsible for leading the Board and Non-Executive Board Members to challenge and help develop strategy
- the Board receives frequent updates on NDA's financial position, forecasts and sensitivities
- the Board has an appropriate balance of skills and experience to discharge its responsibilities
- the Board ensures that a balanced assessment of performance is reported to BEIS and regularly debates the main (corporate strategic) risks facing NDA
- the Audit and Risk Assurance committee has oversight of, and provides challenge to, the management and internal control systems
- the Board places particular emphasis on the quality and integrity of the data submitted for its use. Critical processes and outputs fall within the control of the NDA Assurance Framework and are subject to peer review and/or independent review by Internal Audit
- the Board reviews the terms of reference for its sub-committees annually
- the Board has set up a Nominations Committee
- the Board is seeking greater engagement with the workforce
- the Board's Remuneration committee determines executive director remuneration and contractual arrangements, having regard to the need for defensibility in public sector pay under advice and guidance from HM Treasury and BEIS. Non-Executive remuneration is set by BEIS and reviewed regularly.

We also use the Financial Reporting Council's 2018 UK Corporate Governance Code, for Listed Companies, as a reference point, and aim to follow that Code's provisions where they are relevant to us. One of the key focus areas has been to seek greater Board engagement with the workforce and this will be further developed in 2019/20.

Board performance and effectiveness review

The Board undertakes an annual evaluation of its effectiveness, led by the senior Non-Executive Board Member. During the 2018 review, the Board was also supported by an external facilitator who has experience in reviewing a wide range of company boards.

Throughout 2018/19, progress was maintained on the findings from the 2018 review including actions to address:

- Board agenda, papers, discussions and operating rhythm
- Board size, composition, succession planning and Committee structure
- Board role, expectations and relationship with government

A collective assessment by the Board in April 2019 agreed the 2018/19 findings have been acted upon and good progress made in all key areas. Particular improvements were noted in the control of meeting papers, including the new key holder and enhanced assurance processes, the introduction of a Nominations Committee and an additional focus on strategic topics.

In March 2019, the Board undertook its annual effectiveness review. Progress of individual actions will be reviewed at Board meetings over the course of the current year and will be reported on next year. An action plan has been drafted and key areas for attention include the post-evaluation reviews of programmes and projects, clarity of risk appetite and improvements in Board induction and development. It was agreed to apply the Board effectiveness methodology to the Committees of the Board starting in the period 2018/19.

Board performance

The NDA Board is supported by its committees as outlined below

Audit and Risk Assurance Committee (A&RAC)

The Audit and Risk Assurance Committee consists of 3 full members:
- Volker Beckers (Chair)
- Janet Ashdown
- Candida Morley

The following persons may also attend the committee meetings:
- Julian Kelly – Standing Advisor (from Mar 2018)
- Chief Executive / Accounting Officer
- Group Chief Financial Officer
- Group Director of Risk and Assurance
- Group Security and Corporate Services Director
- Head of Group Internal Audit
- Chief Compliance Officer
- Head of Financial Operations (from Jan 2019)
- External Audit Representation (NAO)
- Representative from Government Internal Audit Agency (GIAA)
- Chair of BEIS A&RAC
- NDA Chairman

Number of meetings in the year: 7

The Audit and Risk Assurance Committee ensures continuous monitoring of the effectiveness of the financial and risk assurance control frameworks established by the NDA Executives.

The Audit and Risk Assurance Committee advises the NDA Board on:
- the strategic processes for risk management, information risk management, control and governance within the core NDA, and across the wider NDA group
- assurances relating to the management of risk and corporate governance requirements for the NDA as an organisation
- anti-fraud policies, whistle-blowing processes, and arrangements for special investigations
- proposals for tendering for either Internal or external audit services or for purchase of non-audit services from contractors who provide audit services
- the accounting policies, the Annual Report and Accounts, matters arising from the external audit, and management's Letter of Representation to the external auditors
- the plans, activities and performance of internal and external audit
- the adequacy of management response to issues identified by audit activity, including the external auditor's Management Letter

During the year, the Audit and Risk Assurance Committee has:
- focused on cyber security, the impact of Brexit and the new approach to risk management following the external review of the NDA's Risk Management Framework
- supported preparations for the upcoming spending review and changes to the Corporate Centre in respect of various functions, including alignment of the Group Internal Audit functions
- ensured the NDA met all financial reporting obligations
- ensured that NDA accounting practices are in line with BEIS and HM Treasury guidance
- provided oversight of the control framework for information risk management and associated improvement plans
- provided oversight on the further development of the NDA's Risk and Assurance Framework
- supported the development of a new Target Operating Model for Internal Audit

Remuneration Committee (REMCO)

The Remuneration Committee consists of 3 full members:
- Evelyn Dickey (Chair)
- Rob Holden
- Volker Beckers (from Nov 2018)

Number of meetings in the year: 5

The following persons may also attend the committee meetings:
- Chief Executive / Accounting Officer except for discussion in relation to their own remuneration.
- Group Human Resources Director except for discussion in relation to their own remuneration.
- NDA Chairman
- NDA Non-Executive Board Members

More details on the activities of the Remuneration Committee can be found in the Remuneration and people report on page 67

Safety and Security Committee (S&SC)

The Safety and Security Committee consists of 4 full members:
- Janet Ashdown (Chair)
- Evelyn Dickey
- David Peattie (Sep 2018)
- Alan Cumming (Sep 2018)

The following persons may also attend the committee meetings:
- Per Lindell – Standing Advisor (from Mar 2018)
- NDA Chairman
- Group Director of Risk and Assurance
- Head of Health, Safety and Environment
- Group Security and Corporate Services Director
- Regulators (attend once per year)
- Group Chief Financial Officer
- Site Licence Company representative (specific items)
- Chairs of the SLC S&SCs

Number of meetings in the year: 5

The Safety and Security Committee supports the NDA Board in discharging its responsibilities in respect of issues of Health, Safety (including both nuclear and occupational safety), Environment, Nuclear Safeguards and Security in the NDA Group.

The primary responsibility for the majority of these issues within the NDA group lies with the businesses and duty-holders. In particular the site licence companies have unambiguous responsibility for safety on their sites. However, the NDA has a duty of care over the operation of its whole group and in particular must ensure that the businesses discharge their responsibilities properly.

The Safety and Security Committee advises the NDA Board on:
- general issues of Health, Safety, Environment, Nuclear Safeguards and Security in the NDA Group (current and projected)
- Specific matters of interest or concern, including the scrutiny of summary information supplied to the NDA Board
- the appropriate Board response to specific Health, Safety, Environment, Nuclear Safeguards and Security risks and issues
- An external perspective on relevant good practices and industry trends, including recommendations as to when and where the Board should seek advice

During the year the Safety and Security Committee has:
- visited the NDA site at Dounreay to review performance and discuss safety with site staff
- engaged with our environmental regulators, SEPA and EA, by inviting senior regulators into committee to discuss current issues, and benchmark the NDA performance against the nuclear sector
- encouraged the NDA's development of environmental performance indicators, and sustainability policy
- received and advised on the results of the HSL Safety Climate Survey The survey reported at the start of 2018, and formed the basis of our highly successful NDA Health and Safety Day, in October 2018

The committee's routine business this year has been to scrutinise the management of HSSSE risks and performance across the NDA group. Performance is benchmarked against relevant industry sectors, including high hazard, manufacturing, and energy, oil and gas.

From time to time, and as considered necessary, the committee will receive reports from group businesses on events and accidents. This year, the committee received detailed reports from Sellafield Ltd, Dounreay Site Restoration Ltd, and LLWR Ltd on their improvement programmes.

The committee also receives and commissions independent reports from the NDA's in-house HSE and Security and Resilience teams, including trend analysis and reports of work undertaken by the NDA to promote high standards and encourage collaboration.

Programmes and Projects Committee (P&PC)

The Programmes and Projects Committee consists of 4 full members:

- Rob Holden (Chair)
- Tom Smith
- David Peattie (Sep 2018)
- Alan Cumming (Sep 2018)

The following persons may also attend committee meetings:

- Group Chief Financial Officer
- Group Director of Risk and Assurance
- Head of Sanction

Number of meetings in the year: 6

The Programmes and Projects Committee provides additional oversight and scrutiny of Major Programmes and Projects within the NDA Group. This includes, but is not limited to, programmes and projects relating to engineering, procurement and construction, information, technology, telecommunications, security and real estate development.

The Committee supplements Board oversight; it is not intended to supplant it.

The Programmes and Projects Committee advises the NDA Board on:

- progress of Major Programme and Projects against approved business cases and funding
- assurance that emerging issues concerning Major Programmes and Projects are understood and that mitigations are being appropriately pursued
- outcomes of assurance reviews (internal or external) and progress against action plans to address any issues raised in these reviews
- the forward plan of programmes and projects/business cases coming to the Board for approval

During the year, the Programmes and Projects Committee has:

- provided oversight to and advised the Board on a number of major Programme and Projects business cases including Programme and Project Partner procurement, Sellafield Model Change Programme, First Generation Magnox Storage Pond (FGMSP) Sludge Handling and Export Plan, Box Encapsulation Plant Product Store Direct Import Facility (BEPPS DIF) and Magnox Operating Model
- provided oversight of the enhanced assurance arrangements
- provided oversight of completed assurance in support of impending board decisions and forward assurance in support of later board decisions

Nominations Committee

The Nominations Committee consists of 6 full members:

- Tom Smith (Chair)
- Non-Executive Board Members

The following persons may also attend committee meetings:

- Chief Executive/Accounting Officer
- Group Human Resources Director

Number of meetings in the year: 1

The Nominations Committee advises the NDA Board on the composition and skills of the Board.

During the year, the Nominations Committee has:

- reviewed the skills matrix of the Board
- looked at the timings of Non-Executive Board Member terms of office and the appointment of a further NED.
- reviewed succession plans in the Corporate Centre and Group
- reflected on the diversity of the Board and the Corporate Centre.

Executive leadership team

David Peattie

Chief Executive Officer

Executive Board Director

David began his career at BP in 1979 as a petroleum engineer and, during 33 years at the company, held a number of technical, commercial and senior management positions.

His roles included Head of BP Group Investor Relations, Commercial Director of BP Chemicals, Deputy Head of Global Exploration and Production, Head of BP Group Planning, and finally as Head of BP Russia where he was responsible for BP's interests in the TNK-BP joint venture as well as its businesses in the Russian Arctic and Sakhalin. In addition, he was BP's lead Director on the board of TNK-BP and Chairman of its Health, Safety and Environment Committee

David Batters

Group Chief Financial Officer

Executive Board Director

Prior to joining the NDA, David spent more than 20 years with BAE Systems and predecessor companies in which he held a variety of roles, primarily in finance including mergers and acquisitions, planning and analysis, reporting, project accounting and as Finance Director of a number of businesses.

As CFO, David is responsible for the NDA's finance function (Finance, modelling and analysis, insurance, pensions, business planning, property and internal compliance and audit).

Dr Adrian Simper OBE

Group Director of Nuclear Strategy and Technology

Non-Board Director
(Executive Board Director until November 2018)

Adrian joined the nuclear industry in R&D at Sellafield. His subsequent career has included strategic roles in R&D and technology, project delivery, commercial and finance both in the UK and the US.

Adrian is the NDA group mental health champion.

He was appointed to the Order of the British Empire (OBE) in the 2017 New Year Honours' list, recognising his services to the UK nuclear industry in Japan.

A register of interests for the Executive Leadership team is maintained and is available for the public to view at www.gov.uk/government/publications/nda-register-of-directors-interests

Executive leadership team

Alan Cumming

Group Director of Nuclear Operations

Non-Board Director

Alan joined the NDA as Group Director of Nuclear Operations in April 2018. He has responsibility for all operations, including health and safety.

A Chartered Civil Engineer and a Chartered Structural Engineer, Alan completed his nuclear training at Massachusetts Institute of Technology in Boston and has an MBA from Strathclyde Business School in Glasgow.

Before joining the NDA, Alan was Capital Projects and Engineering Director for Viridor, part of Pennon, Deputy Project Director for EDF Energy's New Build Nuclear Programme and Director of Projects for British Energy.

David Vineall

Group Human Resources Director

Non-Board Director

David has a wealth of experience within the industrial sector having held a series of senior HR leadership roles in TATA Steel in Europe, BAE Systems and GEC Alsthom. Roles have included HR Director for the TATA Steelmaking operations in South Wales and HR Director for shipbuilding and support business across Glasgow and Portsmouth within BAE systems.

David plays a leading role in skills as a board member for the ECITB (Engineering Construction Industry Training Board), deputy chair for the Nuclear National Skills Strategy Group and Vice Chair for the National College for Nuclear.

Duncan Thompson

Director of Group Development

Non-Board Director

Duncan has a mechanical and environmental engineering background, with management experience gained over 27 years in the UK and overseas. He has worked for The London Stock Exchange, Ford, British Overseas Aid and Unicef and, as a management consultant, he worked with companies including National Grid Transco, Railtrack, NDA and BP.

From 2014 he led the work to bring Sellafield in as a subsidiary of the NDA and then, as Sellafield Programme Director, embedded and ran those subsidiary arrangements. In April 2019 Duncan took on the new role of NDA Group Development Director, responsible for development and implementation of a group structure that best delivers our mission.

Executive leadership team

Jeremy Harrison

Group Director of Risk and Assurance

Non-Board Director

Jeremy joined the NDA in October 2018, following four years at HS2 Ltd. Jeremy worked in the rail industry for 22 years. He pioneered early thinking on safety risk and then went on to lead on project and corporate risk. This included setting the standards and policies for risk management and value management, across the infrastructure projects on the national rail network.

Jeremy chaired the UK Risk Management committee for BSI and supported government initiatives to improve risk management across major projects.

Kate Ellis

Group Commercial Director

Non-Board Director

Kate brings a wealth of valuable commercial knowledge and experience to the NDA. Kate joined the NDA in November 2017 from the Ministry of Justice, where she was Commercial Director for Her Majesty's Prison and Probation Service.

Previously, Kate was with BP for 22 years. She held several senior roles with the organisation, including Commercial Director of BP Shipping.

Paul Vallance

Group Communications and Stakeholder Relations Director

Non-Board Director

Paul began his career at BNFL, becoming Group Communications Director. He joined NDA from Rolls-Royce, where he held a number of senior positions. Paul was part of the executive team that established Rolls-Royce's nuclear sector, which included both the civil nuclear and submarines businesses. Paul was also the customer lead for a number of Rolls-Royce's key commercial relationships.

Executive leadership team

Frank Rainford

Group Security and Corporate Services Director

Non-Board Director

Frank joined the NDA in February 2017 and is currently responsible for security, cyber, information governance, ICT, CEO Office, the Project Management office and the provision of other Corporate Centre services.

Prior to joining the NDA, Frank spent three years as the Executive responsible for the GE Aviation Aerostructures business in the UK and previously spent 21 years with BAE Systems and predecessor companies in the UK and Saudi Arabia, holding several senior roles including Transformation and Project Management Director. Frank studied at Lancaster University gaining an MBA and MSc in Project Management.

Neil Hewlett

General Counsel and Company Secretary

Non-Board Director

Neil joined the NDA in September 2017. He is a qualified solicitor and experienced corporate and commercial in-house lawyer having worked in either global or pan-European legal roles for a number of multi-nationals based in the UK, the Netherlands and Belgium in the diversified industrial, logistics and chemical sectors.

Governance statement (continued)

Executive Committee (ExCo)
The membership of the ExCo is shown on pages 59 to 62.

The committee is accountable for implementing strategy and plans approved by the Board. The ExCo meeting agenda has been aligned to match the committees of the Board. Each month, the ExCo meets and over a two-day period, covers the agenda as follows: Risk and Assurance Committee, Finance and Performance Committee and Sanction Committee. Other areas covered by the ExCo include health, safety and environment, planning, contracting, people management and recruitment and internal and external communications.

Financial control
NDA has strong financial controls to ensure it remained within its budgetary spend for 2018/19 of £3.3 billion. It has well-defined delegated authority and a clear budgetary framework. The system remains effective with no significant issues identified by internal or external audit during the year.

Control of programmes and projects across the group is exercised by the executive through the ExCo Sanctions and Programmes and Projects Committee.

Risk management
Managing risk is a fundamental NDA responsibility. By following international good practice in risk management, the NDA aims to:

- improve business performance and efficiency
- safeguard the NDA's staff, contractors, assets, environment and reputation
- promote good governance by integrating risk management, internal control and assurance
- foster a risk-aware culture that ensures decision-making reflects NDA's appetite for risk
- provide assurance to stakeholders that risks are being actively managed. While the Board is ultimately accountable for NDA risks, all staff have a duty to identify, manage and report risks in their areas of responsibility.

A large number of our risks are owned and managed by our businesses. At a Group level, we recognise accountability for oversight of management of key risks, and the potential for risks to have knock-on consequences across the Group.

A review of the risk management framework carried out by a secondee from the British Business Bank highlighted areas of weakness. These findings, combined with the experience of the incoming Group Director of Risk and Assurance, have led to the development of a significant risk management improvement plan. The plan includes development of a structured and integrated risk appetite approach, collaborative work to develop a common risk management framework across the NDA group, improvements to forecasting and contingency management and a systemic and holistic consideration of risk.

Risk Hierarchy
The principal risks at a group level are currently known as corporate strategic risks (CSRs). Each of these is supported by a fully documented risk assessment and has an executive-level sponsor. Reviews of these during the year have been informed by analysis of the interactions between the risks and mapping of risks from the group businesses. At the end of 2017/18 there were 17 active CSRs. During 2018/19 one CSR was closed (Sellafield benefits) and two downgraded (Bribery and Corruption and Lifecycle Governance). At the end of 2018/19 there are 14 CSRs.

Following the successful completion of the Sellafield Model Change Programme, acknowledged by the Major Projects Governance Group in October, the specific risk "failure to deliver the benefits of the Sellafield subsidiary" has been closed. There will be ongoing focus on the maintenance of an effective delivery environment across the group.

Due to increased confidence in the control environment, two further risks will continue to be monitored and managed at the functional level only:

- failure of control environment leads to fraud, bribery and corruption
- good in-year progress in aligning the requirements of our fraud focus group with Cabinet Office GovS 013: Counter Fraud guidance.
- ineffective NDA lifecycle governance of subsidiaries and affiliates (excluding Sellafield
- increased clarity of how to effectively implement and use subsidiary model. Related internal audit actions completed and learning from Sellafield Model Change Programme.

Workshops with the Executive and the Board were used to review all risks, with eight of these (highlighted on the next page) subject to deep dive reviews by the Board committees during 2018/19.

Significant oversight of key controls across the group has focused on cyber security and information governance, Brexit preparedness and business continuity.

NDA businesses present their top risks and explain their management of them through the Quarterly Performance Review (QPR) process. In addition, NDA Corporate Centre risk team is engaging in additional challenge and assurance in relation to risks across the businesses. These may be subject to Board committee deep dive, an example being a particular safety risk from our Sellafield business.

Horizon scanning and emerging risk
Our overarching risk management framework provides for the recognition and escalation of emerging risks. Our collaborative work across the NDA's group businesses, with the Heads of Risk, has developed significantly this year. This has included collective identification of joint risks and sharing on emerging / evolving risks. This will continue as the group-wide risk management framework matures.

Corporate strategic risks

Risk	Key NDA Risk Controls	Risk Owner Function
Significant scope change	• critical stakeholder engagement framework • input to Spending Review and commercial processes	STRATEGY AND TECHNOLOGY
Technical solutions fail to achieve desired outcomes	• research and development strategy • technical Baseline and underpinning research and development process • NDA requirements defined within client specifications	STRATEGY AND TECHNOLOGY
NDA has insufficient funding to fulfil its mission for the next 5 years	• NDA contract model including Lifetime Plans and Annual Site Funding Limit • business planning process and portfolio management	FINANCE
NDA assets do not perform as required adversely impacting on NDA mission	• NDA requirements defined within client specifications • NDA Asset Management Assurance Plan • asset management incentivisation • business continuity capability	NUCLEAR OPERATIONS
Poor management of the supply chain results in inadequate performance and reduced value for money	• supply chain and procurement strategy • supply chain monitoring	COMMERCIAL
Insufficient capability and capacity to deliver the NDA mission	• HR Management Information • resource Planning	HUMAN RESOURCES
Failure of site licence company-related contracts, programmes and projects to deliver strategic outcomes	• benefit realisation plans • NDA contract mechanisms	NUCLEAR OPERATIONS
Major safety or security incident disrupting the NDA's mission	• executive and board-level leadership • resilience programme – emergency plans, business continuity capability	NUCLEAR OPERATIONS/ SECURITY AND CORPORATE SERVICES
Failure to deliver the benefits of the Sellafield subsidiary	This specific risk is to be closed as it was focused on the Sellafield Model Change which has been implemented. Future Executive focus will be on successful alignment of the operating model and behaviours.	NUCLEAR OPERATIONS
Failure of control environment leads to fraud, bribery and corruption	Sufficient confidence in the control environment and reduction of exposure so as to warrant functional level management and oversight only.	FINANCE
Ineffective NDA lifecycle governance of subsidiaries and affiliates (excluding Sellafield)	Sufficient confidence in the control environment and reduction of exposure so as to warrant functional level management and oversight only.	FINANCE
The NDA group is unable to deal with the effect of a cyber attack	• cyber, security and resilience programme	SECURITY AND CORPORATE SERVICES
Loss of stakeholder confidence in the NDA's ability to safely lead the mission and demonstrate value for money	• stakeholder engagement framework	COMMUNICATIONS
Threats to the GDF lead to increased cost and risk to the NDA mission	• GDF siting process • RWM transformation plan	NUCLEAR OPERATIONS
Unsuccessful transition of the Magnox site licence company from a PBO to a new ownership model	• NDA Magnox Transition team and project • Transition Governance	NUCLEAR OPERATIONS
Failure to deliver and or sustain organisational improvements to the NDA undermining our ability to demonstrate value for money	• business improvement activities • One NDA	CEO
Brexit related policy changes and disruption to business operations threaten the NDA mission	• engaging in EURATOM exit policy response • Brexit business impact assessments • dual-use procurement planning • No Deal preparedness	STRATEGY AND TECHNOLOGY

Governance statement (continued)

Information governance
The NDA Group Security and Corporate Services (S&CS) Director has responsibility for the Information Governance, Information and Communications Technology and Cyber Strategies across the NDA Group. This covers all aspects of:

- cyber security
- physical security and resilience planning
- knowledge and information management
- digital and data management
- information security and assurance
- information and communications technology
- management of intellectual property
- information risk management

The NDA Senior Information Risk Owner (SIRO) and the S&CS Lead Team have continued to provide effective management of information risks and issues arising across the nuclear estate. This includes leadership and governance of the Cyber Security and Resilience Programme and the Information Governance Programme, both of which have delivered key milestones throughout the year.

During the last year, we have reduced risk across the group by:

- establishing a standardised cyber security operating model based on best practice of the National Institute of Science and Technology
- developing the first-ever comprehensive information systems asset database for the NDA group - a key first step to being able to effectively understand and manage 'operational cyber risk'
- relocating the NDA-owned secret and top secret archive collections to Nucleus, (the Nuclear and Caithness Archives) without incident.
- completing a programme of certified training of key Information risk management professionals (SIROs, Chief Information Security Officers & Information Asset Owners) to a nationally recognised standard (GCHQ)
- delivering a secure collaboration platform (The Hub) enabling the sharing of knowledge and know-how for all parts of the NDA estate including suppliers and general public (circa 25,000 potential users)
- delivering an NDA private cloud (Ecosystem) for information up to Official Sensitive (Sensitive Nuclear Information) for the Hub but capable of simple modular expansion to cover all NDA cloud requirements
- Wide Area Network (WAN) separation; the separation of legacy networks, in order to reduce the cyber risk
- installing protective monitoring on all of the NDA group networks

The NDA Corporate Centre has put in place measures and plans to respond to the impact of the General Data Protection Regulations which came into force in May 2018. The SIRO's assessment is that the NDA continues to make good progress with a mature plan in place in order to ensure full compliance with the new legislation.

The cross-Group SIRO forum, comprising senior NDA staff and Directors from our businesses are responsible for Information Risk, to meet regularly to provide governance over the group assurance programme and audit performance reviews in these areas.

Modern Slavery Act 2015
The Modern Slavery Act 2015 requires organisations with a global turnover above £36 million to publish an annual slavery and human trafficking statement disclosing what steps are being taken to ensure modern slavery is not taking place in any of their business or supply chains.

Our activities to combat slavery and trafficking are risk based and correspond to the level of risk identified. We know our biggest risk is within our indirect, group-wide supply chain. We expect suppliers to adhere to the same high standards as the NDA.

We have benchmarked our processes against best practice elsewhere. Clauses have been inserted into the NDA standard terms and conditions requiring suppliers to comply with the anti-slavery legislation and we expect our businesses and supply chain to do the same and have added wording to NDA tender documents to draw attention to our zero tolerance stance on slavery issues. Existing tender documentation includes the mandatory exclusion of any bidder who convicted of an offence under the Modern Slavery Act 2015.

Around 700 organisations are signed up to our Supply Chain Charter and the revisions regarding compliance with the Modern Slavery Act 2015 are being highlighted to each supplier.

In compliance with the legislation, the NDA produces and publishes an annual statement, approved by the Board, which sets out our position on modern slavery, our understanding of the risks and implications, and the steps that we are taking to mitigate the risks and ensure that slavery and human trafficking do not exist within the NDA or within our supply chain.

As of March 2019, no instance of slavery or human trafficking has been identified.

Governance statement (continued)

Effectiveness of the control environment

As Accounting Officer, I have responsibility for ensuring the system of internal control and its effectiveness are both sound. I am also personally accountable for safeguarding the public funds allocated to the NDA, as well as departmental assets, in line with the HM Treasury publication 'Managing Public Money'. Support for these activities is provided by the NDA internal audit function, the external auditors (the National Audit Office) and other assurance functions, both within the NDA and across the group. I reported last year that I had also appointed a Chief Compliance Officer to further enhance the internal control environment.

In accordance with Treasury guidance, the NDA system of internal control has been in place for the period commencing 1 April 2018 up to the approval date for the Annual Report and Accounts. The system is designed to manage risk to a reasonable level while complying with relevant rules and regulations.

It is impossible to eliminate all risk of failure in implementing policies, aims and objectives; therefore the system provides assurance of effectiveness to a level that is reasonable rather than absolute. My executive team members are responsible for developing and maintaining the internal control framework in their own functional areas. Oversight and challenge to the system is provided by the Board and also by the Audit and Risk Assurance Committee, who ensure plans are in place to address any weaknesses.

Significant reliance is placed on those controls operated by businesses across the group. In line with government requirements, the NDA Modelling and Analysis Team tests the robustness of the end-to-end process used in developing all the group's business-critical models and spreadsheets that influence the NDA's key business decisions. The NDA is compliant with the implementation of the MacPherson Review of Quality Assurance (QA) of Government Analytical Models and has AQuA Book compliant processes in place.

During the year, I have appointed a new Group Head of Internal Audit, with a particular focus on aligning and improving audit and advisory services across the group. This should improve the quality and consistency of group-wide arrangements and also further support our overall visibility, understanding and ongoing improvement in matters of corporate governance, risk management and internal control. The development of the Compliance function is progressing well. Particular focus has been given to the roll-out and embedding of our code of conduct and review and update of our delegated authorities during the year. Alongside these developments, our Audit and Risk Assurance Committee is strengthening relationships and arrangements with the group's supporting Audit and Oversight Committees at the subsidiaries and site licence companies.

In line with the standard ratings of the Government Internal Audit Agency, NDA's Group Head of Internal Audit has provided a rating of 'moderate' to the level of assurance that there is generally a sound framework of governance, risk management and control, both within the NDA and the wider group. This view is based on the work of internal audit, including oversight of the various assurance activities undertaken by the NDA, its subsidiaries and through engagement with the internal audit functions of the businesses.

The NDA internal audit work for 2018/19 was designed to provide assurance against key business processes, along with specific corporate risks. The audit plan covers both the NDA and its subsidiary businesses with the exception of Sellafield, which operates its own stand-alone internal audit function. The findings from the Internal Audit reports across the group receive close attention from both the Executive team and the board via the Audit and Risk Assurance Committee. As we transition to an aligned group internal audit approach, we will introduce group audit themes, enabling a more holistic view of risk and control, emerging issues and trends.

2018/19 NDA-led Internal Audit reviews completed by the year end were assigned ratings as follows: 'no assurance' 0%, limited assurance 15%, moderate assurance 27%, high level of assurance 27% and substantial assurance 31%. This represents an overall consistent level of assurance with the previous year, but with an improving trend in individual ratings and findings. Across the group, there has also been an overall improving trend in audit ratings this year.

Areas identified by these internal audit reviews as requiring further strengthening included our response to evolving risks around Information governance, particularly cyber Security and resilience and the General Data Protection Regulation (GDPR). Internal audit reviews also highlighted the need for further improvement in our risk management and sanctioning processes. Business operating processes, including financial, internal procurement and HR controls were generally found to be robust.

On balance, as Accounting Officer, I am therefore confident that the system of internal control operating throughout the past year is effective, and appropriate to meet the NDA's objectives. In reaching this conclusion, I have taken advice from the Group Head of Internal Audit and the Chief Compliance Officer. I have also been mindful of the outcome of work by several important bodies examining the Magnox procurement; namely the NAO, the Parliamentary Public Accounts Committee and the Magnox Inquiry, and our response to their findings.

D. Peattie

David Peattie
Accounting Officer and Chief Executive
18 June 2019

Remuneration and people report

The primary role of the Remuneration Committee is to ensure that an effective remuneration policy is in place to enable the NDA to attract, reward and incentivise executives with the right skills and expertise to successfully deliver the organisation's goals.

Remuneration Committee (REMCO)

The Remuneration Committee consists of 3 full members:

- Evelyn Dickey (Chair)
- Rob Holden
- Volker Beckers (from Nov 2018)

The following persons may also attend the committee meetings:

- Chief Executive / Accounting Officer except for discussion in relation to their own remuneration
- Group Human Resources Director except for discussion in relation to their own remuneration
- NDA Chairman
- NDA Non-Executive Board Directors

Remuneration Committee

The Remuneration Committee determines the remuneration and terms of service of the Chief Executive and Executive Directors including individual salaries, setting and assessing performance targets, the outturn of performance related pay and arrangements for joiners and leavers.

During the year, the Remuneration Committee has:

- reviewed performance at NDA level and individual executive level to determine the annual bonus awards for the year 2017/18 which were paid in July 2018.
- agreed to put on hold the vesting of the Long-Term Incentive Plan (LTIP) awards granted in 2015 until the outcome of the Magnox Inquiry
- agreement of the awards for the LTIP plan to vest in 2021
- reviewed executive remuneration, benchmarking and the future methodology of incentive schemes in line with external developments on corporate governance

Remuneration Policy

The attraction and retention of high-calibre executives is critical in delivering NDA's mission and ensuring true value for money.

Attracting and retaining leaders of the necessary calibre requires remuneration arrangements that are reasonable in the markets in which we compete for talent, and which fairly reflect the appropriate market rates for the skills and experience of the relevant individual.

Executive rewards should rightly acknowledge the professional expertise required to address the challenge of UK nuclear decommissioning, whilst also providing value for taxpayers in a constrained economic climate.

The challenges for NDA leadership range from setting future strategy to optimising delivery of decommissioning plans across the NDA portfolio and seeking innovative ways to maintain around £1 billion per annum of commercial income.

These challenges require business and specialised technical expertise. Such skills inevitably command a premium and this competitive market is intensified by increasing demands from the international nuclear sector, as well as from major infrastructure projects in the UK and overseas.

The committee routinely seeks independent advice on remuneration using specialist advice from Korn Ferry and, in reaching its conclusions, assesses both public and private sector data to set a level of reward that ensures we can confidently drive forward the improved performance needed across our group.

The remuneration policy has been applied throughout the year and will continue going forward, supporting our ability to attract, retain and motivate the people needed to deliver the mission.

Directors' contracts

Non-Executive Board Directors
Non-Executive Board Directors are appointed by the Secretary of State for BEIS in conjunction with Scottish Ministers following consultation with the NDA Chairman and in line with codes of practice issued by the Commission of Public Appointments.

Directors' remuneration
The remuneration of the Chief Executive and Executive Directors comprises base pay, car allowance, an annual performance-related payment, a Long-Term Incentive Plan (LTIP) and pension entitlements.

Salaries
In setting salaries this year, the Committee again noted pay increases across the private sector and the demands on public spend. The pay increase for 2018/19 was set at 1.5% which took into consideration that pay increases across the NDA and the wider public sector had been set at 1% for the previous six years.

Performance-related pay
Executive awards are linked to the achievement of personal and corporate objectives, both aligned to our Corporate Plan. Objectives are approved at the beginning of the financial year by the Board.

In June 2019, a report on achievement of the NDA group key targets for 2018/19 was prepared by BEIS Internal Audit and reviewed by the Audit and Risk Assurance Committee. After considering this report, the Remuneration Committee made a recommendation to award an overall 73% achievement of the corporate element of bonus award, and this was subsequently endorsed by the board.

The individual performance and contribution of each executive was also reviewed and percentage achievement figures confirmed.

Long-term Incentive Plan (LTIP)
The aim is to motivate executives to improve performance and increase engagement in activities to deliver on longer-term outcomes. The NDA's LTIP scheme is subject to the achievement of objectives which are long-term, strategically important, quantifiable and subject to the leadership of the NDA.

An LTIP award is made at the start of each three-year LTIP period and is subject to a multiplier which can either increase or decrease depending on performance against targets and improvements to the operating plan as determined by the Remuneration Committee. Progress against LTIP targets are reviewed regularly as part of the Remuneration Committee meetings. A decision on payment of the LTIP scheme for 2015/18 has been deferred pending the outcome of the Magnox Inquiry. In addition, the outturn of the 2016/19 LTIP multiplier was assessed at 1.22 out of a possible score of 2. This was based upon a review of the LTIP performance milestones and improvements over and above the operating plan.

Civil Service Pensions
Pension benefits are provided through the Civil Service Pension Arrangements. From 1 April 2015 a new pension scheme for public/civil servants was introduced – the Public/Civil Servants and Others Pension Scheme or **alpha**, which provides benefits on a career average basis with a normal pension age equal to the member's state pension age (or 65 if higher). From that date all newly appointed public/civil servants and the majority of those already in service, joined **alpha**. Prior to that date, public/civil servants participated in the Principal Civil Service Pension Scheme (PCSPS).

The PCSPS has four sections: Three providing benefits on a final salary basis (**classic, premium** or **classic plus**) with a normal pension age of 60; and one providing benefits on a whole career basis **(nuvos)** with a normal pension age of 65.

These statutory arrangements are unfunded with the cost of benefits met by monies voted by Parliament each year. Pensions payable under existing schemes - Classic, Premium, Classic Plus and Nuvos are currently increased annually in line with the Pensions Increase Legislation. See page 75 for further detail.

Pension benefits for Executive Directors are provided through the Civil Service Pension Arrangements.

Employees are automatically enrolled into alpha on appointment to employment at the NDA. This is in line with the auto enrolment rules of the Pensions Act 2008, however, they have the ability to opt out of the scheme at any time or elect to join the Partnership Pension Arrangements offered under the Civil Service Pension Arrangements.

Another benefit and option available is under the Automatic Enrolment legislation, where employees no longer have a duty to automatically enrol a new employee where they have reason to believe that employee has registered for fixed protection in relation to Lifetime allowance and requires them not to participate in future pension provision. In these cases, a pension allowance is paid in lieu.

Other benefits
Benefits are listed in the Directors' Emoluments table with appropriate footnotes. All Executive Directors receive £12,000 per annum as a car allowance.

Fees
The remuneration of the Chairman and Non-Executive Board Directors is determined by BEIS. Non-Executive Board Directors are not involved in decisions relating to their own remuneration and are entitled to fees of £25,000 per annum.

Those who chair board committees also receive a fee supplement, details of which can be found in the table below. The Chairman does not receive a supplement for chairing the Nominations Committee.

Non-Executive Board Directors and the Chairman do not receive performance-related bonuses or pension entitlements but are reimbursed for reasonable expenses incurred in the performance of their duties as directors.

Details of directors' emoluments, pension and cash equivalent transfer values may be seen in the notes to the financial statements and appendices at the end of this section. Details on the gender pay gap can be found on page 71.

2018/19	Committee Chair	Fee per annum (£)	Effective Date
Evelyn Dickey	Chair of Remuneration Committee	5,000	09/09/15
Volker Beckers	Chair of Audit and Risk Assurance Committee	5,000	17/03/16
Janet Ashdown	Chair of Safety and Security Committee	5,000	17/03/16
Rob Holden	Chair of Programmes and Projects Committee	5,000	16/05/17
Tom Smith	Chair of Nominations Committee	-	15/11/18

Ratio between median earnings of organisation's workforce and highest paid Director ('Hutton' Disclosure)
This information has been audited

	2018/19 Total £	2017/18 Total £
Band of highest paid Director's total remuneration	495,000-500,00	495,000-500,00
Median total remuneration	73,840	67,959
Ratio	6.7	7.3.1
Band of lowest paid employee's total remuneration	20,000 - 25,000	20,000 - 25,000

This table shows the ratio of the highest earning Director against that of the employee at the median in earnings, as well as the range. The data includes base pay, allowances and performance related payments as well as severance payments. It does not include employer pension contributions and the cash equivalent transfer value of pensions. The change in ratio results from a higher median pay (higher bonus payment) following the previous year's impact of non-payment of the corporate element of the bonus scheme for the year 16/17.

Remuneration and people report (continued)

People report

Our focus is on developing a high-performing organisation that is committed to continuous improvement in all we do. We want the NDA to be a great place to work, where employees can share their ideas, views and concerns, and feel supported, trusted, valued and respected. The following sections provide updates on key areas of progress in 2018/19.

Development and capability

National skills
Our NDA People Strategy is concerned with how we recruit and invest in our people. It focuses on priorities that will secure the capability we need to deliver our mission, ensuring we have the right skills in place at the right time. Through our People Strategy, we have created a platform of collaboration across the NDA Group and with wider stakeholders including: government, trade unions, Local Enterprise Partnerships, academia and skills bodies.

The Nuclear Skills Strategy Group (NSSG) was formed to represent all parts of the industry, working with government and trade unions, setting out the strategic skills priorities. We are a core member of the Group and take a lead role in representing decommissioning within the wider nuclear context. Nuclear activities in the UK today are diverse. Ranging from design to remediation, they support all parts of the nuclear cycle from new build through to decommissioning, and operation and maintenance of nuclear submarine propulsion and weapon systems, as well as regulatory requirements related to all these activities.

In June 2018, the government's Nuclear Sector Deal was published, setting out the opportunities and challenges for the sector within the context of the Industrial Strategy.

The skills elements of the deal and the associated actions are mandated to the leadership of the NSSG and include:

- meeting the forward demand
- maintenance of subject matter expertise
- transferability and mobility
- increasing the proportion of women employed in the sector to 40% by 2030

We have reviewed our people strategy and associated projects to ensure we are aligned to the Nuclear Sector Deal, and that the targets are reflected in our own aspirations for the future.

Our priorities are supported by a number of programmes where we are taking an integral development and implementation role. These are:

- establishing robust baselines and data on skills gaps in the short, medium and long-term
- ensuring the NDA group is maximising the use of the apprenticeship levy for both new entrants and existing workforce
- supporting the creation of new apprenticeship programmes for the supply chain and local communities in line with the public sector apprenticeship targets
- increasing the number of apprentices across the estate to 2,000 by 2020 (during 2018/19 there were just under 1,000)
- improving equality, diversity and inclusion across all of our recruitment programmes and practices
- engaging young people and enhancing long-term career opportunities within the nuclear sector
- providing opportunities for continued professional development of the existing workforce, particularly people who are mid-career
- creating an environment where highly skilled individuals can pass on their knowledge and mentor the next generation, to future-proof the sector's skills and competence base

A skills audit has taken place across the group. Work is currently under way to review this audit and create a plan to enhance and retain key skills within the organisation and across the group.

Mobility and transferability
The ability to deploy our skilled individuals effectively throughout the NDA group has been a priority focus for 2018/19.

In line with our core principles of collaboration, development and creativity, mobility and transferability, we support the professional development of our people. We take a group-wide view of talent management and succession planning.

Creating the right environment to enable our people to be mobile and have the ability to transfer across our group is paramount. We are consulting with trade unions about our group-wide strategy, associated policies and approaches to secondments, group-wide roles and greater group-wide collaboration for implementation in 2019.

Equality, diversity and inclusion
Cleaning up the UK's earliest nuclear sites will require the brightest minds and most dedicated people for decades to come.

We firmly believe that organisations that take Equality, diversity and inclusion (ED&I) seriously attract and retain the best people, perform better and ultimately are more successful. So creating an environment where differences of thought and perspectives are encouraged isn't just the right thing to do, it's good for our business.

We're working to transform our work environments into places where everyone is treated with dignity and respect, where an inclusive culture encourages diversity of thought and where people can bring their whole selves to work. The ED&I Group Strategy, launched in May 2018, set out the NDA group approach to creating a culture of respect, inclusion and diversity across the nuclear decommissioning sector.

We are setting ourselves stretching targets to be reached by 2022 that will be reviewed annually to measure and monitor progress.

In addition, our diversity and respect at work policies outline the rights of all employees, as well as the responsibility on all employees to comply with equality legislation.

In line with our policies, we work hard to support all individuals who are disabled. This includes those seeking employment with the NDA, as well as those employees who have become recently disabled. In doing this:

- we are a 'disability confident' employer
- we give full and fair consideration to applications for employment, where all screening and assessment is carried out in line with our recruitment standards and with reference to the candidate's aptitudes and abilities
- we make reasonable adjustments and arrange appropriate training for employees who are disabled, or have become recently disabled, in order to support their continuing employment, training, career development and promotion

Gender pay
Across the NDA estate, the gender pay gap ranges from around 9% to 42%. The estate average is 13.1% mean pay gap and 11.2% median compared with 14.2% and 12.8% the previous year.

Although this shows a slight improvement, we still have a difficult task ahead. We have fewer women in senior positions and fewer men in more junior positions across our businesses. There are also more women occupying 'support roles' at the lower end of salary scales and under-representation of women in shift roles, which attract higher pay through shift premiums.

Our real challenge is ensuring we continue to see sustained improvements over the next few years.

With regard to the gender pay gap, within the NDA itself, the figures published in March 2018 as per reporting requirements, were based upon 220 total NDA employees (98 female and 122 male) with the overall gender pay gap for the NDA, when comparing mean pay, being 40.3% and the median pay gap being 42.6%.

Further details on the gender pay gap can be found in the recently published NDA Gender Pay Gap report, which is available at nda.gov.uk.

Joint Consultation Group

The NDA has been continuing to develop a strategic relationship with the national officers of Prospect, GMB and Unite trade unions across the wider group. The aim is to "Work together to decommission the UK's nuclear legacy safely and effectively, helping to deliver a future for our workforces and our communities."

Within the NDA, our working relationship between Prospect Trade Union and employee representatives is well established and continues to operate in a constructive manner. Employees (below Executive) will continue to be covered by a voluntary collective bargaining arrangement with Prospect, covering:

- the annual pay award
- holidays
- hours of work

We recognise that the decision to join, or not to join, the union is entirely a matter of individual choice. All NDA employees are free to become and remain members without prejudice to employment or career prospects. Employees who choose to become trade union members are encouraged to have an active participation in union life.

Leadership

Our focus this year has been on continuing to develop the capability of the NDA workforce. In partnership with Korn Ferry, leadership development training has been rolled out to three cohorts covering personal brand and effectiveness (50% complete), leading through others (50% complete) and legal essentials (90% complete).

More focused training has taken place this year, looking at specific areas of need and practical guidance training specifically Advisory, Conciliation and Arbitration Service (ACAS) investigators course, Choose Respect workshops and unconscious bias training.

Coaching and mentoring of NDA employees remains a strategic focus, with 20 senior leaders identified to work with an external coach to focus on areas of development. In addition, one leader will receive coaching internally through a qualified member of the Executive Team. During the year an internal mentoring programme was rolled out and 17 mentors were trained to provide mentoring to employees at all levels.

Executive & Non-Executive Development

2018/19 saw investment in Executive and Non- Executive development with the Institute of Director training. The Board members also received training and guidance from Eversheds on members duties and obligations and from Linklaters on the concept of controlling mind.

Whilst our aim is to recruit for senior roles through targeted development of our employees, we have and will continue to recruit from the marketplace to strengthen our capabilities. In building capability, we have adopted a balanced approach to learning and created a suite of leadership development solutions. We target 70% of all learning through on-the-job development, with 20% as relationship-based learning such as mentoring and the remaining 10% through direct training or a classroom-based approach.

Commercial Directorate review

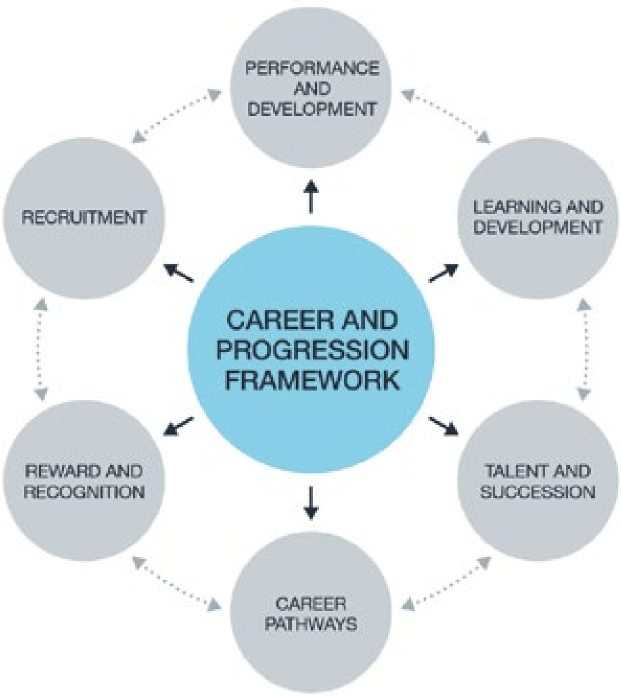
On 1 October 2018, 25 INS commercial colleagues joined the NDA by TUPE transfer to enhance the NDA commercial directorate. This was a key milestone in building an exemplar NDA commercial function that is recognised across government.

Embedding the career and progression framework

Ensuring the NDA has the right people in role, with the right skills, is vital to delivering our mission. The Career and Progression Framework details the key skills required at every level.

Following the pilot of progressional promotion panels in December 2017, we held 2 rounds of panels during 2018/19. These are proving to be an effective way to assess employees for promotion while evaluations after each panel have brought continuous improvement to the process.

We recognise that how we do things is as important as what we do. During 2018/19, in conjunction with employees, we have developed revised values – respect, openness, collaboration, performance and creativity. These are now embedded into our recruitment standards and will be part of our performance management process from 2019/20. Our recruitment standards cover the key elements required for the role and the values in order that we can comprehensively assess candidates. This will flow through the performance management and talent processes to ensure we have an effective and consistent approach to recruitment and developing talent.



Headcount and employee costs

NDA Group staff costs
This information has been audited

NDA Group 2019	NDA Authority (a)		Subsidiaries (b)		Total
	Permanently employed staff	Others	Permanently employed staff	Others	
	£m	£m	£m	£m	£m
Wages and salaries	20	6	631	42	**699**
Social security costs	2	-	72	-	**74**
Pension costs	3	-	114	-	**117**
Total staff costs	25	6	817	42	**890**

NDA Group 2018	NDA Authority (a)		Subsidiaries (b)		Total
	Permanently employed staff	Others	Permanently employed staff	Others	
	£m	£m	£m	£m	£m
Wages and salaries	18	3	641	42	**704**
Social security costs	2	-	74	-	**76**
Pension costs	3	-	103	-	**106**
Total staff costs	23	3	818	42	**886**

(a) Authority people costs are included within administration expenditure (see note 5 to the accounts)
(b) Subsidiary people costs are reported through the ‘contractor and subsidiary costs’ line in the Financial Statements (see note 6 to the accounts)

The group participates in various pension schemes, both defined contribution and defined benefit.
Further details can be found in note 26 to the Accounts.

Pension costs include only those items appearing within operating costs. Items reported elsewhere have been excluded.

The average number of full-time equivalent persons employed during the year was as follows:
This information has been audited

NDA Group	Permanently employed people no.	Others no.	Total 2019 no.	Total 2018 no.
Directly employed - Authority	235	73	308	234
Directly employed - Subsidiaries	11,757	677	12,434	12,569
Total	11,992	750	12,742	12,803

Of the total NDA permanent and fixed term employees at the end of March 2019, the breakdown by gender is as follows:

Authority 2019	Male	Female	Total
Chief Executive	1	-	1
Exec Directors excl. CEO	1	-	1
Other Directors (non-Board)	8	1	9
Other employees	108	116	224
Total	118	117	235

Remuneration and people report (continued)

Notes to the Remuneration Report

Tax arrangements of public sector appointees

As a public body, the NDA adheres to the IR35 regulations in deeming if any temporary roles will be captured within the legislation or deemed out of scope of the legislation. In determining this information, we utilise the IR35 checker provided by HMRC on www.gov.uk. We are required to provide information about off-payroll appointments of consultants, contractors or people employed for longer than six months. We only use these arrangements where we cannot avoid them, for example to bring in unique skills, capability and experience that we do not have in-house.

We look to minimise the use of these arrangements and include contractual clauses in appointment documentation to enable us to receive assurance that the individual or their employer is managing their tax affairs appropriately. Our right to request assurance over tax obligations is made explicit to all off-payroll workers. We continue to work closely with Ernst and Young, our chosen partners for IR35 auditing and supporting our IR35 checks with assured compliance.

Our off-payroll appointments at 31 March 2019 for individuals on more than £220 per day and lasting more than six months (up until the expected end date – not 31 March 2018) are detailed below. There were six new off-payroll workers in the year whose assignments lasted more than six months (between start (after 1 April 2018) up to 31 March 2019 not end of contract). No senior management were paid through off-payroll arrangement during this reporting period.

Length of appointment at 31 March 2019	No. of off payroll contractors
Less than 1 year	9
1-2 years	10
2-3 years	2
3-4 years	-
More than 4 years	2

Consultancy spend in the year was £1,942,200 (2017/18: £59,000), being consultancy support for our organisational design programme.

Employee turnover and health and well-being

We recognise that health and wellbeing at work is vital. We closely monitor both short-term and long-term sickness absence and have policies and support mechanisms in place. This includes access to an external employee assistance service (EAP), helping us manage and support individuals back to work.

For 2018/19, an average of 4.6 days per employee was lost to sickness absence. This equates to an absence rate of 1.83% and is less than the national average of 6.3 days. An analysis of 2018/19 total absence identifies that mental health contributed to the majority of long-term absences.
Our focus for the coming year is to further promote mental health and well-being as we work closely with the NDA ED&I group sharing best practice and innovative ways of raising awareness.

Another focus will be on the absence management process which will be reviewed and advertised around the business together with training sessions to all line managers on recording and managing absence.

People turnover

The average length of service is seven years and for the year 2018/19 turnover of permanent people was 7%. This compares to an average external turnover rate of 16.5% (as per latest CIPD survey).

This information has been audited.

During 2018/19, no one was in receipt of an exit package.

In 2017/18, there was one individual left the NDA with an exit package as set out below.

2018 Exit package cost band	Number of compulsory redundancies	Number of other agreed departures	Total no. of exit packages by cost band
£50,000 - £99,999	-	1	1
Total no of exit packages	-	1	1

Respected. Included.
Performing at our Best.

Pension detail
Employee contributions are set at the rate shown in the table below:

Annual Pensionable Earnings (full-time equivalent basis)	All PCSPS Schemes & alpha 2018/19 contributions
Up to £15,000	4.60%
£15,001-£21,210	4.60%
£21,211-£48,471	5.45%
£48,472-£150,000	7.35%
Over £150,000	8.05%

Employee membership of NDA schemes is noted in the table below:

Scheme	% of employees
alpha	77
Nuvos/Premium/ Classic	12
Partnership	2
UKAEA (INS TUPE)	7
Opt Out	2

Existing members of the PCSPS who were within 10 years of their normal pension age on 1 April 2012 remained in the PCSPS after 1 April 2015. Those who were between 10 years and 13 years and five months from their normal pension age on 1 April 2012 will switch into **alpha** between 1 June 2015 and 1 February 2022. All members who switch to **alpha** have their PCSPS benefits 'banked', with those with earlier benefits in one of the final salary sections of the PCSPS having those benefits based on their final salary when they leave **alpha.** (The pension figures quoted for officials show pension earned in PCSPS or **alpha** – as appropriate. Where the official has benefits in both the PCSPS and **alpha** the figure quoted is the combined value of their benefits in the two schemes.) Members joining from October 2002 may opt for either the appropriate defined benefit arrangement or a 'money purchase' stakeholder pension with an employer contribution (**partnership** pension account).

Employee contributions are salary-related and range between 4.6% and 8.05% for members of **classic, premium, classic plus, nuvos and alpha**. Benefits in **classic** accrue at the rate of 1/80th of final pensionable earnings for each year of service. In addition, a lump sum equivalent to three years initial pension is payable on retirement. For **premium**, benefits accrue at the rate of 1/60th of final pensionable earnings for each year of service. Unlike **classic**, there is no automatic lump sum. **classic plus** is essentially a hybrid with benefits for service before 1 October 2002 calculated broadly as per **classic** and benefits for service from October 2002 worked out as in **premium**. In **nuvos** a member builds up a pension based on his pensionable earnings during their period of scheme membership. At the end of the scheme year (31 March) the member's earned pension account is credited with 2.3% of their pensionable earnings in that scheme year and the accrued pension is uprated in line with Pensions Increase legislation. Benefits in **alpha** build up in a similar way to **nuvos**, except that the accrual rate is 2.32%. In all cases members may opt to give up (commute) pension for a lump sum up to the limits set by the Finance Act 2004.

The **partnership** pension account is a stakeholder pension arrangement. The employer makes a basic contribution of between 8% and 14.75% (depending on the age of the member) into a stakeholder pension product chosen by the employee from a panel of providers. The employee does not have to contribute, but where they do make contributions, the employer will match these up to a limit of 3% of pensionable salary (in addition to the employer's basic contribution). Employers also contribute a further 0.5% of pensionable salary to cover the cost of centrally-provided risk benefit cover (death in service and ill health retirement).

The accrued pension quoted is the pension the member is entitled to receive when they reach pension age, or immediately on ceasing to be an active member of the scheme if they are already at or over pension age. Pension age is 60 for members of **classic, premium and classic plus**, 65 for members of nuvos, and the higher of 65 or State Pension Age for members of **alpha**. (The pension figures quoted for officials show pension earned in PCSPS or alpha – as appropriate. Where the official has benefits in both the PCSPS and alpha the figure quoted is the combined value of their benefits in the two schemes, but note that part of that pension may be payable from different ages.)

Remuneration and people report (continued)

Notes to the Remuneration Report

Directors' emoluments

This information is subject to and has been audited.

2018/19	Salaries £	Additional benefits £	Performance Related Payment £	LTIP payments made £	Pension benefits (ix) £	Total emoluments £
Tom Smith	150,000	-				150,000
Volker Beckers (i)	30,000	-				30,000
Evelyn Dickey (ii)	30,000	-				30,000
Janet Ashdown (iii)	30,000	-				30,000
Rob Holden (iv)	30,000	-				30,000
Candida Morley (v)	-	-				-
David Batters (vi)	235,295	16,508	69,647	41,102	90,236	452,788
Adrian Simper (vii)	136,687	8,000	40,459	20,467	67,907	273,520
David Peattie (viii)	314,650	58,411	125,860	-	-	498,921

2017/18	Salaries £	Additional benefits £	Performance Related Payment £	LTIP payments made (x) £	Pension benefits (ix) £	Total emoluments £
Tom Smith	150,000	-				150,000
Volker Beckers (i)	30,202	-				30,202
Evelyn Dickey (ii)	30,417	-				30,417
Janet Ashdown (iii)	30,202	-				30,202
Rob Holden (iv)	29,167	-				29,167
Candida Morley (v)	-					-
David Batters (vi)	231,818	12,000	71,863	-	88,902	404,583
Adrian Simper (vii)	202,000	12,000	57,750	-	70,111	341,681
David Peattie (viii)	310,000	57,725	131,750	-	-	499,475

(i) salary £25,000 per annum, 2017/18 and 2018/19 include fees of £5,000 for the role of Chair of the Audit and Risk Assurance Committee. 2017/18 figure includes adjustment of £202 in respect of previous period

(ii) salary £25,000 per annum, 2017/18 and 2018/19 include fees of £5,000 paid for the role of Chair of the Remuneration Committee. 2017/18 figure also includes adjustment of £417 in respect of the previous period.

(iii) salary £25,000 per annum, 2017/18 and 2018/19 include fees of £5,000 agreed for the role of Chair of the Safety and Security Committee. 2017/18 figure includes adjustment of £202 in respect of previous period.

(iv) salary £25,000 per annum, 2018/19 include fees of £5,000 agreed for the Chair of the Programmes and Projects Committee (2017/18: £4,167)

(v) Did not receive any remuneration for her services to the Board

(vi) additional benefits received was a car allowance of £12,000, compensation for unused annual leave £4,508 18/19.

(vii) resigned as an Executive Board Director with effect from 28 November 2018; appointed as a member of the Executive team on 29 November 2018. 2018/19 annual salary of £202,000; only April to November 2018 salary as the Executive Board Director has been disclosed. Additional benefits received was a car allowance of £12,000 and in 2017/18; only April to November 2018 additional benefits as Executive Board Director have been disclosed.

(viii) additional benefits received was a car allowance of £12,000, and a pension allowance of £46,411 (2017/18: £45,725)

(ix) pension benefits within the PCSPS schemes and alpha are calculated as 20 times the real increase in pension during the year, plus the real increase in any lump sum, less employee contributions made, in accordance with HMG guidelines.

(x) award of LTIP payment 2015/18 scheme was deferred pending a decision by the Remuneration Committee following the Magnox Inquiry report.

Executive Directors’ pensions

This information is subject to and has been audited.

	Real increase in pension during the year 2018/19 £000’s	Accrued pension at 31 March 2018 £000’s	CETV at 31 March 2018 £000’s	CETV at 31 March 2019 £000’s	Real increase in CETV funded by employer £000’s
David Batters	5-7.5	40-45	459	590	51
Adrian Simper	5-7.5	80-85	1,139	1,361	64
David Peattie*	-	-	-	-	-

Notes:* Does not participate in the Civil Service Pension arrangements – see note (viii) to Directors’ Emoluments

Cash equivalent transfer values

A Cash Equivalent Transfer Value (CETV) is the actuarially assessed capitalised value of the pension scheme benefits accrued by a member at a particular point in time. The benefits valued are the member’s accrued benefits and any contingent spouse’s pension payable from the scheme.

A CETV is a payment made by a pension scheme or arrangement to secure pension benefits in another pension scheme or arrangement when the member leaves a scheme and chooses to transfer the benefits accrued in their former scheme.

The pension figures shown relate to the benefits accrued by the individual as a consequence of their total membership of the pension scheme, not just their service in a senior capacity to which disclosure applies. The figures include the value of any pension benefits in another scheme or arrangement which the individual has transferred to the Civil Service Pension Arrangements and for which the Civil Superannuation Vote (CS Vote) has received a transfer payment commensurate with the additional pension liabilities being assumed.

They also include any additional pension benefit accrued to the member as a result of their purchasing additional years of pension service in the scheme at their own cost. CETVs are calculated within the guidelines and framework prescribed by the Institute and Faculty of Actuaries.

Real increase in CETV

This reflects the increase in CETV effectively funded by the employer. It does not include the increase in accrued pension due to inflation, contributions paid by the employee (including the value of any benefits transferred from another pension scheme or arrangements) and uses common market valuation factors for the start and end of the period.

Disclosures required under the Trade Union (Facility Time Publication Requirements) Regulations 2017

Relevant union officials

Relevant union officials	Full-time equivalent employee number
7	235

Percentage of time spent on facility time

Percentage of the working hours spent by relevant union officials, employed during the relevant period, on facility time.

Percentage of time	Number of employees
0%	1
1-50%	6
51-99%	-
100%	-

Percentage of pay bill spent on facility time

Total cost of facility time	£17,961
Total pay bill	£20,661,322
Percentage of the total pay bill spent on facility time, calculated as: (total cost of facility time ÷ total pay bill) x 100	0.1%

Paid trade union activities

Time spent on paid trade union activities as a percentage of total paid facility time hours calculated as (total hours spent on paid trade union activities by relevant union officials during the relevant period ÷ total paid facility time hours) x 100	0.1%

Health, safety, security, safeguards and environment report

The safety of people, protection of the environment and security of nuclear materials and information are the NDA's overriding priorities and dictate our approach to all activities across the group.

NDA safety and environmental performance
The NDA's safety performance continued to be good, with no serious accidents or injuries during the year.

'See Something, Say Something', our reporting process for accidents, incidents, observations, near misses and good practice has started to provide us with useful information. We use the analysis to report to and consult with our safety representatives every quarter. As we move forward with the continuous improvement initiative company wide, this information will be used to establish trends and issues that will inform forward improvement plans.

This year, we started the process of streamlining and simplifying our documents in line with HSE guidance and our One NDA approach.

Government has set environment and waste targets that must be met by 2019/20, taking 2009/10 as the baseline year. The specific targets and our achievements are shown in the table.

The targets apply to the NDA combined with Radioactive Waste Management (RWM) as in the baseline year RWM was part of the NDA.

The greenhouse gas emissions reduction target was reset from 32% to 66% by BEIS in 2018/19. We have made good progress in reducing our emissions but meeting the new target in the time available will prove challenging. The increased occupancy at our office in Cumbria may prevent us meeting the water target without some intervention. RWM is also moving to a more environmentally friendly office in 2019/20. However, this leaves redundant equipment which will increase our waste generation this year but should help to reduce it in future years.

TARGET 2019/20	PERFORMANCE 2018/19
Reduce greenhouse gas emissions by 66%	**60%**
Reduce domestic flights by 30%	**68%**
Reduce waste generation by 25%	**49%**
Reduce landfill disposal to less than 10%	**0%**
Reduce paper use by 50%	**72%**
Reduce water use by 10%	**17%**

Business - safety performance

We use a suite of metrics, targets and performance indicators to analyse safety performance. We also visit sites to carry out safety reviews and discuss safety directly with managers, workers and trade union representatives. The results are reported to the NDA Executive and the NDA Safety and Security Committee (S&SC), a sub-committee of the NDA Board, and the findings are raised with businesses and Parent Body Organisations, who are expected to produce and enact plans to mitigate any risks arising.

Sellafield

In May 2018, we were advised by the Office for Nuclear Regulation (ONR) that it would prosecute Sellafield Ltd over the contamination of a worker.
Sellafield pleaded guilty to an offence under section 2(1) of the Health and Safety at Work act 1974 and subsequently received a fine of £380,000 plus £96,753 legal costs. Sellafield welcomed ONR comments that the incident did not point to any broader concern about the control of risks and hazards across the site. Lessons have been learned, and improvements implemented to prevent a recurrence.

Sellafield reported 3 RIDDOR Dangerous Occurrences: the failure of a cast iron cable joint, an electrical cable strike and a spill of nitric acid. Although no one was hurt by any of these events we are hugely disappointed to see this drop in safety performance. All of the above have been subject to Sellafield's investigation process and actions have been put in place to prevent recurrence.

Sellafield's accident rate, which is a measure of actual harm, remained the same as last year, indicating that the fundamentals of good safety management are in place. We did note an increase in the number of events that resulted in people taking time off work to recover (Lost-Time Accidents), the severity of some types of injury and the number of events where human performance was a contributory factor. Serious events were rare. The trends noted by the NDA were identified independently by Sellafield and recognised as a risk to the business. Sellafield's proposals for corrective action were taken to the March 2019 NDA S&SC and were accepted.

Dounreay

Dounreay Site Restoration Ltd (DSRL) continued the good work of last year by achieving further improvements in safety and environmental performance. SEPA's (Scottish Environmental Protection Agency) final assessment rating for 2018 at the site and Low Level Waste disposal facility next to the site was "excellent".

Magnox

Safety performance at Magnox has been acceptable during the year but there remains room for improvement. There was evidence of low level events involving conventional safety, radiation protection and the control and supervision of work. There were also a number of near misses that gave cause for concern.

Magnox recorded one INES1 event this year when operators at Wylfa found an incorrectly fitted flask lid seal during checks - a maintenance anomaly that had no effect on safety. Training and procedures were revised to ensure that we learned from the event.

Magnox has continued to progress its asbestos improvement programme and build on the work delivered during the 2017/18 financial year. Recognition and understanding of the scale of the issue is now embedded.

The NDA set a Performance Based Incentive (a reward mechanism) which identified key deliverables as a method of achieving compliance and value for money. This has improved the management of asbestos at the sites.

Safety and environments events were investigated by Magnox, and action taken to prevent recurrence.

Low Level Waste Repository (LLWR)

Although safety performance took a down-turn at the start of the year with an increase in the number of low-level events, LLWR received support from its Parent Body Organisation (PBO), who undertook an independent corporate safety review and concluded that there were no significant issues or conditions. The review noted that most of the events and injuries involved administrative personnel, or occurred during routine activities. Appropriate changes were made to induction and other training. At the end of the year, LLWR's accident rate was near to zero.

LLWR received an Enforcement Letter from the ONR for defects in packages used for transporting nuclear material. The packages were embargoed, and repaired and the issue has been resolved.

Subsidiaries

Our other businesses commitment to the highest standards of health and safety was demonstrated through good safety performance this year.

As part of ongoing governance, the NDA has carried out health, safety and environment audits at most of our subsidiaries. The audits did not find any serious safety issues, and corrective actions placed by the NDA are reported to our Executive Committee and centrally monitored to satisfactory completion by our in-house HSE team.

A paper on our approach to sustainability in nuclear decommissioning was approved by the S&SC in March 2019. The changes will be embedded in NDA's processes in the coming years.

Businesses – environmental performance

- Sellafield, staff found several holes in corroded ventilation ductwork, and received an Environment Agency Enforcement Notice (their first in 10 years) for failing to carry out adequate maintenance. Sellafield is working through a number of improvement programmes in the control of chemicals, wastes, and asset care. Although environmental events did not result in pollution or harm to the environment, environmental awareness must improve, and the NDA is monitoring Sellafield's progress. The event was subsequently rated INES 1 and the rating was confirmed on 24 April 2019 by the National Officer
- improvements which were started last year have been consolidated this year with very good, sustained environmental performance at Dounreay. This is recognised by SEPA in its compliance evaluation for the year which was confirmed as excellent for both the site and the adjacent Low Level Waste Repository. Improvement has been achieved through senior management leadership, environmental awareness training and all parts of Dounreay recognising the roles they have to play in environmental protection
- environmental performance at Magnox has generally been good. However, it has received warning letters from the environmental regulators this year, largely related to the control of waste. Although the majority of waste is managed with no issue, improvements still need to be made and will be monitored to ensure appropriate actions are in place
- elsewhere, there has been good environmental performance at LLWR and in our businesses NDA Properties Ltd, INS/PNTL, RWM and DRS

NDA group - security performance

Security remains a key focus in the UK civil nuclear sector and the NDA group continues to play a major part in the protection of nuclear and other radiological materials. Throughout the year the group has undertaken reviews of all security measures as part of the re-write of Nuclear Site Security Plans (NSSPs). Regular reviews provide assurances that security is both appropriate and proportionate to minimise risk and incorporate shared learning from across the industry. Working with key stakeholders such as BEIS, Home Office, ONR, Civil Nuclear Security (CNS) and Civil Nuclear Constabulary (CNC) the NDA group plays a significant role in initiatives designed to continually improve nuclear security. The holistic approach means NDA remains at the forefront of emerging technologies and security best practice, allowing us to develop contingencies and mitigations based on real-time information and horizon-scanning. Specific deliverables include:

a. **NDA's Cyber Security and Resilience Programme (CSRP)**
NDA's Cyber Security Programme is fully aligned with the National Cyber Security Strategy and BEIS. This includes supporting development of UK Cyber Security talent by creating Cumbria's first cyber Lab, and hosting the first cohort of cyber security apprentices for our businesses.

b. **Supply chain security**
The NDA is leading the sector in the development of an aligned approach to protecting information shared with the supply chain in both hard and electronic formats. This work will continue to standardise and simplify the processes and procedures in the NDA group. This should in turn reduce on boarding processes and associated costs; whilst delivering more robust security measures to reduce security risks within the supply chain.

c. **Alignment of Security and Resilience (S&R) group strategy**
An agreed security and resilience strategy was delivered that seeks to capitalise on economies of scale and scope and delivering value or money. This strategy is being implemented to encourage shared learning, improve group governance and standardise common security practices such as vetting and access control.

d. **Culture and the human factor**
Capitalising on the work conducted in 2017, the NDA has developed a learning package that highlights common security errors resulting from the human factor; this learning package will be delivered in the next financial year.

e. **Governance: Security performance**
is challenged via the quarterly performance reviews (QPRs) where group businesses are held to account, and improvement actions are placed where required. This approach has helped improve overall group security and is beginning to drive overall group consistency.

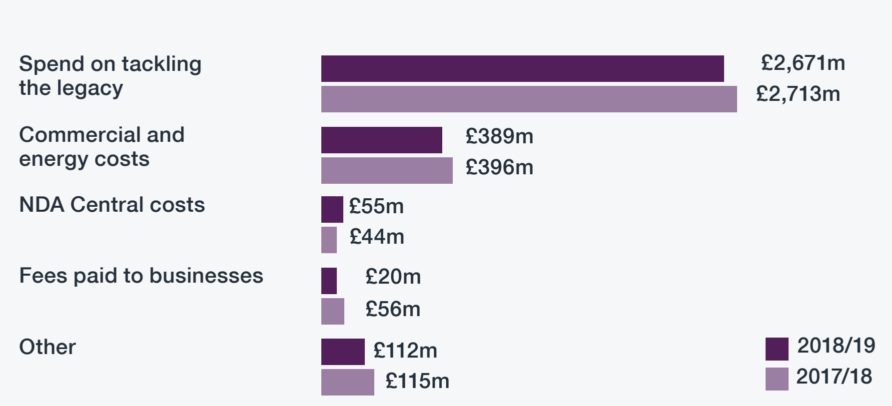
f. **Group security improvement projects:** Security enhancements continue through the group with Nucleus (the nuclear and Caithness Archives) providing greater information security through the continued information consolidation programme. Off-Site Command Facility (OSCF) and the Multi-Services Command Facility (MSCF) provide greater capability and resilience.

Financial summary

Financial summary 2018/19

The NDA spend on tackling the legacy

The bulk of the NDA's budget is directed towards tackling the nuclear legacy, by funding the decommissioning carried out by site licence companies. The remainder funds commercial operations, industry-wide costs, fees to site licence companies. and the NDA's own running costs.

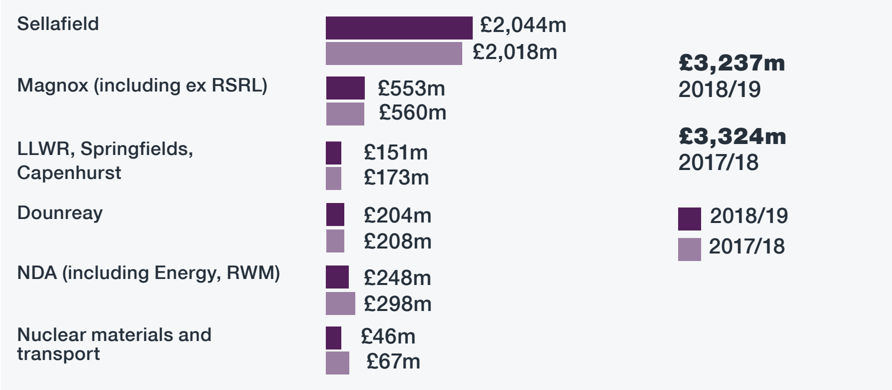


The NDA spend by site licence company.

Spend in 2018/19 was £3.2 billion. More than 60% of this was spent at Sellafield, reflecting the priority given to the site.

Expenditure at Sellafield has increased during the NDA's existence and now stands at £2 billion per year.

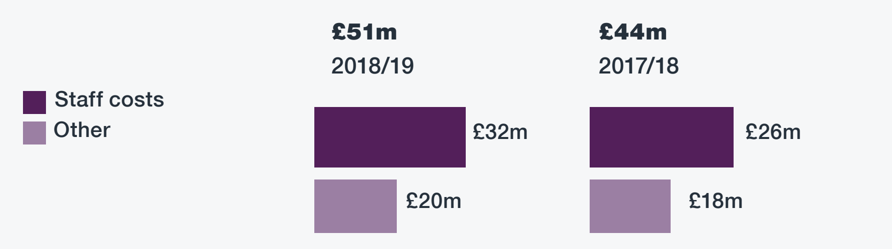
NDA spend by business or activity £m



The NDA Corporate Centre net spend

The NDA's own net running costs increased to £51 million per year (£55 million costs less £4 million income), or approximately 1.7% of overall expenditure, reflecting the start of the NDA's investment in enhanced capability and capacity.

NDA HQ net spend £m

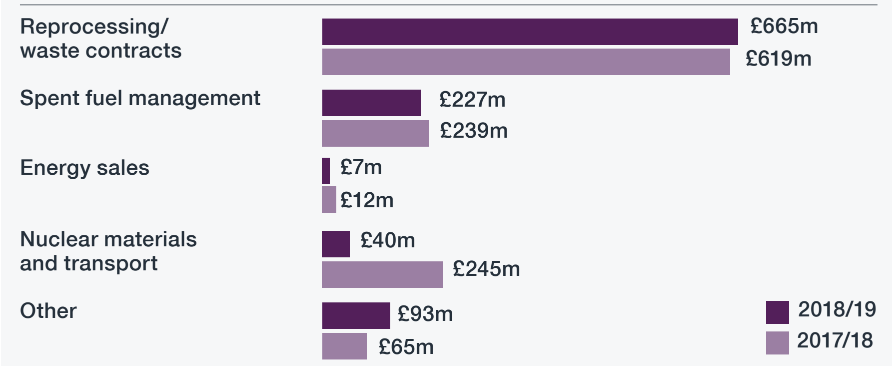


The NDA's income

The NDA recognised income of over £1 billion in the year, with 87% arising from reprocessing and management of spent fuels and waste.

Income from transport and nuclear materials was higher in 2017/18 due to non-recurring commercial transactions.

NDA income £m



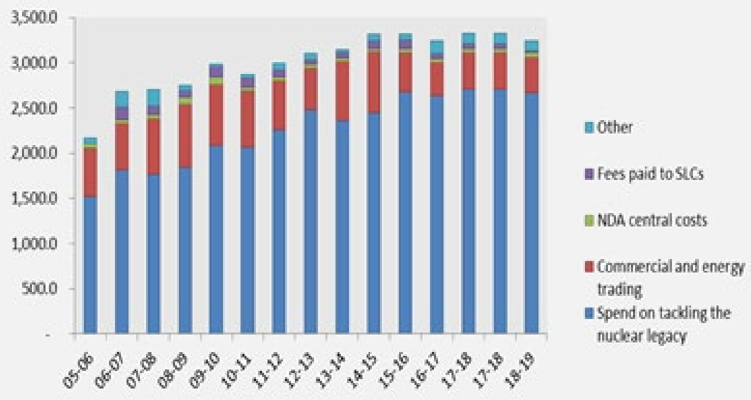
Note the figures in the above graph are prepared on the basis of government financial reporting (HM Treasury's Consolidated Budgeting Guidance) which differs in part from the basis used to prepare the financial statements.

The NDA spend on tackling the legacy

The proportion of NDA expenditure tackling the nuclear legacy has increased since 2005, with a corresponding reduction in commercial costs as commercial operations wind down.

Proportion of NDA spend on tackling the nuclear legacy since 2005

(£m)

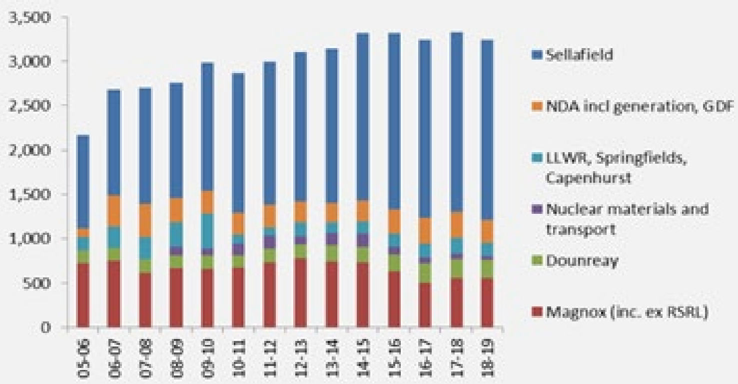


The NDA spend by site licence company

Sellafield has always been the NDA's largest area of spend, and has been increasingly prioritised in recent years as funding has been directed towards the estate's highest hazards.

NDA spend by site licence company or activity since 2005

(£m)



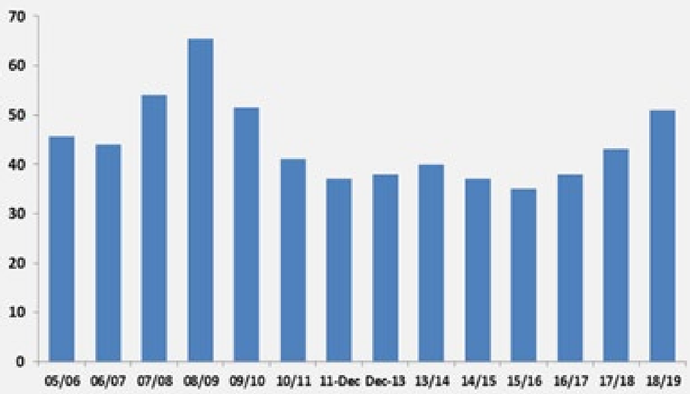
The NDA Corporate Centre net spend

After the early years in establishing the NDA's structure and programme, annual running costs stabilised at below £40 million per year.

The trend has been reversed as the NDA has begun to invest in more enhanced capability and capacity in order to ensure the successful delivery of its mission, reflecting the increasing number of subsidiaries and responding to PAC and Magnox Inquiry findings.

NDA HQ net spend since 2005

(£m, excluding RWM)

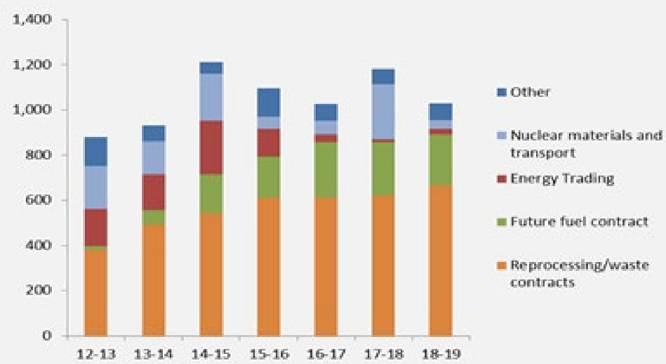


The NDA's income

In recent years electricity generation income has reduced, leaving reprocessing and management of spent fuels and waste as the dominant source of income.
In turn this source of income will reduce in the medium term as contracts near completion.

NDA income since 2012

(£m)



Nuclear provision

The nuclear provision is a single point number in the Statement of Financial Position which represents the discounted estimated cost of the decommissioning mission.

The NDA management's best estimate of the future costs of the estate is based on an assumed inventory of materials, using strategies for retrieval and disposal over several decades. Each of these elements (quantity, method and time to treat) is uncertain in their own right, as is the cost of developing the necessary technology and plans to deal with these activities. The quality of the forecast becomes less certain as time goes out, and acceptable standards of clean-up and end states may change.

It is important to understand the basis of this estimate and the inherent uncertainty around it, and therefore that it is simply a single point in a credible range of potential outcomes. For more detail see Appendix A on page 162.

Changes in 2018/19 estimate Authority

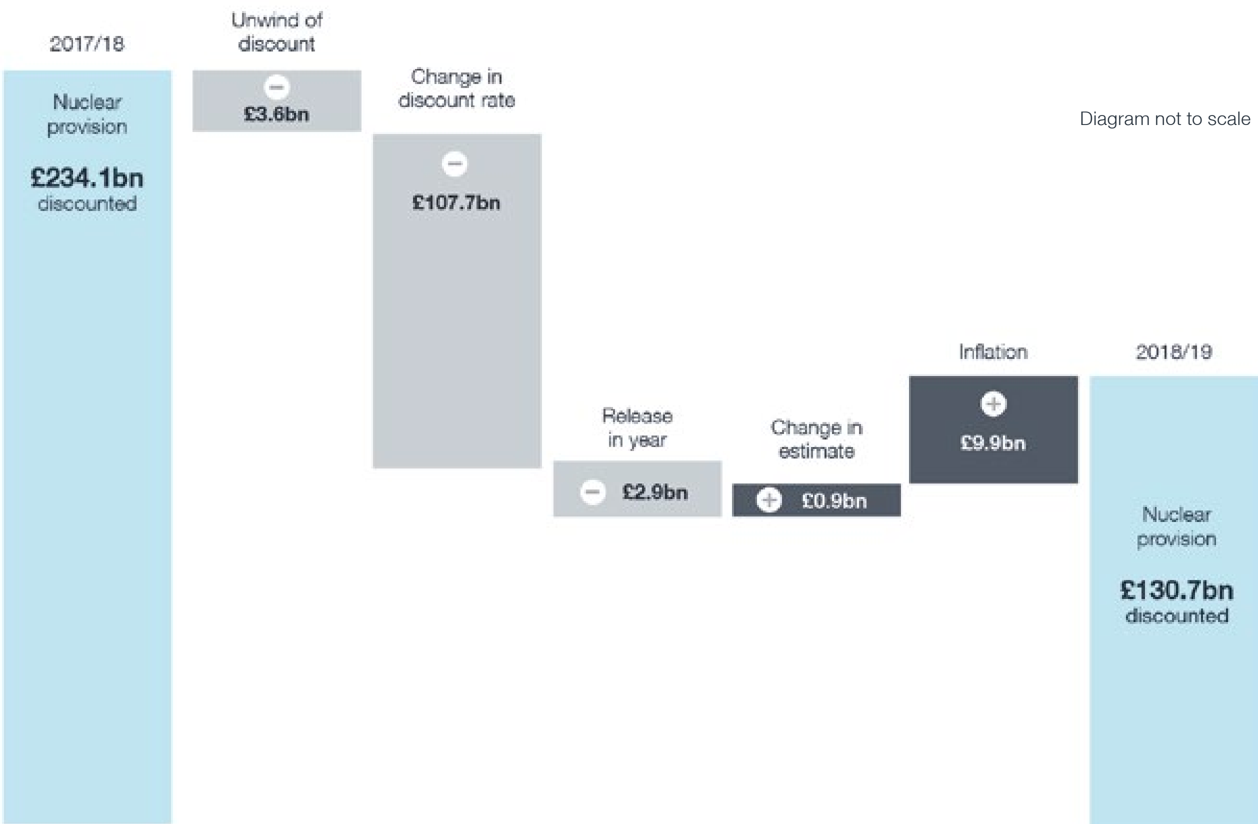
The discounted nuclear provision at the end of 2017/18 was **£234.1 billion**. Since then the movements have been:

- The value provided for 2017/18 released from the provision **- £2.9 billion**
- Increases from inflation **+£9.9 billion**
- Unwinding of the existing discount applied to the provision every year **- £3.6 billion**
- The impact of the changes in discount rates **-£107.7 billion**
- Cost estimate changes which increase the liability estimate by **£0.9 billion**.

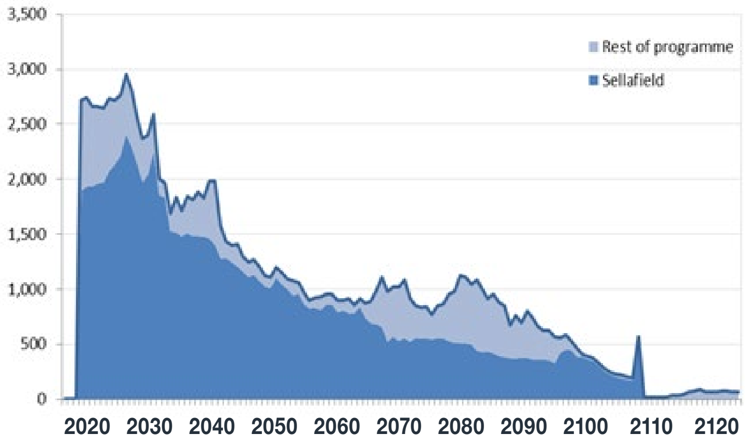
These movements bring the 2018/19 Authority estimate to **£130.7 billion** discounted.

Cost estimate changes reflect updated assumptions on the scope and cost of the work required to achieve the Dounreay interim end state and to deliver the GDF.

The nuclear provision is the best estimate of how much our mission will cost over approximately 120 years



Total expenditure profile (£m, undiscounted)



The graph (left) shows the undiscounted expenditure profile for future years (excluding NDA administrative and other non-programme costs, and some commercial costs) from lifetime cost projections from each of the site licence companies.

The expenditure profile illustrates a downward trend in expenditure over the next 50 years, following a short-term peak over the next 10 years, as sites enter into Care and Maintenance with subsequent increases in expenditure in the period from 2070 when final site clearance work on Magnox sites is undertaken.

			Movements							
	2017/18 undiscounted £m	2017/18 discounted £m	Unwind of discount £m	Discount rate change £m	Released in year £m	Inflation £m	Other cost change £m	Movement discounted £m	2018/19 undiscounted £m	2018/19 discounted £m
Magnox	(14,667)	(36,766)	568	21,033	556	(865)	(110)	21,182	(14,571)	(15,584)
Sellafield	(91,385)	(165,889)	2,561	71,165	1,950	(8,312)	(4)	67,360	(93,986)	(98,529)
Dounreay	(2,271)	(2,691)	40	276	188	(62)	(544)	(102)	(2,678)	(2,793)
LLW Repository	(557)	(1,244)	20	647	31	(29)	(23)	646	(560)	(598)
INS Contracts	(43)	(61)	1	14	-	(1)	-	14	(44)	(47)
Springfields	(681)	(1,493)	23	773	53	(34)	-	815	(644)	(678)
Capenhurst	(1,533)	(2,240)	35	628	57	(53)	-	667	(1,511)	(1,573)
GDF	(9,817)	(23,682)	367	13,228	40	(559)	(250)	12,826	(10,266)	(10,856)
Authority	**(120,954)**	**(234,066)**	**3,615**	**107,764**	**2,875**	**(9,915)**	**(931)**	**103,408**	**(124,260)**	**(130,658)**
NDA group companies	(143)	(170)	-	-	-	-	111	111	(51)	(59)
Group provision adjustment	667	667	-	-	-	-	92	92	759	759
NDA Group	**(120,430)**	**(233,569)**	**3,615**	**107,764**	**2,875**	**(9,915)**	**(728)**	**103,611**	**(123,552)**	**(129,958)**

Parliamentary accountability disclosures

The notes and disclosures in this section are subject to audit.

Losses and special payments
The disclosures in this note are in accordance with ‘Managing Public Money’, and the purpose of this note is to report on losses and special payments of particular interest to Parliament.

Total losses during the year were £1,481,536 (2018: £2,248,145).

Type of loss	2019 Total £	2019 Number of cases	2018 Total £	2018 Number of cases
Cash losses	-	-	-	-
Store losses	363,940	100+	1,943,662	100+
Losses of pay, allowances and superannuation	-	-	-	-
Fruitless payments	82,616	382	76,854	343
Constructive losses	296,624	1	-	-
Claims waived or abandoned	-	-	-	-
Book-keeping losses	-	-	-	-
Failure to make adequate charges	-	-	-	-
Exchange rate fluctuation losses	168,933	1	227,629	1
Special payments	569,423	2	-	-
Total	1,481,536	-	2,248,145	-

A contract loss provision in respect of potentially onerous commercial contracts with foreign countries to reprocess fuel is included within other provisions (note 25 to accounts) and is not included in the losses disclosed above. Constructive losses arose from the writing off of an asset at the Sellafield site.

Store losses relate to the write off of stores items on licensed sites. Special payments included an employment termination payment by LLWR (£92,500) and a fine (£380,000), associated costs (£96,753) and victim surcharge (£170) paid by Sellafield Ltd following a court prosecution safety breaches relating to equipment used for the processing of plutonium on 5 February 2017, following an investigation by the Office for Nuclear Regulation (ONR).

Contingent liabilities

Contingent liabilities not required to be disclosed under IAS 37 but included for parliamentary reporting and accountability purposes:
The NDA has non-quantifiable contingent liabilities arising from indemnities given as part of the contracts for the management of the site licence companies. These indemnities are in respect of the uninsurable residual risk that courts in a country which is not party to the Paris and Brussels Conventions on third party liability in the field of nuclear energy may accept jurisdiction to determine liability in the event of a nuclear incident. Indemnities are in place in respect of Magnox, LLWR and Dounreay, as set out in the relevant Parent Body Agreements. In addition, indemnities are provided to the previous PBOs of Magnox and Sellafield covering the periods in their ownership. These are not treated as contingent liabilities within the meaning of IAS 37 since the possibility of a transfer of economic benefit in settlement is considered too remote.

On 29 March 2017, the UK government submitted its notification to leave the EU in accordance with Article 50. The triggering of Article 50 started a two-year negotiation process between the UK and the EU. On 11 April 2019, the government confirmed agreement with the EU on an extension until 31 October 2019 at the latest, with the option to leave earlier, as soon as a deal has been ratified.

Any subsequent changes in legislation, regulation and funding arrangements are subject to the outcome of the negotiations. As a result, an unquantifiable contingent liability is disclosed. In accordance with accounting standards, no contingent assets can be recognised.

The audit report of the Comptroller and Auditor General to the Houses of Parliament

Opinion on financial statements

I have audited the financial statements of the Nuclear Decommissioning Authority for the year ended 31 March 2019 under the Energy Act 2004. The financial statements comprise: the Group and Authority Statements of Comprehensive Net Expenditure, Financial Position, Cash Flows, Changes in Taxpayers' Equity; and the related notes, including the significant accounting policies. These financial statements have been prepared under the accounting policies set out within them.

I have also audited the information in the Accountability Report that is described in that report as having been audited.

In my opinion:

- the financial statements give a true and fair view of the state of the group's and of the Nuclear Decommissioning Authority's affairs as at 31 March 2019 and of the group's and the Authority's net expenditure after taxation for the year then ended; and
- the financial statements have been properly prepared in accordance with the Energy Act 2004 and Secretary of State directions issued thereunder.

Emphasis of matter – nuclear provisions

Without qualifying my opinion, I draw attention to the disclosures made in notes 3 and 24 to the financial statements concerning the uncertainties inherent in the nuclear decommissioning provisions. As set out in these notes, given the very long timescales involved and the complexity of the plants and materials being handled, a considerable degree of uncertainty remains over the value of the liability for decommissioning nuclear sites designated by the Secretary of State. Significant changes to the liability could occur as a result of subsequent information and events which are different from the current assumptions adopted by the Authority. Note 24 shows the decrease in the liability during the year to 31 March 2019 arising from the changes in the long-term discount rate, underlining the uncertainty inherent in management's estimate associated with the long timescales involved and discount rate assumptions.

Emphasis of matter – accounting for waste treatment income

Without qualifying my opinion, I also draw attention to the disclosures made in note 2.2 to the financial statements concerning the recognition of income for waste treatment performance obligations within reprocessing contracts. As set out in that note, the Authority has accounted for the waste treatment elements of overseas reprocessing contracts on a portfolio basis alongside the waste treatment elements of other reprocessing contracts. Management have adopted this treatment as they do not consider that income recognition, in the context of the Authority's derogation from HM Treasury to apply IFRS 15 on a prospective only basis, would otherwise reflect the overall progress of the waste treatment programme.

Opinion on regularity

In my opinion, in all material respects the income and expenditure recorded in the financial statements have been applied to the purposes intended by Parliament and the financial transactions recorded in the financial statements conform to the authorities which govern them.

Basis of opinions

I conducted my audit in accordance with International Standards on Auditing (ISAs) (UK) and Practice Note 10 'Audit of Financial Statements of Public Sector Entities in the United Kingdom'. My responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of my certificate. Those standards require me and my staff to comply with the Financial Reporting Council's Revised Ethical Standard 2016. I am independent of the Nuclear Decommissioning Authority in accordance with the ethical requirements that are relevant to my audit and the financial statements in the UK. My staff and I have fulfilled our other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Conclusions relating to going concern

I am required to conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the group's and the Nuclear Decommissioning Authority's ability to continue as a going concern for a period of at least twelve months from the date of approval of the financial statements. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the entity to cease to continue as a going concern. I have nothing to report in these respects.

Responsibilities of the Authority and Accounting Officer for the financial statements

As explained more fully in the Statement of Accounting Officer's Responsibilities, the Authority and the Accounting Officer are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view.

Auditor's responsibilities for the audit of the financial statements

My responsibility is to audit and report on the financial statements in accordance with the Energy Act 2004.

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs (UK), I exercise professional judgment and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group's and the Nuclear Decommissioning Authority's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management;
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation; and
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

In addition, I am required to obtain evidence sufficient to give reasonable assurance that the income and expenditure reported in the financial statements have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

Other Information

The Authority and the Accounting Officer are responsible for the other information. The other information comprises information included in the annual report, other than the parts of the Accountability Report described in that report as having been audited, the financial statements and my auditor's report thereon. My opinion on the financial statements does not cover the other information and I do not express any form of assurance conclusion thereon. In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

Opinion on other matters

In my opinion:

- the parts of the Accountability Report to be audited have been properly prepared in accordance with Secretary of State directions made under the Energy Act 2004;
- in the light of the knowledge and understanding of the group and the Authority and its environment obtained in the course of the audit, I have not identified any material misstatements in the Performance Report or the Accountability Report; and
- the information given in the Performance Report and the Accountability Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Matters on which I report by exception

I have nothing to report in respect of the following matters which I report to you if, in my opinion:

- adequate accounting records have not been kept or returns adequate for my audit have not been received from branches not visited by my staff; or
- the financial statements and the parts of the Accountability Report to be audited are not in agreement with the accounting records and returns; or
- I have not received all of the information and explanations I require for my audit; or
- the Governance Statement does not reflect compliance with HM Treasury's guidance.

Gareth Davies

21 June 2019

Comptroller and Auditor General

National Audit Office
157-197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Annual accounts

Annual accounts

Consolidated Statement of Comprehensive Net Expenditure
for the year ended 31 March 2019

	note	2019 £m	2018 £m
Expenditure			
Authority administration expenditure	5	**51**	44
Programme expenditure	6	**3,505**	3,670
Adjustments to provisions	7	**(102,208)**	69,461
Depreciation and impairment	8	**58**	100
		(98,594)	73,275
Income	9	**(900)**	(1,064)
Net expenditure before interest and taxation		**(99,494)**	72,211
Interest receivable		**(18)**	(9)
Interest payable		**4**	4
Net interest payable on defined benefit pension schemes	26	**18**	18
Net expenditure before taxation		**(99,490)**	72,224
Taxation	10	**-**	-
Net expenditure after taxation for the year		**(99,490)**	72,224
Other comprehensive expenditure / (income):			
Deficit arising on revaluation of Property, Plant and Equipment	11	**22**	25
Net recognised (gain)/loss on defined benefit pension schemes	26	**(8)**	(81)
Total comprehensive net expenditure for the year		**(99,476)**	72,168

The related notes numbered 1 to 31 form part of these financial statements. Authority refers to the balances within the NDA itself, with NDA Group balances incorporating the Authority and its subsidiaries. Details of subsidiaries are given in note 13.

Authority Statement of Comprehensive Net Expenditure
for the year ended 31 March 2019

	note	2019 £m	2018 £m
Expenditure			
Authority administration expenditure	5	**51**	44
Programme expenditure	6	**3,409**	3,575
Adjustments to provisions	7	**(102,114)**	69,489
Depreciation and impairment	8	**42**	79
		(98,612)	73,187
Income	9	**(850)**	(1,022)
Net expenditure before interest and taxation		**(99,462)**	72,165
Interest receivable		**(1)**	(1)
Interest payable		**–**	–
Net expenditure before taxation		**(99,463)**	72,164
Taxation	10	**–**	-
Net expenditure after taxation for the year		**(99,463)**	72,164
Other comprehensive expenditure / (income):			
Deficit arising on revaluation of Property, Plant and Equipment	11	**22**	25
Actuarial (gain) / loss on defined benefit pension schemes	26	**(2)**	5
Total comprehensive net expenditure for the year		**(99,443)**	72,194

The related notes numbered 1 to 31 form part of these financial statements. Authority refers to the balances within the NDA itself, with NDA Group balances incorporating the Authority and its subsidiaries. Details of subsidiaries are given in note 13.

Consolidated Statement of Financial Position
as at 31 March 2019

	note	2019 £m	2018 restated £m
Non-current assets			
Property, plant and equipment	11	**652**	830
Recoverable contract costs	14	**1,620**	3,346
Finance lease receivables	20	**43**	43
Trade and other receivables	21	**39**	40
Total non-current assets		**2,354**	4,259
Current assets			
Inventories	16	**82**	68
Other investments	19	**450**	374
Finance lease receivables	20	**2**	2
Trade and other receivables	21	**171**	222
Cash and cash equivalents	22	**113**	214
Total current assets		**818**	880
Total assets		**3,172**	5,139
Current liabilities			
Trade and other payables	23	**(1,093)**	(1,463)
Nuclear provisions	24	**(2,735)**	(2,860)
Other provisions	25	**(10)**	(143)
Total current liabilities		**(3,838)**	(4,466)
Total assets less current liabilities		**(666)**	673
Non-current liabilities			
Trade and other payables	23	**(1,696)**	(1,620)
Nuclear provisions	24	**(127,223)**	(230,709)
Other provisions	25	**(127)**	(360)
Defined benefit pension scheme deficits	26	**(798)**	(706)
Total non-current liabilities		**(129,844)**	(233,395)
Net liabilities		**(130,510)**	(232,722)
Taxpayers' equity			
Revaluation reserve		**29**	51
General reserve		**(130,541)**	(232,775)
Total taxpayers' equity		**(130,512)**	(232,724)
Non-controlling interests	27	**2**	2
Total equity		**(130,510)**	(232,722)

The financial statements on pages 90 to 136 were approved by the Board and authorised for issue by the Accounting Officer on 18 June 2019:

D. Peattie

David Peattie
Chief Executive and Accounting Officer
18 June 2019

The related notes numbered 1 to 31 form part of these financial statements. Authority refers to the balances within the NDA itself, with the NDA Group balances incorporating the Authority and its subsidiaries. Details of subsidiaries are given in note 13.

Authority Statement of Financial Position
as at 31 March 2019

	note	2019 £m	2018 restated £m
Non-current assets			
Property, plant and equipment	11	**380**	435
Investments in subsidiaries	13	**259**	259
Recoverable contract costs	14	**1,620**	3,346
Finance lease receivables	20	**43**	43
Trade and other receivables	21	**39**	40
Total non-current assets		**2,341**	4,123
Current assets			
Inventories	16	**34**	29
Finance lease receivables	20	**2**	2
Trade and other receivables	21	**370**	413
Cash and cash equivalents	22	**28**	82
Total assets		**434**	526
Total assets		**2,775**	4,649
Current liabilities			
Trade and other payables	23	**(1,038)**	(1,391)
Nuclear provisions	24	**(2,735)**	(2,855)
Other provisions	25	**(9)**	(141)
Total current liabilities		**(3,782)**	(4,387)
Total assets less current liabilities		**(1,007)**	262
Non-current liabilities			
Trade and other payables	23	**(1,696)**	(1,620)
Nuclear provisions	24	**(127,923)**	(231,211)
Other provisions	25	**(100)**	(334)
Defined benefit pension scheme deficits	26	**(18)**	(20)
Total non-current liabilities		**(129,737)**	(233,185)
Net liabilities		**(130,744)**	(232,923)
Taxpayers' equity			
Revaluation reserve		**4**	26
General reserve		**(130,748)**	(232,949)
Total taxpayers' equity		**(130,744)**	(232,923)

The financial statements on pages 90 to 136 were approved by the Board and authorised for issue by the Accounting Officer on 18 June 2019:

D. Peattie

David Peattie
Chief Executive and Accounting Officer
18 June 2019

The related notes numbered 1 to 31 form part of these financial statements. Authority refers to the balances within the NDA itself, with the NDA Group balances incorporating the Authority and its subsidiaries. Details of subsidiaries are given in note 13.

Statement of Cash Flows
for the year ended 31 March 2019

		NDA Group		Authority	
		2019	2018	**2019**	2018
		£m	£m	**£m**	£m
Cash flows from operating activities					
Net expenditure after taxation for the year	SoCNE	**99,490**	(72,224)	**99,463**	(72,164)
Adjustments for:					
Interest receivable	4	**(18)**	(9)	**(1)**	(1)
Interest payable		**4**	4	**–**	–
Net interest payable on defined benefit pension schemes	26	**18**	18	**–**	–
Excess of pension service costs over cash contributions paid		**77**	95	**–**	–
Depreciation of property, plant and equipment	11	**56**	64	**40**	43
Impairment of property, plant and equipment	11	**-**	36	**-**	36
Revalorisation of advance payments	23	**123**	181	**123**	181
Amortisation of recoverable contract costs	14	**166**	228	**166**	228
Decrease/(Increase) in inventories	16	**(14)**	8	**(5)**	4
Decrease/(Increase) in receivables		**53**	3	**43**	14
Decrease in payables		**(516)**	(370)	**(502)**	(374)
Increase in nuclear provisions impacting net expenditure	7	**(101,633)**	69,618	**(101,539)**	69,644
Decrease in other provisions impacting net expenditure	7	**(575)**	(157)	**(575)**	(155)
Net cash outflow from operating activities		**(2,769)**	(2,505)	**(2,787)**	(2,544)
Cash flows from investing activities					
Interest received	4	**18**	9	**1**	1
Interest paid		**(4)**	(4)	**–**	–
Purchases of property, plant and equipment	11	**(9)**	(28)	**(7)**	(39)
Purchase of investments	19	**(76)**	(18)	**–**	–
Acquisition of shares in subsidiary	13	**-**	–	**-**	(30)
Net cash outflow from investing activities		**(71)**	(41)	**(6)**	(68)
Cash flow from financing activities					
Grants from parent department	SoCTE	**3,391**	3,488	**3,391**	3,488
Surrender of receipts to Consolidated Fund	SoCTE	**(652)**	(863)	**(652)**	(863)
Net cash inflow from financing activities		**2,739**	2,625	**2,739**	2,625
Net increase / (decrease) in cash and cash equivalents		**(101)**	79	**(54)**	13
Cash and cash equivalents at beginning of period	22	**214**	135	**82**	69
Cash and cash equivalents at end of period		**113**	214	**28**	82

Statement of Changes in Taxpayers' Equity
for the year ended 31 March 2019

NDA Group	General £m	Revaluation £m	Total £m
Balance at 31 March 2017	(163,266)	76	(163,190)
Impact of applying IFRS 9	(3)	-	(3)
Restated balance at 1 April 2017	(163,269)	76	(163,193)
Deficit arising on revaluation of PPE	–	(25)	(25)
Gross grants from parent department	3,488	–	3,488
Amounts surrenderable to Consolidated Fund (a)	(851)	–	(851)
Actuarial gain on defined benefit pension schemes	81	–	81
Net expenditure	(72,224)	–	(72,224)
Balance at 31 March 2018	(232,775)	51	(232,724)
Deficit arising on revaluation of PPE	–	(22)	(22)
Gross grants from parent department	3,391	–	3,391
Amounts surrenderable to Consolidated Fund (a)	(655)	–	(655)
Actuarial gain on defined benefit pension schemes	8	–	8
Net expenditure	99,490	–	99,490
Balance at 31 March 2019	(130,541)	29	(130,512)

Authority	General £m	Revaluation £m	Total £m
Balance at 31 March 2017	(163,414)	51	(163,363)
Impact of applying IFRS 9	(3)	-	(3)
Restated balance at 1 April 2017	(163,417)	51	(163,366)
Deficit arising on revaluation of PPE	–	(25)	(25)
Gross grants from parent department	3,488	–	3,488
Amounts surrenderable to Consolidated Fund (a)	(851)	–	(851)
Actuarial loss on defined benefit pension schemes	(5)	–	(5)
Net expenditure	(72,164)	–	(72,164)
Balance at 31 March 2018	(232,949)	26	(232,923)
Deficit arising on revaluation of PPE	–	(22)	(22)
Gross grants from parent department	3,391	–	3,391
Amounts surrenderable to Consolidated Fund (a)	(655)	–	(655)
Actuarial gain on defined benefit pension schemes	2	–	2
Net expenditure	99,463	–	99,463
Balance at 31 March 2019	(130,748)	4	(130,744)

The revaluation reserve is used to record the increases in the fair value of property, plant and equipment carried at valuation and decreases to the extent that such decrease relates to an increase on the same asset previously recognised in taxpayers' equity.

The general reserve is used to record the deficit or surplus arising from the Statement of Comprehensive Net Expenditure, and the deficit or surplus arising on the transfer of assets and liabilities to the NDA from other parts of the public sector.

(a) Surrender of receipts to Consolidated Fund of £655 million (2018: £851 million) included £2 million payable as at 31 March 2019 (2018: £1 million receivable at 31 March 2018). This amount was included within current trade and other payables in the Statement of Financial Position of Group and Authority at 31 March 2019. The amount paid in cash in the year was £652 million (2018: £863 million).

Notes to the financial statements

for the year ended 31 March 2019

1. General information

The NDA is an executive NDPB that was established on 22 July 2004 under the Energy Act 2004 and is currently sponsored by BEIS. The NDA was created with the primary objective of overseeing and monitoring the decommissioning and clean-up of the UK's civil nuclear legacy. The Financial Overview on pages 14 and 15 provide further information on the NDA's operations.

These financial statements are presented in pounds sterling and all values are rounded to the nearest million (£m) except when otherwise indicated.

2. Statement of significant accounting policies

2.1 Basis of preparation

These financial statements have been prepared under the accounts direction issued by the Secretary of State for Energy and Climate Change in accordance with section 26 of the Energy Act 2004. The accounts direction requires compliance with the Government Financial Reporting Manual (FReM) and any other guidance issued by HM Treasury. The NDA has a specific direction in respect of the accounting for waste management assets on an historical cost basis. The accounting policies contained in the FReM apply International Financial Reporting Standards (IFRS) as adapted or interpreted for the public sector context. Where the FReM permits a choice of accounting policy, the accounting policy which is judged to be most appropriate to the particular circumstances of the NDA for the purpose of giving a true and fair view has been selected. The significant accounting policies adopted by the NDA are described below. They have been applied consistently in dealing with items that are considered material to the financial statements, unless otherwise stated.

These financial statements have been prepared on the historical cost basis, except for the revaluation of property, plant and equipment (other than waste management assets). Investments, financial assets and financial liabilities are measured at amortised cost.

The consolidated statement of financial position at 31 March 2019 shows net liabilities of £131 billion (2018: £233 billion). This reflects the inclusion of liabilities falling due in future years which, to the extent that they are not to be met from the NDA's other sources of income, may only be met by future grants in aid from the NDA's sponsoring department, BEIS. Under the normal conventions applying to parliamentary control over income and expenditure, such grants in aid may not be issued in advance of need. Grants in aid for 2019/20, taking into account the amounts required to meet the NDA's liabilities falling due in this year, have already been included in BEIS's estimates, and these have been approved by Parliament. There is no reason to believe that future BEIS sponsorship and future parliamentary approval will not be forthcoming. It has accordingly been considered appropriate to adopt a going concern basis for the preparation of these financial statements.

2.2 Adoption of new and revised Standards

The following new or revised standards were adopted during the year:
IFRS 9 Financial Instruments (see notes 17, 20 and 21)
IFRS 15 Revenue from Contracts with Customers (see notes 2.5, 3 and 9)

The following Standards have been issued but are not yet effective.
IFRS 16 Leases
IFRS 17 Insurance Contracts

The Authority expects that the introduction of IFRS 16 is likely to result in a material increase to non-current assets and current / non-current liabilities for both Authority and NDA Group, resulting from bringing into the Statement of Financial Position the Authority's / Group's operating lease commitments as lessee (see note 28 a).

The Authority has reviewed relevant financial instruments for the purposes of IFRS 9. This has resulted in the reclassification of certain financial instruments as follows:

Financial instrument	Classification pre IFRS 9	Classification post IFRS 9
Financial assets		
Other investments	Fair value through profit or loss (FVTPL)	Fair value through profit or loss (FVTPL)
Non-current finance lease receivable	Loans and receivables	Amortised cost
Non-current other receivables		
Current trade and other receivables		
Current finance lease receivables		
Cash and cash equivalents		
Financial liabilities		
Current trade and other payables	Fair value through profit or loss (FVTPL)	Amortised cost

The revised classification is shown in Note 17.
The Authority has reviewed the carrying value of financial instruments for the expected credit loss on each, for the purposes of IFRS 9. The expected credit loss for the prior reporting period has resulted in a restatement of the trade receivables and finance lease receivables balances in the prior reporting period. The resulting impairment is shown in the Statement of Changes in Taxpayers' Equity for the prior reporting period. The subsequent impairment for the 2018/19 reporting period is shown as a charge to the Statement of Comprehensive Net Expenditure and in note 8. The expected credit losses at the reporting date are shown in notes 20 and 21.

The Authority applied IFRS 15 on a prospective basis from 1 April 2018. The Authority's contracts for the reprocessing of spent fuel and management of spent fuels, wastes and products are very long term by nature and have already been in place for several decades. The extent to which the Authority is able to retrospectively restate the revenue arising from the contracts (as ordinarily required by IFRS 15) is severely limited due to the availability of consistent historical data relating to the contracts and the extent to which the contracts and associated assumptions have changed over time.

The Authority therefore sought and received a derogation from HM Treasury to set aside the requirement to apply IFRS 15 retrospectively. This means that there is no requirement to present restatement adjustments in the first year of application (2018/19) as otherwise required by the transitional disclosure requirements of IFRS 15. No impact on the valuation of contract assets and liabilities arose as a result of the prospective application.

Under the new standard revenue from contracts will be recognised directly on the fulfilment of contractual performance obligations, which in turn will be measured either on the achievement of measurable outputs or over time. The table below summarises the main categories of performance obligations and the previous and new bases of revenue recognition for each:

<table>
<tr><th>Contract type</th><th>Categories of performance obligation</th><th>Significant payment terms</th><th>Previous basis of recognition (pre IFRS 15)</th><th>Basis of recognition (IFRS 15)</th></tr>
<tr><td rowspan="7">Spent fuel reprocessing and associated waste management</td><td>Receipt of spent fuel (performance obligation completed in 2018/19)</td><td rowspan="7">For some contracts, payments have been made in full and are accounted for as payments on account.

For the contract with UK energy producers, the overall underlying contract value is fixed (the only variation in price arise from standard indexation terms) and payments are made according to a contractual payment schedule continuing to 2028. Payments already made by the customer are accounted for as payments on account.</td><td rowspan="7">Proportion of overall cost, incurred in each reporting period; some revenue recognised on units of throughput (including reprocessing and waste treatment)</td><td>Units of throughput - point of receipt of spent fuel</td></tr>
<tr><td>Reprocessing of spent fuel (performance obligation completed in 2018/19)</td><td>Units of throughput - point of fuel shearing</td></tr>
<tr><td>Spent fuel storage (to 2086)</td><td rowspan="5">Evenly over remaining time period of service</td></tr>
<tr><td>Interim storage of wastes (expected to continue to 2025)</td></tr>
<tr><td>Treatment of wastes (expected to continue to 2025)</td></tr>
<tr><td>Storage of treated wastes (to 2038 or 2086 depending on type of waste)</td></tr>
<tr><td>Storage of products (to 2086)</td></tr>
<tr><td>Spent fuel receipt (of spent fuel not for reprocessing)</td><td>Receipt of spent fuel</td><td>Payments are made by the customer when fuel is first utilised, on a volume related basis, and accounted for by the Authority as payments on account until spent fuel is received (and revenue recognised)</td><td>Units of throughput - point of receipt of spent fuel</td><td>Units of throughput - point of receipt of spent fuel</td></tr>
<tr><td>Other contracts for waste and product storage</td><td>Waste and product storage</td><td>For one major contract type, payments have been made in full and are accounted for as payments on account. Others are invoiced and paid annually</td><td>Proportion of overall cost, incurred in each reporting period</td><td>Evenly over remaining time period of service</td></tr>
<tr><td rowspan="2">Storage and destorage of residues</td><td>Storage</td><td rowspan="2">Overall contract values are fixed and payments made according to contractual payment schedules</td><td rowspan="2">Proportion of overall cost, incurred in each reporting period</td><td>Evenly over remaining time period of service</td></tr>
<tr><td>Destorage</td><td>At point of destorage</td></tr>
</table>

Contract type	Categories of performance obligation	Significant payment terms	Previous basis of recognition (pre IFRS 15)	Basis of recognition (IFRS 15)
Legacy waste management	Legacy waste management	Overall contract value fixed and payments have been made in full	Proportion of overall cost, incurred in each reporting period	Revenue recognised in full reflecting that all performance obligations have been deemed to have been met according to the definitions in IFRS 15
	Ongoing legacy waste management	Contract values relate directly to cost of performance, and invoiced annually	Value invoiced in each reporting period	Revenue recognised as invoiced during 2018/19 reporting period. Contractual changes in 2019/20 expected to change this basis
	Waste management	For one major contract type, payments have been made in full	Proportion of overall cost, incurred in each reporting period	Evenly over remaining time
Waste substitution	Initial substitution of waste	Values are determined for each agreement individually, and payment made in full at the point of agreement	In full at point of agreement	In full at point of agreement
	Destorage and return of substituted waste	Payments have been made in full and are accounted for as payments on account	At point of destorage and return of waste	At point of destorage and return of waste
Transfer of ownership of nuclear materials	Transfer of ownership	Values are determined for each agreement individually, and payment made in full at the point of agreement	In full at the point of agreement	In full at the point of agreement
Transportation of nuclear fuel, waste and materials	Transportation of nuclear fuel, waste and materials	Values are determined for each agreement individually, and payment made according to pre-determined payment schedules	Values are determined for each agreement individually, and payment made according to pre-determined payment schedules	At point of service provision
Energy trading	Production of electricity and sales of gas	Values are determined by market demands and rates	At point of sale	At point of sale
Sundry	Various including provision of rechargeable services to third parties	Values determined by cost of providing service	At point of service provision	At point of service provision
Admin and non-programme	Various	Values determined by cost of providing service	At point of service provision	At point of service provision

Therefore under the new standard the Income figure is subject to increased uncertainty as a higher proportion of revenue recognition will be dependent on the performance of key plants at Sellafield in the remainder of their commercial operations (see notes 2.5 and 9 for more details).

In particular the Income figure 2018/19 was highly reliant on the performance of the THORP reprocessing plant in its final year of operations. The Impact of Volatility in THORP output was more significant under IFRS 15 than under previous standards. THORP concluded reprocessing operations during 2018/19 thereby removing this uncertainty from future years.

In order to produce a consistent measurement of fulfilment of the remaining performance obligations under the waste treatment elements of the respective spent fuel reprocessing contracts the Authority has determined that the remaining revenue on overseas reprocessing contracts will be recognised over the remainder of the period in which waste treatment services for all wastes produced by THORP plant will be completed (currently expected to conclude in 2025). This means that the completion of the programme will be treated as a single performance obligation under a single contract and as a result there is a non-recurring impact on the contract loss provision on the Authority's and Group's respective Statements of Financial Position.

If the authority had not applied the portfolio approach to these contracts, the revenue recognised in the period would have been approximately £440 million higher than that reported. The revenue will instead be recognised over the contract term, to the end of 2024/25.

The Authority deems this treatment to be appropriate and necessary given that the Authority is not retrospectively restating revenues under the contracts in question on the basis that:

- a literal interpretation of the Standard may have resulted in the immediate recognition in full, at the point of application and therefore within the reporting period, of the revenue remaining on the overseas reprocessing contracts.
- had the Authority applied retrospective restatement of revenues, this would have been offset by an adjustment to revenues still to be recognised on other reprocessing contracts, as at the point of application
- the offsetting adjustment is not available, and therefore an otherwise literal application of the Standard would produce a result which is not reflective of the overall progress of the waste treatment programme

The Authority has therefore deemed it appropriate and necessary to account for the waste treatment performance obligations within the reprocessing contracts on a portfolio basis (and therefore in practice a single performance obligation) which, while deviating from a literal interpretation of the Standard, is deemed consistent with its intent. In practice this is similar to how income from waste treatment services has been accounted for in the previous periods.

Further information on the application of IFRS 15 is contained in notes 2.5, 3 and 9.

Notes to the financial statements - continued

2.3 Basis of consolidation
The consolidated financial statements incorporate the financial statements of the NDA and entities controlled by the NDA (its subsidiary undertakings) made up to 31 March each year. Control is achieved where the NDA has the power to govern the financial and operating policies of an investee entity so as to obtain benefits from its activities.

All intra-group transactions, balances, income and expenses are eliminated on consolidation.

2.4 Income recognition
Where not otherwise measured and recognised in accordance with IFRS 15 and the NDA's accounting policy on contracts (below), income is measured at the fair value of the consideration received or receivable and represents amounts receivable for goods and services provided in the normal course of business, net of discounts, VAT and other sales related taxes, and electricity purchases relating to short-term balancing of output volume and hedging activities.

2.5 Contracts

Income recognition

Contract income is recognised by reference to the stage of completion of the contract activity at the reporting date. Prior to the implementation of IFRS 15 the Authority's accounting policy for most spent fuel reprocessing and/or waste management contracts was to measure the stage of completion according to the proportion that contract costs incurred for work performed to date bear to the estimated total contract costs.

In accordance with IFRS 15 the Authority has:

- Identified contracts with customers and the contract price still to be recognised at the reporting date (in accordance with the derogation that allows the Authority to set aside the requirement to retrospective restate revenues) under each contract
- Determined the performance obligations under each contract
- Determined the relative value of each performance obligation
- Identified the appropriate basis for measuring the fulfilment of each performance obligation and therefore the recognition of revenue arising from each

Note 3 to the financial statements provides information on significant judgements performed by the Authority in applying IFRS 15, as required in order to determine:

- The expected value of each of the contracts with customers (the transaction price)
- The amounts of the transaction price of each contract to be allocated to each of the performance obligations in the contract
- The timing of satisfaction of performance obligations

Note 9 to the financial statements provides the following information:

- The extent of revenue recognised from contracts with customers
- Disaggregation of said revenue into categories that depict how the nature, timing and uncertainty of cash flows are affected by economic factors
- The aggregate amount of the transaction price allocated to the performance obligations that are wholly or partially unsatisfied
- Explanation of when the Authority expects to recognise the above transaction price as revenue

Note 14 to the financial statements provides information on recoverable contract costs, which comprise two elements:

- historic costs incurred prior to the recognition of revenue on each relevant contract, which constitute financial assets for the purposes of IFRS 15 and are charged to the accounts (amortised) in proportion to revenue recognised in each reporting period
- an estimate of the future costs which will be incurred in fulfilling the performance obligations under each contract which are accounted for under IAS 37 and constitute a subset of the costs included in the nuclear provision (and are presented as equal and opposite asset balances).

Note 23 to the financial statements provides information on payments on account, which are payments made by customers under long term contracts, in advance of the fulfilment of performance obligations. These balances are contract liabilities under IFRS 15.

The Authority will allocate any changes in the transaction price of each contract (including but not limited to the future revalorisation of payments on account balances) to the performance obligations as defined in the initial allocation of the transaction price to performance obligations at 1 April 2018, and in proportion to the allocations made at that time. Where this results in allocation of changes in transaction price to performance obligations already satisfied at the respective reporting date, the resulting allocation to satisfied performance obligations will be recognised as revenue in that reporting period.

Variations in contract work are included to the extent that they have been agreed with the customer.

Treatment of costs

Contract costs are recognised as expenses in the period in which they are incurred.

When it is probable that total contract costs will exceed total contract income, the expected loss is recognised as an expense immediately, being an adjustment to the contract loss provision in notes 7 and 25.

For contracts in progress at the reporting date, where costs still to be incurred exceed amounts received to date the balance is shown under non-current assets as recoverable contract costs. Where amounts received to date exceed costs still to be incurred the balance is shown under trade and other payables as payments received on account.

2.6 Leasing
Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

2.6 (a) The NDA Group as lessor
Amounts due from lessees under finance leases are recognised as receivables at the amount of the Group's net investment in the leases. Finance lease income is allocated to accounting periods so as to reflect a constant periodic rate of return on the Group's net investment outstanding in respect of the leases.

Rental income from operating leases is recognised on a straight-line basis over the term of the relevant lease. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognised on a straight-line basis over the lease term. The aggregate costs of any incentive to enter into an operating lease are also spread on a straight-line basis over the lease term.

2.6 (b) The NDA Group as lessee
Rentals payable under operating leases are charged to the statement of net expenditure on a straight-line basis over the term of the relevant lease. Benefits received and receivable as an incentive to enter into an operating lease are also spread on a straight-line basis over the lease term.

2.7 Foreign currencies
The individual financial statements of each Group entity are presented in the currency of the primary economic environment in which it operates (its functional currency). For the purpose of the consolidated financial statements, the results and financial position of each Group entity are expressed in pounds sterling, which is the functional currency of the NDA, and the presentation currency for the consolidated financial statements.

In preparing the financial statements of the individual reporting entities, transactions in currencies other than the entity's functional currency (foreign currencies) are recorded at the rates of exchange prevailing on the dates of the transactions or at the contracted rate if the transaction is covered by a forward foreign exchange contract. At each reporting date, monetary assets and liabilities that are denominated in foreign currencies are retranslated at the rates prevailing on the reporting date. Non-monetary items carried at fair value that are denominated in foreign currencies are translated at the rates prevailing at the date when the fair value was determined. Non-monetary items that are measured in terms of historical cost in a foreign currency are not retranslated. Exchange differences are recognised in the statement of net expenditure in the period in which they arise.

For the purpose of presenting consolidated financial statements, the assets and liabilities of the Group's foreign operations are translated at exchange rates prevailing on the reporting date. Income and expense items are translated at the average exchange rates for the period, unless exchange rates fluctuate significantly during that period, in which case the exchange rates at the date of transactions are used. Exchange differences arising, if any, are classified as equity and recognised in the Group's general reserve. Such translation differences are recognised as income or as expenses in the period in which the operation is disposed of.

The turnover, assets and liabilities of the foreign operations included within these consolidated financial statements are minor in the context of the Group as a whole and therefore the potential impact of any foreign currency movements are deemed to be negligible

2.8 Retirement benefit costs
The Group participates in various pension schemes, both defined contribution and defined benefit schemes.

For defined contribution schemes the amount charged to operating costs is the contributions payable in the year.
For defined benefit schemes, the liability recognised in the statement of financial position is the present value of the defined benefit obligation at the reporting date less the fair value of scheme assets, together with any adjustments for unrecognised past service costs. Any amounts recoverable from third parties are recognised as separate assets.

The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high quality corporate bonds that have terms to maturity approximating to the terms of the related pension liability.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited in other comprehensive income in the period in which they arise. Past service costs are recognised immediately in operating costs to the extent that the benefits are already vested, and otherwise are amortised on a straight-line basis over the average period until the benefits become vested. The interest cost and the expected return on assets are shown as a net amount of interest costs.

Pension scheme assets are recognised to the extent that they are recoverable and pension scheme liabilities are recognised to the extent that they reflect a constructive or legal obligation.

The Authority also makes contributions to multi-employer defined benefit schemes, for which it is ultimately responsible, but where it is not possible to identify its share of underlying assets and liabilities. Consequently, the Authority's participation in these schemes is accounted for as if they were defined contribution schemes, as permitted under IAS 19.

Further information on the PCSPS and alpha pension schemes can be found within the Remuneration and People Report on pages 67 to 77.

Notes to the financial statements - continued

2.9 Research and development expenditure
Expenditure on research activities is recognised as an expense in the period in which it is incurred.

2.10 Taxation
Deferred tax assets are currently not recognised as the NDA does not anticipate a taxable surplus arising in the foreseeable future. Deferred tax liabilities are currently not recognised as they are offset by deferred tax assets.

VAT is accounted for in that amounts are shown net of VAT except:
(i) Irrecoverable VAT is charged to profit or loss, and included under the heading relevant to the type of expenditure
(ii) Irrecoverable VAT on the purchase of an asset is included in the capitalised purchase cost of the asset

The net amount due to, or from, HM Revenue & Customs in respect of VAT is included within payables or receivables respectively within the statement of financial position.

2.11 Property, plant and equipment
Property, plant and equipment includes assets purchased directly by the Group and assets for which the legal title transferred to the Group under Transfer Scheme arrangements pursuant to the Energy Act 2004.

Assets on designated nuclear sites are only recognised where two criteria are met. Firstly the economic element of the asset's value at the reporting date must exceed £100,000, and secondly the proportion of the asset relating to commercial activity should exceed 10%.

Assets on non-designated sites are only recognised where there value exceeds £10,000.

In line with the accounts direction issued by the Secretary of State for Energy and Climate Change, waste management assets are excluded from the FReM requirement to carry PPE at fair value due to lack of reliable and cost effective revaluation methodology. Such waste management assets are therefore carried at cost less accumulated depreciation and any impairment charges.

For property, plant and equipment carried at valuation, revaluations are currently performed on an annual basis to ensure that the carrying amount does not differ materially from that which would be determined using fair values at the reporting date. This includes assets used to support commercial activities, property located outside nuclear licensed site boundaries, and property located inside nuclear licensed site boundaries where a reliable and cost effective revaluation methodology exists. The categories of property, plant and equipment subject to revaluation are Land and Buildings.

Any accumulated depreciation at the date of revaluation is eliminated and the resulting net amount restated to equal the revalued amount. Any revaluation increase arising is credited to the revaluation reserve, except to the extent that it reverses a revaluation decrease for the same asset previously recognised as an expense, in which case the increase is credited to profit or loss to the extent of the decrease previously charged. A decrease in carrying amount arising on revaluation is charged as an expense to the extent that it exceeds the balance, if any, held in the revaluation reserve relating to a previous revaluation of that asset. On the subsequent de-recognition of a revalued asset, the attributable revaluation surplus remaining in the revaluation reserve is transferred directly to the general reserve.

Where economic facilities have been commissioned, the estimated cost of decommissioning the facilities is recognised, to the extent that it is recognised as a provision under IAS 37 'Provisions, Contingent Liabilities and Contingent Assets', as part of the carrying value of the asset and depreciated over the useful life of the asset. All other decommissioning costs are expensed as incurred.

Depreciation is charged so as to write off the cost or valuation of assets, other than assets under construction, to their residual values over their useful lives, using the straight-line method, on the following bases:

Land	Not depreciated
Buildings	10 to 60 years
IT equipment	3 years
Fixtures and fittings	3 to 10 years
Plant and equipment	10 to 30 years
Transport equipment	4 to 14 years

The exceptions to the above are:

- in the depreciation of certain shipping assets which is calculated on a usage, rather than straight-line, basis; and
- in the depreciation of Plant and equipment for which the remaining useful commercial life of the assets is less than 10 years (such assets are depreciated over the remaining useful commercial life)

Assets under construction are not depreciated until brought in to use.

Residual values and useful lives are reviewed, and adjusted if appropriate, at each reporting date.

2.12 Investments in subsidiaries
Investments in subsidiaries are stated at cost less, where appropriate, provision for impairment.

2.13 Impairment of non-financial assets
At each reporting date, the Group reviews the carrying amounts of its non-financial assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where the asset does not generate cash flows that are independent from other assets, the Group estimates the recoverable amount of the cash-generating unit to which the asset belongs.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset (or cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or cash-generating unit) is reduced to its recoverable amount. An impairment loss is recognised as an expense immediately, unless the relevant asset is carried at a revalued amount, in which case the impairment loss is treated as a revaluation decrease.

Where an impairment loss subsequently reverses, the carrying amount of the asset (or cash-generating unit) is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset (or cash-generating unit) in prior years. A reversal of an impairment loss is recognised as income immediately, unless the relevant asset is carried at a revalued amount, in which case the reversal of the impairment loss is treated as a revaluation increase.

2.14 Inventories

Inventories are stated at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those overheads that have been incurred in bringing the inventories to their present location and condition. Cost is calculated using the weighted average method. Net realisable value represents the estimated selling price less all estimated costs of completion and all costs to be incurred in marketing, selling and distribution.

Reprocessed uranic material is held at nil value, pending development of long term options and cost estimates for disposition of this material, and is disclosed as a contingent liability in note 29.

2.15 Financial instruments

Financial assets and financial liabilities are recognised in the statement of financial position when the Group becomes a party to the contractual provisions of the instrument.

2.15 (a) Financial Assets

All financial assets are recognised and derecognised on a trade date where the purchase or sale of a financial asset is under a contract whose terms require delivery of the investment within the timeframe established by the market concerned, and are initially measured at fair value.

Finance lease receivables, trade and other receivables, and cash and cash equivalents, that have fixed or determinable payments that are not quoted in an active market are subsequently measured at amortised cost using the effective interest rate method, less any impairment. Interest income is recognised by applying the effective interest rate, except for short-term receivables when the recognition of interest would be immaterial.

Other investments are measured at fair value through profit or loss.

The effective interest rate method is a method of calculating the amortised cost of a financial asset and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset or, where appropriate, a shorter period, to the net carrying value of the financial asset.

Impairment of financial assets

Financial assets are assessed for indicators of impairment at each reporting date. Financial assets are impaired where there is objective evidence that, as a result of one or more events that occurred after the initial recognition of the financial asset, the estimated future cash flows of the asset have been impacted.

The carrying amount of the financial asset is reduced by the impairment loss directly for all financial assets with the exception of trade receivables and finance lease receivables, where the carrying amount is reduced through the use of an expected credit loss provision. When a financial instrument is considered uncollectible, it is written off against the expected credit loss provision.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed through the statement of net expenditure to the extent that the carrying amount of the financial asset at the date the impairment is reversed does not exceed what the amortised cost would have been had the impairment not been recognised.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand and demand deposits, and other short-term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value.

De-recognition of financial assets

Financial assets are derecognised only when the rights to receive cash flows from the assets have expired or have been transferred and the Group has transferred substantially all risks and rewards of ownership.

2.15 (b) Financial Liabilities

Financial liabilities are classified as financial liabilities at amortised cost.

De-recognition of financial liabilities

Financial liabilities are derecognised when, and only when, the Group's obligations are discharged, cancelled or they expire.

2.16 Provisions

Provisions are recognised when the Group has a present obligation as a result of a past event, and it is probable that the Group will be required to settle that obligation. Provisions are the Authority's best estimate of the expenditure required to settle the obligation at the reporting date, and are discounted to present value where the effect is material.

Notes to the financial statements - continued

Nuclear Provisions
The financial statements include provisions for the NDA's obligations in respect of nuclear liabilities, being the costs associated with the nuclear decommissioning of designated sites. These are the licensed nuclear sites designated to the NDA by the Secretary of State under powers provided by the Energy Act 2004 and operated under contract to the NDA by the SLCs. These provisions are based on the latest assessments of the processes and methods likely to be used in the future, and represent best estimates of the amount required to discharge the relevant obligations. The NDA's obligations are reviewed on a continual basis and provisions are updated accordingly.

Where some or all of the expenditure required to settle a provision is expected to be recovered from a third party, in accordance with IAS 37 'Provisions, Contingent Liabilities and Contingent Assets', the recoverable amount is treated as a non-current asset. Provision charges in the Statement of Comprehensive Net Expenditure are shown net of changes in the amount recoverable from customers. Provision changes are accounted for in the year in which they arise.

The Nuclear Provision and recoverable balances are expressed at current price levels and discounted in accordance with guidance issued by HM Treasury. In reporting periods up to and including 2017/18 HM Treasury determined a real terms discount rate to be applied in calculating provisions. A real terms rate combines a nominal discount rate and an implied inflation rate.

From 2018/19 onwards guidance issued by HM Treasury determines a nominal discount rate, and recommends (in what is termed a rebuttable presumption) an implied inflation rate based on forecasts of Consumer Price Index (CPI) inflation made by the Office of Budget Responsibility (OBR). Reporting entities are able to select and apply an implied inflation rate which differs from the recommended rate where this can be demonstrated to be clearly more applicable to the underlying nature of the entity's cash flows.

The Authority has determined that, based on inflation experienced in its cash flows in recent years and future expectations, the implied inflation rate recommended by HM Treasury is appropriate for use in calculating its provisions.

	Time Period	Nominal discount rate	Implied inflation rate	Real terms discount rate	Equivalent rate in 2017/18
Short term	Between 0 and up to and including 5 years	0.76%	2.10%	-1.34%	-2.42%
Medium term	After 5 and up to and including 10 years	1.14%	2.10%	-0.96%	-1.85%
Long term	After 10 and up to and including 40 years	1.99%	2.10%	-0.11%	-1.56%
Long term	Exceeding 40 years	1.99%	2.10%	-0.11%	-1.56%

The application of the HM Treasury guidance produces a substantial decrease in the discounted nuclear provision, due mainly to the implied inflation rate element being lower than that (typically circa 3%) used by HM Treasury to determine the real terms rates in previous years. The lower implied inflation rate produces a less negative real terms discount rate and therefore a significant reduction in the discounted value of the provision.

Provision movement expenditure in the statement of comprehensive net expenditure includes the adjustments necessary to unwind one year's discount and restate the liabilities to current price levels. The movement also includes the adjustments arising from the change in discount rates described.

2.17 Grants from parent department
In accordance with the FReM the NDA prepares its financial statements showing grants received from BEIS as credited to the general reserve, and as financing in the statement of cash flows. Grants are received gross from BEIS and receipts are surrendered separately.

2.18 Contractor costs
Contractor costs are defined as payments to contractors relating to the core NDA programme (work performed on behalf of NDA by contractors) adjusted to eliminate payments made between those contractors. Contractor costs are recognised as an expense under programme expenditure within the Statement of Comprehensive Net Expenditure, in the period to which they relate.

3. Critical accounting judgements and key sources of estimation uncertainty
In the application of the NDA's accounting policies, which are described in note 2, the Authority is required to make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates. The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Critical Judgements in Applying the NDA's Accounting Policies
The following are the critical judgements, apart from those involving estimations (which are dealt with separately below), that management has made in the process of applying the NDA's accounting policies and that have the most significant effect on the amounts recognised in the financial statements.

Income recognition
The Authority applied IFRS 15 at 1 April 2018, and in doing so was required to perform a number of significant accounting judgements. These judgements, the methods employed in determining them, and the associated uncertainties are described below. The judgements have been made on a prospective basis from the application date onwards, in accordance with the Authority's derogation from HM Treasury to set aside the retrospective restatement requirements of the standard (described in note 2).

The expected value of each of the contracts with customers (the transaction price).

The Authority has determined the transaction price of each contract on a prospective basis at 1 April 2018 (being the total expected price of the contract less the revenue recognised in prior periods). The transaction price of each contract comprises the total payments made on account and the total of future cash flows from the customer. In determining the latter the Authority has determined that future cash flows will not be subject to significant variation from existing contractual terms. This is on the basis that the Authority does not currently anticipate significant discounts, returns, refunds or other types of variable consideration to apply to the contracts other than the indexation of cash flows as set out in contracts as applicable. Where such indexation arises in future reporting periods, an adjustment to the contract price will be applied in that period.

The amounts of the transaction price of each contract to be allocated to each of the performance obligations in the contract.

In recognition of the complexity of the Authority's major long term contracts, which typically do not feature standalone services with discreet prices the Authority has allocated the transaction price of each contract to the performance obligations in that contract through the estimation of the expected future cost of fulfilling each performance obligation, and subsequently allocating the transaction price in proportion to the future cost of each. In doing so the Authority determines that any difference between the price and cost of each contract (notional profit or loss) will be applied to each performance obligation in proportion to the cost of fulfilment.

The basis of determining the cost of each performance obligation requires significant judgement on future cost forecasts. These are derived from and consistent with the cost estimates used to determine the Authority's nuclear provision and subject to the same estimation uncertainties described below. Specifically in respect of the costs of fulfilling the performance obligations in the applicable contracts, the estimates rely on:

- judgements of the continued operation of certain plants and services, the conclusion of certain works programmes, and other assumed milestones.
- judgements of the appropriate allocation of costs to individual performance obligations based on estimates of the extent of capacity, utilisation of other measure of service provision as they apply to each contract and the performance obligations therein.

In accordance with the requirements of IFRS 15 the above determinations were made for existing contracts at the point of application of the standard and will not be revised for future reporting periods. Determinations will be made for new contracts at the point of inception.

The timing of satisfaction of performance obligations

The Authority has determined that performance obligations will be satisfied in accordance with contractually defined timescales, and in accordance with strategic assumptions implicit in the site lifetime plans. Examples of the assumed timing of satisfaction of performance obligations include that the Authority:

Notes to the financial statements - continued

- satisfied its performance obligations in respect of the receipt of spent fuel intended for reprocessing, and the reprocessing thereof, upon cessation of reprocessing operations at THORP at Sellafield and effective closure of the plant in the reporting period of 2018/ 19, and therefore that the transaction price allocated to these performance obligations was recognised in full in 2018/19
- will continue to store spent fuels, waste, products and other materials in line with the respective storage periods contained in each contract, that the associated performance obligation will be satisfied over time, and therefore that the transaction price allocated to these performance obligations will be recognised as revenue evenly over the respective time periods
- will continue to provide services for the interim storage of wastes produced by spent fuel reprocessing and the subsequent treatment of said wastes, concluding in 2025, that these performance obligations will be satisfied evenly over time, and therefore that the transaction price allocated to these performance obligations will be recognised as revenue evenly over the period to 2025. This judgement assumes and relies upon the continued availability and performance of waste treatment plants at Sellafield and a significant disruption in plant operations and/or change in duration of the remaining waste treatment programme would require the Authority to review and potentially amend its assumptions on the timing of the satisfaction of this performance obligation. For example a significant unplanned temporary halt to operations in a future reporting period may reduce the revenue recognised in that period.
- will continue to receive spent fuel which is not intended for reprocessing, and in doing so will assume title of ownership for said fuel at the point in time when it is received by the Authority, therefore that the transaction price of the contract will be allocated to a single performance obligation, and therefore that the transaction price will be recognised as revenue in proportion to the volume of spent fuel received and taken into ownership in each reporting period, relative to the total volume of spent fuel expected to be received and taken into ownership for the remainder of the duration of the contract

The costs to fulfil contracts with customers

The Authority has determined the remaining costs of fulfilling each contract, prospectively at the point of application, comprising the following and has applied judgements as described:

- costs incurred prior to contract inception have been estimated in previous reporting period, and amortised in proportion to the revenue recognised in each reporting period, relative to the total revenue still to be recognised. The respective balances for each contract are defined as ‘contract assets’ under IFRS 15 and are disclosed at note 14.
- costs expected to be incurred in fulfilling the remaining performance obligations for each contract are estimated as described above, are stated at note 14 and will be expensed in each reporting period as they arise. The balances are deemed financial assets under IAS 37 and offset against costs provided in the nuclear provision at note 24.

In addition to the above, costs incurred in the acquisition of property, plant and equipment required to fulfil the contracts are capitalised, depreciated and otherwise valued, in accordance with the Authority’s accounting policies and stated in total at note 11.

Further information on the application of IFRS 15 is contained in Note 9.

Key Sources of Estimation Uncertainty

The key assumptions concerning the future, and other key sources of estimation uncertainty at the reporting date, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are discussed below.

Impairment of property, plant and equipment

Impairment is measured by comparing the carrying value of the asset or cash-generating unit with its recoverable amount. The NDA has therefore reviewed the asset base and all assets are reviewed for evidence of impairment. Given the ageing asset base this calculation has a degree of uncertainty within it. The carrying amount of property, plant and equipment at the reporting date was £652 million.

Nuclear Provisions

The nuclear provision represents the best estimate of the costs of delivering the NDA objective of decommissioning the plant and equipment on each of the designated nuclear licensed sites and returning the sites to pre-agreed end states in accordance with the published strategy. This programme of work will take until 2137. The estimates are necessarily based on assumptions of the processes and methods likely to be used to discharge the obligations, reflecting a combination of the latest technical knowledge available, the requirements of the existing regulatory regime, Government policy and commercial agreements. Given the very long timescale involved, and the complexity of the plants and material being handled, considerable uncertainty remains in the cost estimate particularly in the later years.

In preparing the estimate of the cost of decommissioning the designated sites, the NDA has focussed in particular on the first 20 years, which represents £50 billion out of the total £131 billion provision (2018: £56 billion out of £234 billion). In undiscounted terms it represents £48 billion out of a total of £124 billion (2018: £47 billion out of £121 billion).

As part of the preparation of the financial statements, the principal assumptions and sensitivities for the cost estimates have again been updated and reviewed by the NDA executive and, where appropriate, updates to the estimates have been made to reflect changed circumstances and more recent knowledge.

In preparing the best estimate of the provision required to settle the NDA obligations, it is recognised that there remains a significant degree of inherent uncertainty in the future cost estimates. Should outcomes differ from assumptions in any of the following areas, this may require a material adjustment to the carrying amount of the Nuclear Provision and related assets and liabilities:

- potential changes in the NDA funding profile, requiring the tailoring of expenditure across the estate to ensure the right balance between addressing high risk, hazard and affordability; for example emanating from either economic conditions or changes in funding resulting from the next Government Spending Review
- the length of time over which the necessary programme of work will be delivered – stretching out to 2137
- interdependencies between programmes of work both within SLCs and across SLC boundaries. For example, a shortage of flasks for transport of spent fuel from the Magnox power stations to Sellafield could delay defueling and increase costs at Magnox, and also impact the production schedule and direct operations costs at Sellafield
- uncertainty over the future location of the planned Geological Disposal Facility (GDF) and the timing of its availability
- a lack of detailed information on the design of the Legacy Ponds and Silos at Sellafield and the exact quantities and chemical composition of the historical wastes held in them, resulting in potential significant uncertainty in both the process and costs of dealing with these materials
- uncertainty over future Government policy positions and potential regulatory changes
- possible technological advances which may occur which could impact the work to be undertaken to decommission and clean up the sites
- Changes to the decommissioning strategy for the Magnox sites, which are currently being developed for consideration but not yet reflected in the estimate

Government has indicated that the preferred policy for management of plutonium is for reuse. Any final decision is conditional on business case approval for reuse of the material. Following review of the likely costs of the preferred policy, and the credible alternative of storage and disposal in the long-term, a prudent estimate of £6.7 billion (discounted) has been included within the Provision.

4. Operating segments

For management purposes, the NDA is currently organised into various operating units, which are grouped according to activity type. The segmental analysis in the following table presents the net expenditure for each of the continuing operations.

NDA Group 2019	Sellafield reprocessing and transport £m	Magnox electricity generation and research sites £m	Dounreay site restoration £m	Waste management £m	Springfields and Capenhurst £m	NDA admin and other non-programme £m	Subsidiaries and Group adjustments £m	**Total 2019 £m**
Authority administration expenditure	–	–	–	–	–	51	–	**51**
Programme expenditure	2,367	574	202	129	56	81	96	**3,505**
Decommissioning costs charged to nuclear provision	(1,673)	(556)	(188)	(72)	(110)	–	–	**(2,599)**
Decommissioning costs charged to other provisions	(164)	–	–	–	–	–		**(164)**
Nuclear Provision increase/(decrease)	(63,830)	(20,627)	291	(13,401)	(1,373)	–	(94)	**(99,034)**
Other provisions increase/(decrease)	(411)	–	–	–	–	–	-	**(411)**
Adjustments to provisions	(66,078)	(21,183)	103	(13,473)	(1,483)	–	(94)	**(102,208)**
Depreciation and impairment	40	–	–	–	–	2	16	**58**
Income (a)	(813)	(7)	(1)	(6)	–	(23)	(50)	**(900)**
Interest payable	–	–	–	–	–	–	22	**22**
Interest receivable	–	–	–	–	–	(1)	(17)	**(18)**
Net expenditure / (income) from continuing operations for the year before taxation	(64,484)	(20,616)	304	(13,350)	(1,427)	110	(27)	**(99,490)**

(a) See note 9 for commentary on revenue from contracts. Income in 'subsidiaries and group adjustments' includes revenue from rail and marine transport services and property rental

(b) The basis for accounting for transactions between reportable segments is given in note 30

(c) There have been no changes from the prior period to the measurement methods used to determine reported segment net expenditure

NDA Group 2018	Sellafield reprocessing and transport £m	Magnox electricity generation and research sites £m	Dounreay site restoration £m	Waste management £m	Springfields and Capenhurst £m	NDA admin and other non-programme £m	Subsidiaries and Group adjustments £m	Total 2018 £m
Authority administration expenditure	–	–	–	–	–	44	–	44
Programme expenditure	2,474	588	208	110	88	107	95	3,670
Decommissioning costs charged to nuclear provision	(1,703)	(707)	(182)	(55)	(94)	–	–	(2,741)
Decommissioning costs charged to other provisions	(174)	–	–	–	–	–	(2)	(176)
Nuclear Provision increase/(decrease)	47,248	13,745	175	9,471	1,746	–	(26)	72,359
Other provisions increase/(decrease)	19	–	–	–	–	–	-	19
Adjustments to provisions	45,390	13,038	(7)	9,416	1,652	–	(28)	69,461
Depreciation and impairment	79	–	–	–	–	–	21	100
Income (a)	(814)	(12)	(1)	(5)	–	(190)	(42)	(1,064)
Interest payable	–	–	–	–	–	–	22	22
Interest receivable	–	–	–	–	–	(1)	(8)	(9)
Net expenditure / (income) from continuing operations for the year before taxation	47,129	13,614	200	9,521	1,740	(40)	60	72,224

(a) See note 9 for commentary on revenue from contracts. Income in 'subsidiaries and group adjustments' includes revenue from rail and marine transport services and property rental

(b) The basis for accounting for transactions between reportable segments is given in note 30

(c) There were no changes from the prior period to the measurement methods used to determine reported segment net expenditure

Geographical information

The NDA Group's income is attributed to countries on the basis of the customer's location, as follows:

	2019 £m	2018 £m
United Kingdom	**655**	613
Germany	**7**	101
Japan	**217**	139
Italy	**7**	197
Other countries	**14**	14
Total income	**900**	1,064

The Group's non-current assets are primarily located or based in the United Kingdom.

5. Authority administration expenditure

Authority	2019 £m	2018 £m
Staff costs (see Remuneration and People Report)	**31**	26
Administration costs	**17**	15
Rentals under operating leases – other	**3**	3
Auditors' remuneration	**–**	–
	51	44

Directors' emoluments are included in the above figures and can be seen in the Remuneration and People Report on pages 67 to 77.

Auditors' remuneration represents fees payable to the NAO for the audit of the Authority and the NDA Group and amounted to £330,000 (2018: £340,000). No other remuneration has been paid to the NAO.

6. Programme expenditure

	NDA Group		Authority	
NDA Group & Authority	2019 £m	2018 £m	2019 £m	2018 £m
Contractor and subsidiary costs (a), (b)	**3,068**	3,100	**3,003**	3,024
Amortisation of recoverable contract costs (see note 14)	**166**	228	**166**	228
Revalorisation of advance payments (see note 23)	**123**	181	**123**	181
Fees payable to SLCs	**44**	56	**44**	56
Trading costs	**38**	36	**38**	36
Rentals under operating leases – other	**29**	21	**–**	–
Research and development costs	**14**	11	**8**	7
Insurance (c)	**9**	-	**16**	6
Skills and socio-economic development programme	**7**	3	**7**	3
Release of fees previously accrued	**(24)**		**(24)**	
Release of pension costs previously accrued	**(15)**	-	**(15)**	-
Material title transfer	**-**	18	**–**	18
Dividend payable to minority interest	**2**	1	**-**	-
Information Governance	**15**	5	**15**	5
Cyber Security	**11**	3	**11**	3
Plutonium Management Strategy	**7**	2	**7**	2
Office accommodation relocation	**2**	-	**2**	-
Other costs	**9**	5	**8**	6
Programme expenditure	**3,505**	3,670	**3,409**	3,575

a) Contractor and subsidiary costs shown are after deduction for capitalisation of £7 million (2018: £9m) as Property, Plant & Equipment, and deduction for payments between contractors.

(b) Contractor and subsidiary costs include auditors' remuneration payable for the audit of the NDA subsidiary companies amounting to £258,835 (2018: £321,592).

(c) Insurance costs in both Authority and NDA Group for 2017/18 are shown after deduction of a £4 million adjustment relating to 2016/17.

Notes to the financial statements - continued

7. Adjustments to provisions

NDA Group & Authority	NDA Group 2019 £m	NDA Group 2018 £m	Authority 2019 £m	Authority 2018 £m
Movement in nuclear provisions:				
Provided for in the year (see note 24)	**(95,410)**	73,623	**(95,408)**	73,622
In-year group provision adjustment (see note 24)	**(92)**	(27)	**–**	–
Unwinding of discount (see note 24)	**(3,532)**	(1,237)	**(3,532)**	(1,237)
	(99,034)	72,359	**(98,940)**	72,385
Release of provision (see note 24)	**(2,599)**	(2,741)	**(2,599)**	(2,741)
	(101,633)	69,618	**(101,539)**	69,644
Movement in other provisions:				
Provided for in the year (see note 25)	**(396)**	35	**(396)**	35
Unwinding of discount (see note 25)	**(15)**	(16)	**(15)**	(16)
	(411)	19	**(411)**	19
Release of provision (see note 25)	**(164)**	(176)	**(164)**	(174)
	(575)	(157)	**(575)**	(155)
Total provisions movement	**(102,208)**	69,461	**(102,114)**	69,489

8. Depreciation and impairments

NDA Group & Authority	NDA Group 2019 £m	NDA Group 2018 £m	Authority 2019 £m	Authority 2018 £m
Depreciation of PPE (see note 11)	**56**	64	**40**	43
Impairment of PPE (see note 11)	**-**	36	**-**	36
Impairment of financial instruments for expected credit loss (see notes 20 and 21)	**2**	-	**2**	-
	58	100	**42**	79

9. Income

NDA Group & Authority	NDA Group 2019 £m	NDA Group 2018 £m	Authority 2019 £m	Authority 2018 £m
Spent fuel reprocessing and associated waste management	**346**	347	**346**	347
Spent fuel receipt	**226**	243	**226**	243
Other contracts for waste and product storage	**55**	55	**55**	55
Storage and destorage of residues	**4**	26	**4**	26
Waste substitution (destorage and return of substituted waste)	**-**	63	**-**	63
Revenue from major contracts (continuing)	**631**	**734**	**631**	**734**
Legacy Waste management	**134**	10	**134**	10
Waste substitution (initial substitution agreement)	**-**	182	**-**	182
Revenue from major contracts (non-recurring)	**134**	**192**	**134**	**192**
Transportation of nuclear fuel, waste and materials	**86**	102	**40**	62
Energy trading	**7**	11	**7**	11
Sundry	**22**	16	**15**	14
Admin / non-programme	**17**	8	**20**	8
Other contracts	**132**	**137**	**82**	**95**
Revenue from contracts with customers	**897**	**1,063**	**847**	**1,021**
Other revenues (rental income)	**3**	1	**3**	1
Total revenues	**900**	**1,064**	**850**	**1,022**

The total revenue from contracts with customers totalled £897 million (2018: £1,063 million) of which:

- £631 million (2018: £734 million) was recognised on major contracts which will continue beyond the reporting date
- £134 million (2018: £192 million) was recognised on non-recurring major contracts which concluded during the reporting period.
- £132 million (2018: £137 million) was recognised on other contracts

The Authority's major contracts with customers, the main performance obligations remaining on each contract and the factors affecting future cash flows and timing of revenue recognition can be summarised as follows:

Contract type and customer(s)	Main categories of performance obligation	Factors potentially affecting future cash flows and revenue recognition
Spent fuel reprocessing and associated waste management Customer(s): Nuclear energy producers in the UK and overseas	Receipt of spent fuel (concluded in 2018/19)	N/a – performance obligations completed
	Spent fuel reprocessing (concluded in 2018/19)	N/a – performance obligations completed
	Storage of spent fuel not reprocessed (to 2086)	Overall contract value is materially certain, and timing of recognition is certain (corresponds directly to contracted storage period)
	Interim storage of wastes (expected to continue to 2025)	Overall contract value is materially certain. Revenue is recognised over time, and period of recognition is dependent on future performance of waste management plants
	Treatment of wastes (expected to continue to 2025	Overall contract value is materially certain. Revenue is recognised over time, and period of recognition is dependent on future performance of waste management plants
	Storage of treated wastes (to 2038 or 2086 depending on type of material)	Overall contract value is materially certain, and timing of recognition is certain (corresponds directly to contracted storage periods)
	Storage of products (to 2086)	Overall contract value is materially certain, and timing of recognition is certain (corresponds directly to contracted storage period)
Spent fuel receipt and management Customer(s): Nuclear energy producers in the UK	Receipt of spent fuel, currently expected to continue until 2034	Overall contract value dependent on volume of spent fuel produced by customer Timing of revenue recognition dependent on ability of customer to consign spent fuel and on ability of Authority to receive spent fuel
Storage and destorage of residues Customer(s): Nuclear energy producers overseas	Storage of residues, currently expected to continue until 2025	Contract values may vary according to storage periods required by customers
	Subsequent destorage of residues, currently expected to continue until 2023	Contract values may vary according to storage periods required by customer Timing of revenue recognition dependent on ability of Authority to destore residues and on ability of customer to receive residues

Contract type and customer(s)	Main categories of performance obligation	Factors potentially affecting future cash flows and revenue recognition
Waste substitution Customer(s): Nuclear energy producers overseas	Destorage and transportation of wastes	Contract value is materially certain. Timing of revenue recognition dependent on ability of Authority to destore wastes and on ability of customer to receive wastes
Transportation of nuclear fuel, waste and materials	Transportation of nuclear fuel, waste and materials	Availability of transportation capacity and customer ability and readiness to receive nuclear fuel, waste and materials; customer demand for transportation services
Energy trading	Production of electricity and sales of gas	Performance of electricity producing plants
Sundry	Various including provision of rechargeable services to third parties	Continued demand for services.
Admin / non programme	Various	Continued demand for services

The key uncertainty in the Authority's revenue forecasts is the volume and timing of spent fuel which is received and not intended for reprocessing. There is uncertainty in the overall value of the contract because it is directly related to the volume of spent fuel produced by the customer. There is uncertainty in the timing of revenue recognition in each reporting period because revenue is recognised at the point of receipt of spent fuel, therefore the revenue recognised in each reporting period is directly related to the volume of fuel received in that reporting period. The volume of fuel received is subject to a number of uncertain external factors which are not entirely within the control of the Authority.

The table shows the main types of contract, the main areas of performance obligations therein, and for each category:

- the revenue recognised in the reporting period [A]:
- the revenue expected to be recognised in future reporting periods (being the aggregate amount allocation to performance obligations that are wholly or partially unsatisfied at the reporting date) [B]
- an indication of when the Authority expects to recognise the remaining contract price

Contract type	Categories of performance obligation	[A] £m	[B] £m	Of which £m:		
				2019-2025	2026- 2038	2039-2087
Spent fuel reprocessing and associated waste management	Receipt of spent fuel	30	-	-	-	-
	Spent fuel reprocessing	140	-	-	-	-
	Spent fuel storage	10	709	63	135	511
	Interim storage of wastes	83	496	496	-	-
	Treatment of wastes	62	370	370	-	-
	Storage of treated wastes	4	174	24	51	99
	Storage of products	17	844	100	216	528
Spent fuel receipts	Receipt of spent fuel	226	4,421	1,869	2,552	-
Other storage contracts	Storage of materials	55	1,161	422	536	203
Storage and destorage of residues	Storage	2	4	4	-	-
	Destorage	2	32	32	-	-
Waste substitution	Destorage	-	70	70	-	-
Legacy waste		134	178	178		
Management						
TOTAL		**765**	**8,459**	**3,628**	**3,490**	**1,341**

10. Tax

The explanation for the nil tax charge for the period is set out below.

NDA Group & Authority	**2019 £m**	2018 £m
NDA Group net expenditure before tax	(99,490)	72,224
Deficit on ordinary activities before tax at the UK standard rate of corporation tax of 19% (2018: 19%)	(18,903)	13,722
Effects of:		
Income and expenditure which is not taxable or tax deductible	19,103	(13,558)
Capital allowances for the year in excess of depreciation	116	113
Unutilised losses	(316)	(277)
Current tax charge for the year	-	-
Diverted Profits Tax	-	-
Deferred tax release	-	-
Total tax charge / (credit)	-	-

The NDA does not pay tax on any profits arising from its activities in relation to decommissioning, and similarly losses are not deductible in relation to decommissioning. Subsidiaries do not pay tax on profits arising as these are offset against the taxable losses of the NDA. A deferred tax asset has not been recognised in respect of any non-decommissioning losses incurred by the NDA as the NDA does not anticipate taxable surpluses arising in the foreseeable future. The NDA is liable for Controlled Foreign Company Tax on the activities of Rutherford Indemnity Limited, NDA's wholly-owned captive insurance company based in Guernsey.

11. Property, plant and equipment

NDA Group 2019	Land £m	Buildings £m	Fixtures and fittings £m	Plant and equipment £m	Transport equipment £m	Assets under construction £m	Total £m
Cost or valuation							
At 1 April 2018	37	2,135	5	4,742	70	104	7,093
Revaluations	(22)	-	–	–	–	–	(22)
Eliminations (d)	-	(1,838)	–	(101)	–	–	(1,939)
Additions	–	–	–	–	–	9	9
Other reclassifications (e)	–	–	–	(73)	1	(37)	(109)
Disposals	–	–	–	(48)	-	–	(48)
At 31 March 2019	**15**	**297**	**5**	**4,520**	**71**	**76**	**4,984**
Depreciation							
At 1 April 2018	–	(2,066)	(4)	(4,164)	(29)	–	(6,263)
Eliminations (d)	-	1,838	–	101	–	–	1,939
Charged in year	–	(2)	–	(50)	(4)	–	(56)
Disposals	–	–	–	48	-	–	48
At 31 March 2019	**–**	**(230)**	**(4)**	**(4,065)**	**(33)**	**–**	**(4,332)**
Net book value at 31 March 2018	37	69	1	578	41	104	830
Net book value at 31 March 2019	**15**	**67**	**1**	**455**	**38**	**76**	**652**

The net book value of plant and equipment at 31 March 2019 (£455 million) includes £279 million relating to future decommissioning costs.

Notes to the financial statements - continued

11. Property, plant and equipment (continued)

NDA Group 2018	Land £m	Buildings £m	Fixtures and fittings £m	Plant and equipment £m	Transport equipment £m	Assets under construction £m	Total £m
Cost or valuation							
At 1 April 2017	62	2,135	5	4,651	51	209	7,113
Adjustment in respect of prior period	-	1	–	1	10	(12)	-
Revaluations	(25)	(1)	–	–	–	–	(26)
Additions	–	–	–	–	-	28	28
Other reclassifications (e)	–	-	–	100	10	(88)	22
Disposals	–	–	–	(6)	(1)	–	(7)
Impairment (f)	-	-	-	(4)	–	(33)	(37)
At 31 March 2017	**37**	**2,135**	**5**	**4,742**	**70**	**104**	**7,093**
Depreciation							
At 1 April 2017	–	(2,063)	(4)	(4,115)	(25)	–	(6,207)
Charged in year	–	(3)	–	(56)	(5)	–	(64)
Disposals	–	–	–	6	1	–	7
Impairment (f)	–	-	–	1	–	–	1
At 31 March 2018	**–**	**(2,066)**	**(4)**	**(4,164)**	**(29)**	**–**	**(6,263)**
Net book value at 31 March 2017	62	72	1	536	26	209	906
Net book value at 31 March 2018	**37**	**69**	**1**	**578**	**41**	**104**	**830**

The net book value of plant and equipment at 31 March 2018 (£578 million) includes £293 million relating to future decommissioning costs.

Authority 2019	Land £m	Buildings £m	Fixtures and fittings £m	Plant and equipment £m	Transport equipment £m	Assets under construction £m	Total £m
Cost or valuation							
At 1 April 2018	33	2,091	3	4,240	4	104	6,475
Revaluations	(22)	–	–	–	–	–	(22)
Eliminations (d)	–	(1,838)	–	(101)	–	-	(1,939)
Additions	–	-	–	–	–	7	7
Other reclassifications (e)	–	–	–	37	–	(37)	–
At 31 March 2019	**11**	**253**	**3**	**4,176**	**4**	**74**	**4,521**
Depreciation							
At 1 April 2018	–	(2,066)	(3)	(3,970)	(1)	–	(6,040)
Eliminations (d)	–	1,838	–	101	–	–	1,939
Charged in year	–	(1)	–	(38)	(1)	–	(40)
At 31 March 2019	**–**	**(229)**	**(3)**	**(3,907)**	**(2)**	**–**	**(4,141)**
Net book value at 31 March 2018	33	25	–	270	3	104	435
Net book value at 31 March 2019	**11**	**24**	**–**	**269**	**2**	**74**	**380**

The net book value of plant & equipment at 31 March 2019 (£269 million) includes £113 million relating to future decommissioning costs.

11. Property, plant and equipment (continued)

Authority 2018	Land £m	Buildings £m	Fixtures and fittings £m	Plant and equipment £m	Transport equipment £m	Assets under construction £m	Total £m
Cost or valuation							
At 1 April 2017	58	2,069	3	4,167	4	197	6,498
Revaluations	(25)	-	–	–	–	–	(25)
Additions	–	22	–	–	–	17	39
Other reclassifications	–	–	–	78	-	(78)	-
Impairment (f)	-	–	–	(5)	–	(32)	(37)
At 31 March 2018	**33**	**2,091**	**3**	**4,240**	**4**	**104**	**6,475**
Depreciation							
At 1 April 2017	–	(2,064)	(3)	(3,930)	(1)	–	(5,998)
Charged in year	–	(2)	–	(41)	-	–	(43)
Impairment (f)	–	–	–	1	–	–	1
At 31 March 2018	**–**	**(2,066)**	**(3)**	**(3,970)**	**(1)**	**–**	**(6,040)**
Net book value at 31 March 2017	58	5	-	237	3	197	500
Net book value at 31 March 2018	**33**	**25**	**-**	**270**	**3**	**104**	**435**

The net book value of plant and equipment at 31 March 2018 (£270 million) includes £125 million relating to future decommissioning costs.

(a) The NDA accounts for non-waste management assets on nuclear licensed sites, which have an ongoing value in use or realisable value, in accordance with IAS 16 and the requirements of FReM. Assets outside the nuclear licensed site boundaries are revalued in accordance with FReM.

The NDA continues to require SLCs to maintain inventories of all property, plant and equipment held on nuclear licensed sites and which are subject to validation and audit as part of the contractual terms in place between the NDA and license holders.

(b) Land and buildings located outside the nuclear licensed site boundaries, were revalued at 31 March 2019 on the basis of existing use value or market value, as appropriate, by external qualified valuers. The valuations were undertaken in accordance with the Royal Institution of Chartered Surveyors Valuation Standards (6th Edition) by Avison Young Ltd Chartered Surveyors.

(c) Contracted capital commitments relating to those economic assets expected to be subsequently capitalised, were £4 million (2018: £22 million).

(d) During the year NDA eliminated fully depreciated assets no longer performing commercial activity, which had a gross book value and accumulated depreciation of £1,939 million. The assets included the Thorp reprocessing plant and associated buildings and plant and equipment which no longer perform commercial activity following the cessation of reprocessing during the year.

(e) Changes in the estimated future cost of decommissioning, related to commercial property, plant and equipment, are offset by matching changes in the value of the IAS 37 property, plant and equipment asset. A decrease of £109 million was recognised in the year (2018: £22 million increase), see note 24.

(f) No impairment charges to expenditure were made in the year (2018: £36 million).

Notes to the financial statements - continued

12. Intangible assets

Intangible assets had no economic value at 31 March 2019 and 31 March 2018

13. Investments in subsidiaries

Authority	**2019 £m**	2018 £m
Cost		
At 1 April	**259**	229
Additions	**-**	30
At 31 March	**259**	**259**
Impairment		
At 1 April	**–**	–
Reversal	**–**	–
At 31 March	**–**	–
Net book value at 1 April	259	229
Net book value at 31 March	**259**	**259**

Details of the Authority's subsidiaries at 31 March 2019 are as follows:

Name	Country of incorporation	Nature of business	Proportion of ordinary shares held by NDA %
Direct Rail Services Ltd	UK	Rail transport services within the UK	100
International Nuclear Services France SAS (i)	France	Transportation of spent fuel	100
International Nuclear Services Japan KK (i)	Japan	Transportation of spent fuel	100
International Nuclear Services Ltd (INS Ltd)	UK	Contract management and the transportation of spent fuel, reprocessing products and waste	100
NDA Properties Ltd	UK	Property management	100
Pacific Nuclear Transport Ltd (i)	UK	Transportation of spent fuel, reprocessing products and waste	68.75
Rutherford Indemnity Ltd	Guernsey	Nuclear insurance	100
Radioactive Waste Management Ltd	UK	Development of Geographical Disposal Facility	100
NDA Archives Ltd	UK	Operation of Nucleus – The Nuclear and Caithness Archive	100
Sellafield Ltd	UK	Operation of nuclear licensed sites	100

(i) Ownership through INS Ltd.

The results of all of the above subsidiaries are included within these consolidated financial statements.

NDA is a member of Energus, a company limited by guarantee registered in the UK, providing training facilities in support of the nuclear estate. NDA's liability is limited to £10.

NDA is a member of North Highland Regeneration Fund Limited, a company limited by guarantee registered in Scotland and contributing to socio-economic development in the North Highland region. NDA's liability is limited to £100.

NDA is a member of Energy Coast West Cumbria Limited, a company limited by guarantee registered in the UK and contributing to the economic regeneration of west Cumbria. NDA's liability is limited to £1.

14. Recoverable contract costs

The NDA Authority and Group have commercial agreements in place under which some or all of the expenditure required to settle Nuclear Provisions will be recovered from third parties.

Recoverable contract costs comprise costs which were incurred before the revenue recognition period of each contract and which are amortised each year in line with revenue ('Historic costs' below) and costs which form part of the nuclear provision, which are restated each year for unwinding of discount and other changes in estimate, and released as they occur in each year ('Future costs' below).

NDA Group and Authority	2019 £m	2018 £m
Recoverable contract costs relating to Nuclear Provisions:		
Gross recoverable contract costs	**5,046**	7,081
Less applicable payments received on account (see note 23)	**(3,092)**	(3,192)
Less associated contract loss provisions (see note 25)	**(334)**	(543)
	1,620	3,346

The movements in the gross recoverable contract costs during the year are detailed in the table below.

	2019			2018		
NDA Group and Authority	**Historic costs £m**	**Future costs £m**	**Total costs £m**	Historic costs £m	Future costs £m	Total costs £m
Balance as at 1 April	**1,783**	**5,298**	**7,081**	2,011	4,874	6,885
Increase in year (see note 24)	**–**	**(1,510)**	**(1,510)**	–	764	764
Unwind of discount (see note 24)	**–**	**(83)**	**(83)**	–	(49)	(49)
Amortisation (see note 6)	**(166)**	**–**	**(166)**	(228)	–	(228)
Release in year (see note 24)	**–**	**(276)**	**(276)**	–	(291)	(291)
Balance as at 31 March	**1,617**	**3,429**	**5,046**	1,783	5,298	7,081

The historic costs within the above are deemed contract assets under IFRS 15. The opening balances, amortisation in period and closing balances for each main contract type are:

NDA Group and Authority	**Spent fuel reprocessing and associated waste management £m**	**Spent fuel receipt and management £m**	**2019 Total £m**	**Spent fuel reprocessing and associated waste management £m**	**Spent fuel receipt and management £m**	**2018 Total £m**
Balance as at 1 April	1,162	621	1,783	1,359	652	2,011
Amortisation	(136)	(30)	(166)	(196)	(32)	(228)
Balance as at 31 March	1,026	591	1,617	1,163	620	1,783

Contract assets under IFRS 15 are deemed financial instruments for the purposes of IFRS 9 and therefore are ordinarily required to be reviewed for expected credit loss impairment. The above contract asset balances comprise costs which have been previously incurred and are now being amortised in each reporting period. They are matched in full by payments on account and therefore a credit loss impairment is not required.

Notes to the financial statements - continued

15. Deferred taxation

Deferred tax liability not recognised
There were no unrecognised deferred tax liabilities at 31 March 2019 or 31 March 2018.

Deferred tax assets not recognised
The following deferred tax assets have not been recognised as the NDA does not anticipate a taxable surplus arising in the foreseeable future:

NDA Group	**2019 £m**	2018 £m
Tax losses	1,277	1,220
Accelerated capital allowances	568	557
Intangibles	6	6
Short term timing differences	7	7
Deferred tax asset at UK standard rate of Corporation Tax for 2019 of 19% (2019: 20%)	1,858	1,790

16. Inventories

	NDA Group		**Authority**	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Raw materials and consumables	**43**	36	**34**	29
Work-in-progress	**39**	32	**–**	–
	82	68	**34**	29

The cost of raw materials and consumables recognised as an expense in the year was £74 million in Authority (2018: £80 million) and £81 million in NDA Group (2018: £86 million).

Work-in–progress recognised as an expense in the year in both Authority and NDA Group was nil (2018: £4 million).

17. Financial instruments by category

The accounting classification of each category of financial instruments, and their carrying values, is set out in the following table:

	note	NDA Group 2019 £m	NDA Group 2018 restated £m	Authority 2019 £m	Authority 2018 restated £m
Financial assets					
Fair value through profit or loss (FVTPL):					
Other investments	19	**450**	374	**–**	–
		450	374	**-**	-
Financial assets at amortised cost:					
Non-current finance lease receivable	20	**43**	43	**43**	43
Non-current other receivables	21	**8**	10	**8**	10
Current trade and other receivables (a)	21	**90**	120	**294**	316
Current finance lease receivables	20	**2**	2	**2**	2
Cash and cash equivalents	22	**113**	214	**28**	82
		256	389	**375**	453

	note	NDA Group 2019 £m	NDA Group 2018 £m	Authority 2019 £m	Authority 2018 £m
Financial liabilities					
Financial liabilities at amortised cost:					
Current trade and other payables (b)	23	**(564)**	(737)	**(576)**	(729)
		(564)	(737)	**(576)**	(729)

a) Prepayments and VAT are excluded.

b) Payments on account, deferred income and amounts owed to HMRC (in Note 23, other taxes and social security) are excluded.

Generally, financial assets and financial liabilities are generated by day-to-day operational activities and are not held to manage the risks facing the NDA in undertaking its activities. Details of the significant accounting policies and methods adopted, including the criteria for recognition, the basis of measurement and the basis on which income and expenses are recognised, in respect of each class of financial asset and financial liability are disclosed in note 2.15. Other investments measured at fair value through profit or loss are valued using inputs which are deemed level 1 in the fair value hierarchy set out in IFRS 13 (Fair Value Measurement).

The Group has a small number of Euro-denominated contracts which are not significant to the Financial Statements of the Group. This small currency risk is nonetheless still mitigated through the use of forward currency contracts placed with the Government Banking Service. The currency risk arising from overseas operations within the group is negligible.

The Group is not exposed to any significant level of interest rate risk due to the absence of any commercial borrowings in its Consolidated Statement of Financial Position.

The Group is exposed to a low level of price risk in respect of its energy trading operations. This risk is mitigated by the trading strategy employed which stipulates how far ahead of time energy products are purchased and sold. Due to the pricing structure and historical nature of reprocessing contracts, there is no significant exposure to price risk.

There is no significant exposure of the Group to liquidity risk due to the nature of its funding arrangement with BEIS.

The NDA is required to place deposit deeds as collateral in respect of certain energy trading costs incurred. £2 million of such collateral is included within current trade and other receivables in both the Authority and Group Statement of Financial Position at 31 March 2019 (2018: £2 million). The risk of loss associated with these deposits is considered to be minimal.

In addition to this, a letter of credit is issued by a commercial bank on the NDA's behalf in favour of a certain supplier, with respect to energy trading costs. This does not give rise to a financial asset in the accounts of NDA Authority or Group.

Notes to the financial statements - continued

18. Financial risk management

The NDA is financed by a combination of Government funding and commercial activities, and as such is not exposed to the degree of financial risk faced by other business entities. Consequently, financial instruments play a more limited role in creating and managing risk than would apply to a non-public sector body. It does however experience some degree of risk due to the variability of commercial income.

The NDA applies for funding as part of the Government Spending Review. This sets the annual expenditure limit net of the NDA's commercial income, derived largely from reprocessing and spent fuel and waste management contracts. The NDA is required to prioritise and allocate funding to deliver the required programme of work within this net limit, whilst mindful of the potential vulnerability of commercial income to plant breakdown. This is achieved through the use of an extensive reporting and control mechanism, which supports a portfolio based approach to managing the opportunities and risks within both the expenditure and commercial income. The approach has enabled the NDA to consistently control net expenditure within the prescribed limits set by the funding regime.

Separately the NDA has developed an extensive programme to embed risk management practices, covering both operational and financial risks, across all its functions and to provide contractual mechanisms to obtain assurance of good risk management practices from the SLCs. The primary financial risks faced by the NDA are commodity price risk and credit risk. Market risk, comprising foreign currency risk, liquidity risk and interest rate risk, is not considered to be a significant risk for the NDA.

Commodity price risk
Commodity price risk is the risk or uncertainty arising from possible price movements and their impact on the commercial income and therefore ultimately on the funding requirements of the NDA.

The risk to NDA in relation to electricity prices is not considered to be significant.

Credit risk
Credit risk is the risk that a counterparty will default on its contractual obligations resulting in financial loss to the NDA. This risk is managed through ongoing monitoring of the aging of receivables (for which expected credit loss impairments have been made under IFRS 9). The Authority's contracts are almost entirely reprocessing and spent fuel and waste management contracts, for which the NDA is not taking on any new customers.

19. Other investments

	NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Investments carried at fair value:				
Bank deposits	**53**	47	**–**	–
Managed investments	**397**	327	**–**	–
	450	374	**–**	–

Managed investments comprises of funds held within Rutherford Indemnity Limited in order to allow it to provide insurance for assets across the NDA estate.

20. Finance lease receivables

Present value of minimum lease payments

	NDA Group		Authority	
	2019 £m	2018 restated £m	**2019 £m**	2018 restated £m
Amounts receivable under finance leases:				
Not later than one year	**2**	2	**2**	2
Later than one year and not later than five years	**6**	6	**6**	6
Later than five years	**174**	175	**174**	175
	182	183	**182**	183
Less: unearned finance income	**(135)**	(136)	**(135)**	(136)
Present value of minimum lease payments receivable	**47**	47	**47**	47
Less: expected credit loss	**(2)**	(2)	**(2)**	(2)
Present value of minimum lease payments receivable after expected credit loss	**45**	45	**45**	45
Of which:				
Current	**2**	2	**2**	2
Non-current	**43**	43	**43**	43

20. Finance lease receivables (continued)

	Present value of minimum lease payments NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Amounts receivable under finance leases:				
Not later than 1 year	**2**	2	**2**	2
Later than 1 year and not later than 5 years	**5**	5	**5**	5
Later than 5 years	**40**	40	**40**	40
Present value of minimum lease payments receivable	**47**	47	**47**	47

The finance lease receivable relates to:

a) Land and buildings of the Springfields Fuels operation which was disposed of to Westinghouse Electric UK Holdings Limited by way of a 150 year lease on 1 April 2010. The interest rate inherent in the lease was fixed at the contract date for all of the lease term. The average effective interest rate contracted approximates to 3.50% per annum; and

b) Certain land and buildings of the Capenhurst site which were disposed of to Urenco UK Ltd on 29 November 2012 by way of a combination of freehold and leasehold sales. The interest rate inherent in the lease was fixed at the contract date for all of the lease term. The average effective interest rate contracted approximates to 3.50% per annum.

The finance lease receivable balance is secured over the assets leased. The NDA is not permitted to sell or re-pledge the collateral in the absence of default by the lessee.

Notes to the financial statements - continued

21. Trade and other receivables

	NDA Group		Authority	
	2019	2018 restated	**2019**	2018 restated
	£m	£m	**£m**	£m
Non-current:				
Prepayments	**31**	30	**31**	30
Other receivables	**8**	10	**8**	10
Less provision for expected credit loss	**-**	-	**-**	-
	39	40	**39**	40
Current:				
Trade receivables	**62**	48	**282**	262
Accrued income	**20**	40	**13**	44
Amounts receivable from Consolidated Fund	**-**	1	**-**	1
Other receivables	**11**	32	**2**	10
Prepayments	**10**	10	**6**	6
VAT	**71**	92	**70**	91
	174	223	**373**	414
Less: provision for expected credit loss	**(3)**	(1)	**(3)**	(1)
	171	222	**370**	413

Non-current other receivables relate to lump sum payments made under early retirement arrangements to individuals working for SLCs who have retired early, or who have accepted early retirement, before 31 March 2019. These payments are refundable to the NDA from the appropriate pension scheme at or after the date on which the individual concerned would have reached normal retirement age.

Provision for expected credit loss

The Authority has assessed its expected credit loss on trade and other receivables as at the reporting date as follows:

- Amounts owed by UK government departments are considered to have no expected credit loss, in accordance with FReM
- Amounts owed by entities in the NDA estate (subsidiaries and site licence companies) are considered to have no expected credit loss, based on the Authority's knowledge of the financial position and future operations of each company
- Amounts owed by all other entities have been subject to a probability weighted assessment based on the outcomes of default and no default.

Amounts past due (following table) include amounts owed by government departments, other NDA estate entities and other entities considered relatively low risk by the NDA, therefore the overall expected credit loss risk for these sums is assessed as being realively low.
s

Ageing of current trade receivables:

	NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Nit past due	**17**	45	**240**	260
Past due in the following periods:				
Within 30 days	**34**	2	**33**	–
31 to 60 days	**2**	1	**1**	1
61 to 90 days	**2**	-	**2**	-
91 to 120 days	**-**	-	**-**	-
Over 120 days	**7**	-	**6**	1
Total	**62**	48	**282**	262

22. Cash and cash equivalents

	NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Balance at 1 April	**214**	135	**82**	69
Net change in cash and cash equivalent balances	**(101)**	79	**(54)**	13
Balance at 31 March	**113**	214	**28**	82
The balances at 31 March were held at:				
Commercial banks	**78**	128	**1**	1
Government Banking Service	**35**	86	**27**	81
	113	214	**28**	82

Cash and cash equivalents comprise cash and short term bank deposits with an original maturity of 3 months or less.

Notes to the financial statements - continued

23. Trade and other payables

	NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Current:				
Trade payables	**103**	224	**138**	278
Receipts to surrender to the Consolidated Fund	**2**	-	**2**	-
Other payables	**2**	9	**–**	-
Accruals	**457**	504	**436**	451
	564	737	**576**	729
Other taxes and social security	**55**	52	**–**	-
Payments received on account	**468**	660	**461**	654
Deferred income	**6**	14	**1**	8
	1,093	1,463	**1,038**	1,391
Non-current:				
Payments received on account	**1,696**	1,620	**1,696**	1,620
	1,696	1,620	**1,696**	1,620

	NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Movements on gross payments received on account				
Balance at 1 April	**5,472**	5,586	**5,466**	5,580
Reclassification to accrued income	**-**	3	**-**	3
Revalorisation (see note 6)	**123**	181	**123**	181
Amounts received	**448**	690	**447**	690
Released to income	**(787)**	(988)	**(787)**	(988)
Balance at 31 March	**5,256**	5,472	**5,249**	5,466

	NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Gross payments on account at 31 March	**5,256**	5,472	**5,249**	5,466
Deduction of recoverable contract costs (see note 14)	**(3,092)**	(3,192)	**(3,092)**	(3,192)
Net payments on account at 31 March	**2,164**	2,280	**2,157**	2,274
Of which:				
Current	**468**	660	**461**	654
Non-current	**1,696**	1,620	**1,696**	1,620
	2,164	2,280	**2,157**	2,274

Trade and other payables and accruals principally comprise amounts outstanding for trade purchases and ongoing costs. The NDA has procedures in place to ensure that all payables are paid within the pre-agreed credit terms. Payments received on account relate to amounts which customers have paid for the provision of services under long-term contracts. These payments will be recognised as income when the services are provided. Payments received on account are shown net after deduction of any applicable recoverable contract costs (see note 14). Payments on account not yet recognised as revenue are adjusted for inflation each year (known as revalorisation).

Payments on account balances are deemed contract liabilities under IFRS 15.

24. Nuclear Provisions

	NDA Group			Authority
	2019 £m	2018 £m	**2019 £m**	2018 £m
Balance at 1 April	**233,569**	163,505	**234,066**	163,998
Provided for in the year and charged to:				
– Statement of Comprehensive Net Expenditure (note 7)	**(95,410)**	73,623	**(95,408)**	73,622
– Recoverable contract costs (a) (note 14)	**(1,510)**	764	**(1,510)**	764
Unwinding of discount charged to:				
– Statement of Comprehensive Net Expenditure (note 7)	**(3,532)**	(1,237)	**(3,532)**	(1,237)
– Recoverable contract costs (a) (note 14)	**(83)**	(49)	**(83)**	(49)
Decommissioning costs utilised in the year (note 7)	**(2,599)**	(2,741)	**(2,599)**	(2,741)
Recoverable contract costs released in year (note 14)	**(276)**	(291)	**(276)**	(291)
In-year group provision adjustment (b) (note 7)	**(92)**	(27)	**–**	–
Provision changes impacting property, plant and equipment (note 11)	**(109)**	22	**–**	–
Total change in provision	**(103,611)**	70,064	**(103,408)**	70,068
Balance at 31 March	**129,958**	233,569	**130,658**	234,066
Of which:				
Current	**2,735**	2,860	**2,735**	2,855
Non-current	**127,223**	230,709	**127,923**	231,211
	129,958	233,569	**130,658**	234,066

(a) The NDA has commercial agreements in place under which a portion of the expenditure required to settle certain elements of the Nuclear Provision are recoverable from third parties. Changes in the future cost estimates of discharging those elements of the Nuclear Provision are therefore matched by a change in future recoverable contract costs. In accordance with IAS 37, these recoverable amounts are not offset against the Nuclear Provision but are treated as a separate asset. The amount recoverable at 31 March 2019 (NDA Group and Authority) is £3,429 million (2018: £5,298 million) – the 'future costs' balance in note 14.

b) An in-year group provision adjustment is made for the movements in the net pension deficit at Sellafield Ltd, which is already implicitly included in the nuclear provision it is deducted here. The opening balance of the net pension deficit is included in the Group opening nuclear provision, and the in-year movement of the deficit included in the note. The 2018/19 increase in this pension deficit was £92 million (2017/18: £27 million).

The discount implicit in recognising nuclear provisions is unwound over the life of the provisions, with the impact of the unwind of one years' discount shown in adjustments to provisions in the Statement of Comprehensive Net Expenditure. An increase of 0.5% in the discount rate (producing a less negative, or more positive, discount rate) would reduce the provision to £110 billion, whilst a decrease in discount rate of 0.5% (producing a more negative, or less positive, discount rate) would increase the provision to £158 billion.

The change in discount rates (see note 2.16) in the current financial year produced a decrease of £107,764 million (2018: £65,973 million increase).

Changes in the cost estimates of discharging the Nuclear Provision (representing increase or decrease in future decommissioning costs) are charged to the adjustments to provisions in the Statement of Comprehensive Net Expenditure. This charge includes the impact of restating liabilities from March 2018 values to current price levels. The overall decrease in the provision was £103,611 million (2018: £70,064 million increase) of which the Authority estimates that £9,915 million related to changes in price levels (2018: £5,326 million).

A total of £2,875 million (2018: £3,032 million) has been released from the Nuclear Provision in the year to 31 March, being the amount provided for that year as at 31 March 2018, adjusted for price changes.

Changes in the estimated future cost of decommissioning, related to commercial property, plant and equipment, are offset by matching changes in the value of the IAS 37 property, plant and equipment asset. A decrease of £109 million was recognised in the year (2018: £22 million increase).

Notes to the financial statements - continued

24. Nuclear Provisions (continued)

Analysis of expected timing of discounted cash flows for the NDA Group Nuclear Provision is as follows:

NDA Group	Waste £m	Research £m	Sellafield £m	Fuel manufacturing and generation £m	Others £m	**2019 Total £m**	2018 Total £m
Within 1 year	77	257	1,912	420	72	2,738	2,860
2–5 years	328	1,051	8,130	1,311	339	11,159	11,581
6–20 years	2,354	1,883	30,405	1,165	644	36,451	41,583
21–50 years	3,907	208	33,343	806	488	38,752	62,943
After 50 years	4,788	61	24,742	11,893	133	41,617	115,269
	11,454	3,460	98,532	15,595	1,676	130,717	234,236
Deduction in respect of Sellafield pension deficit (b)						(759)	(667)
Total NDA Group						129,958	233,569
Sensitivity							
Increase	28,244	180	83,098	5,707	112		
Reduction	(4,191)	(360)	(13,850)	(5,707)	(225)		

The NDA calculates its provision based on management's best estimate of the future costs of the decommissioning programme, which is expected to take until 2137 to complete. The NDA also considers credible risks and opportunities which may increase or decrease the cost estimate, but which are deemed less probable than the best estimate. These are the basis of the sensitivities identified above, and the key sensitivities are as follows:

- waste activities cover the Low Level Waste Repository and the GDF, with the key sensitivities being in the timing and costs of constructing and operating the GDF. The above range from a reduction of £4,191 million to an increase of £28,244 million reflects three separate sensitivities:
  - o The potentially higher costs of constructing and operating the GDF itself, which dependent on the location and construction requirements of the facility, could be up to £25,144 million higher (or £4,191 million lower) than the base case assumption
  - o The impact of the timing of the facility's construction and operations. The current planned date for the facility to receive waste is 2045. NDA has identified a risk that the construction and opening of the facility may be delayed beyond 2045 (see page 64). A delay to this date may increase the cost of the facility itself, along with the cost of interim storage of waste at sites across the NDA estate. A delay of a small number of years is considered to be within the overall tolerance of the estimate for GDF construction and waste transfer, and is not considered to have a material impact on the provision estimate. A longer delay of say 20 years could materially impact the provision, by approximately £2,100 million.
  - o A delay of 20 years would not necessarily increase the underlying costs of the facility, but would increase the discounted value of the estimate by approximately £1,000 million due to the effect of long term negative discount rates.
- Activities on the sites primarily used for research (Dounreay, Harwell, and Winfrith) are concerned with final decommissioning of assets and site clearance. Sites will be cleared by 2080. Options are being explored to accelerate site clearance, which in the case of Dounreay would reduce the provision by £360 million; an increase in the cost and/or a delay of past the latest anticipated Interim State date (2033) would increase the provision by up to £180 million.
- Sellafield represents activities associated with operation of the site, reprocessing and eventual decommissioning, and includes all site overheads. Principal sensitivities are around the cost of delivering the plan, particularly the costs of new construction, decommissioning and post operational clean out (POCO) work in the long-term (beyond the next twenty years). The potential costs range from a £13,850 million reduction against the current estimate, to a £83,098 million increase.
- fuel manufacturing and generation (which for this purpose includes Magnox and Springfields) programme of work includes defueling the generating stations and preparing for interim Care and Maintenance (complete by 2030) followed by a final site clearance phase around 2070 to 2107. The main cost risk is in the final site clearance phase, which may increase costs by £5,707 million. Conversely a reduction in the costs associated with this phase may reduce costs by £5,707 million.

25. Other provisions

NDA Group	Restructuring £m	Contract loss £m	Other £m	**Total £m**
Movements in gross provisions				
Balance at 31 March 2017	**72**	**1,094**	**37**	**1,203**
Provided for in the year (see note 7)	-	35	-	**35**
Released in the year (see note 7)	(9)	(165)	(2)	**(176)**
Unwinding of discount (see note 7)	-	(16)	-	**(16)**
Balance at 31 March 2018	**63**	**948**	**35**	**1,046**
Provided for in the year (see note 7)	5	(403)	2	**(396)**
Released in the year (see note 7)	(7)	(157)	-	**(164)**
Unwinding of discount (see note 7)	-	(15)	-	**(15)**
Balance at 31 March 2019	**61**	**373**	**37**	**471**

Authority	Restructuring £m	Contract loss £m	Other £m	Total £m
Movements in gross provisions				
Balance at 31 March 2017	**70**	**1,092**	**11**	**1,173**
Provided for in the year (see note 7)	(4)	39	-	**35**
Released in the year (see note 7)	(8)	(165)	(1)	**(174)**
Unwinding of discount (see note 7)	(1)	(15)	-	**(16)**
Balance at 31 March 2018	**57**	**951**	**10**	**1,018**
Provided for in the year (see note 7)	11	(407)	-	**(396)**
Released in the year (see note 7)	(7)	(157)	-	**(164)**
Unwinding of discount (see note 7)	-	(15)	-	**(15)**
Balance at 31 March 2019	**61**	**372**	**10**	**443**

Analysis of net provisions

	NDA Group		**Authority**	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Balance at 31 March	**471**	1,046	**443**	1,018
Amount deducted from recoverable contract costs (see note 14)	**(334)**	(543)	**(334)**	(543)
Net balance at 31 March	**137**	503	**109**	475
Of which:				
Current	**10**	143	**9**	141
2 to 5 years	**35**	177	**33**	151
After 5 years	**92**	183	**67**	183
Non-current	**127**	360	**100**	334
	137	503	**109**	475

Restructuring provisions have been recognised to cover continuing annual payments to be made under early retirement arrangements to individuals working for SLCs who retired early, or had accepted early retirement, before 31 March 2019. These payments continue at least until the date at which the individual would have reached normal retirement age. Lump sums paid to individuals on retirement are held as receivables, since they are refundable to the NDA from the appropriate pension scheme at or after the date on which the individual concerned would have reached normal retirement age.

Contract loss provisions have been recognised to cover the anticipated shortfall between total income and total expenditure on relevant long-term contracts. The above balances are shown net after deduction from any applicable recoverable contract costs (see note 14). The amount provided in the year for the contract loss provision relates to changes in estimates of the costs of existing contracts.

Other provisions comprises of provisions for insurance claims.

Notes to the financial statements - continued

26. Retirement benefit schemes

The NDA Group has a range of pension schemes including both defined contribution and defined benefit plans.

Defined contribution schemes

NDA and RWM employees have pension benefits provided through the Civil Service pension arrangements. From 1 April 2015 a new pension scheme for civil servants was introduced – the Civil Servants and Others Pension Scheme or alpha, which provides benefits on a career average basis with a normal pension age equal to the member's State Pension Age (or 65 if higher, details are described on page 75). Prior to that date, NDA and RWM employees participated in the Principal Civil Service Pension Scheme (PCSPS), an unfunded multi-employer defined benefit scheme in which the NDA and RWM are unable to identify their share of the underlying assets and liabilities. The scheme actuary valued the scheme as at 31 March 2012 and details can be found in the resource accounts of the Cabinet Office: Civil Superannuation at http://www.civilservicepensionscheme.org.uk/about-us/resource-accounts/. In accordance with guidance issued by HM Treasury, the PCSPS and Alpha are accounted for as defined contribution schemes in these financial statements. The next actuarial valuation will be as at 31 March 2019, but has not yet been completed.

Direct Rail Services Limited (DRS) employees joining after 1 April 2008 participate on a defined contribution basis in the Combined Nuclear Pension Plan (CNPP).

Sellafield Limited employees joining with effect from 24 November 2008 participate on a defined contribution basis in the Combined Nuclear Pension Plan (CNPP).

International Nuclear Services Ltd (INS) employees participate in the United Kingdom Atomic Energy Authority (UKAEA) Combined Pension Scheme, the CNPP and the Magnox Electric Group section of the Electricity Supply Pension Scheme. Participation in these schemes is in sections with other employers and INS is unable to identify its share of the underlying assets and liabilities. Consequently INS's participation in these schemes is accounted for as if they were defined contribution schemes, as permitted under IAS 19. INS's contributions to these schemes are assessed as part of regular actuarial valuations of those schemes and will vary in line with the funding position of the relevant scheme.

Pacific Nuclear Transport Ltd (PNTL) participates in the following industry wide defined contribution schemes:

- The ENSIGN Retirement Plan (for the MNOPF) which replaced the Merchant Navy Officers' Pension Plan (MNOPP); the scheme was closed to new contributions on 31 July 2015 and all existing members' benefits were transferred to the ENSIGN scheme.
- The Merchant Navy Ratings' Group Personal Pension Plan (MNRGPPP) which replaced the MNRPP in September 2010.

The National Employment Savings Trust (NEST) is an auto enrolment scheme set up by the Government. There is a small number of NDA Group employees who have exhausted their participation in their respective pension schemes and have been auto enrolled into NEST.

The total cost charged to expenditure of £29,407,000 (2018: £26,794,000) represents contributions payable to these schemes by the Group at rates specified in the rules of the schemes. No contributions were outstanding at this or the previous year end.

Defined benefit schemes

The Group participates in various pension schemes which are accounted for as defined benefit schemes.

GPS DRS section of the CNPP

DRS participates in the GPS DRS section of the CNPP, a defined benefit (final salary) funded pension scheme. The defined benefit structure was available to all DRS employees until 31 March 2008 when it was closed to new entrants.

Nirex section of the CNPP

The Nirex section of the CNPP is a defined benefit (final salary) funded pension scheme. The Nirex section was closed to new entrants on 1 April 2007 and has no active members.

Closed section of the CNPP

On the disposal of the Springfields Fuels operation the NDA took over direct responsibility of the pension liability within the Springfields Fuels section of the CNPP on 1 April 2010. The Closed section (formerly the Springfields Fuels Section) of the CNPP is a defined benefit (final salary) funded pension scheme. The Closed section was closed to new entrants and further accrual on 31 March 2010.

Sellafield and GPS SLC sections of the CNPP

Sellafield Limited participates in the Sellafield and GPS SLC sections of the CNPP, a defined benefit (final salary) funded pension scheme. The defined benefit structure was available to all Sellafield Limited employees up to 24 November 2008 when it was closed to new entrants.

A small number of Sellafield Limited employees participate in the Magnox Electric Group section of the Electricity Supply Pension Scheme. Participation in this scheme is in a section with other employers and Sellafield Limited is unable to identify its share of the underlying assets and liabilities. Consequently Sellafield Limited's participation in this scheme is accounted for as if it were a defined contribution scheme, as permitted under IAS 19. Sellafield Limited's contributions to this scheme are assessed as part of a regular actuarial valuation and will vary in line with the funding position of the scheme.

Merchant Navy Officers Pension Fund (MNOPF)

PNTL employees participate in the Merchant Navy Officers Pension Fund (MNOPF). The MNOPF is an industry wide defined benefit (final salary) funded pension scheme. The scheme was closed on 1 November 1996. All costs relating to 'Pacific' vessels are recoverable under contract from customers and hence a recoverable amount is recognised to offset the related pension scheme deficit.
pension scheme deficit.

26. Retirement benefit schemes (continued)

Merchant Navy Ratings Pension Fund (MNRPF)
PNTL employees participate in the Merchant Navy Ratings Pension Fund (MNRPF). The MNRPF is an industry wide defined benefit (final salary) funded pension scheme. The scheme was closed on 31 May 2001. The liabilities of the scheme have been capped at the level of benefits accrued to employees at the closure date, subject to adjustment for future actuarial valuations. All costs relating to 'Pacific' vessels are recoverable under contract from customers and hence a recoverable amount is recognised to offset the related pension scheme deficit.

In relation to the CNPP it is noted that:

- The scheme is sectionalised and individual sections cannot be liable for any other sections' obligations under the rules of the scheme;
- There is no agreed allocation of any surplus or deficit should a participating employer withdraw from the scheme or on wind up. In such an event the participating employer's obligations would be subject to negotiation with the scheme trustees in light of the funding position of the scheme at that time;
- The aggregate average duration of the CNPP obligation is 23 years (2018: 23 years), although this differs slightly by section.

In relation to the Merchant Navy schemes, whilst the schemes are sectionalised they operate on a "last man standing" basis such that a participating employer can become liable for part of the obligations of another participating employer should that employer withdraw from the scheme with underfunded obligations. The average duration of the Merchant Navy schemes obligations is 14 years (2018: 14 years).

Actuarial valuations for the various defined benefit schemes referred to above are performed on a triennial basis with 'roll forward' valuations performed in intervening years. Accordingly the relevant valuations have been updated at 31 March 2019 by independent actuaries using assumptions that are consistent with the requirements of IAS 19 and the results of those calculations have been incorporated in the figures below. Investments have been valued for this purpose at fair value.

Risks associated with the Group's defined benefit schemes
The defined benefit schemes expose the Group to a number of risks such as:

Changes in bond yields
Pension liabilities are calculated using discount rates linked to bond yields which are subject to volatility. In order to mitigate this risk the schemes hold a proportion of their assets in bonds, which provide a hedge against falling bond yields.

Investment risk
Some asset classes such as equities, which are expected to provide higher returns over the long term, are subject to short term volatility and may lead to deficits if assets underperform the discount rate used to calculate future liabilities. The allocation to such assets is monitored to ensure it remains appropriate given the schemes' long-term objectives.

Inflation risk
Since most of the scheme liabilities are indexed in line with price inflation, higher than assumed levels of inflation will increase the liabilities. In order to mitigate this risk the schemes hold a proportion of their assets in index-linked bonds.

Longevity risk
Increases in life expectancy will result in an increase in liabilities. The scheme actuaries regularly review actual experience of the scheme membership against the actuarial assumptions underlying the valuation of the liabilities and carry out detailed analysis when setting appropriate scheme specific mortality assumptions.

Other risks
There are a number of other risks involved in sponsoring defined benefit schemes including operational risks and legislative risks. The scheme trustees regularly assess these risks as part of their ongoing governance process.

The High Court ruled in the Lloyds Bank case on 26 October 2018 that schemes must equalise Guaranteed Minimum Pensions (GMPs) between men and women. GMPs were earned until April 1997 for schemes that were "contracted out" of the SERPS state pension. The judgement applies to GMP earned between 17 May 1990 (the date of the Barber judgment) and 5 April 1997 (when all GMPs ceased accrual). For the sections of the Combined Nuclear Pension Plan affected, allowance for GMP equalisation has been treated as a Past Service Cost through the Profit and Loss.

Notes to the financial statements - continued

26. Retirement benefit schemes (continued)

NDA Group
Employee benefit obligations
The amounts recognised in the Statement of Financial Position are as follows:

	2019 £m	2018 £m
Benefit obligations	3,147	2,841
Fair value of scheme assets	(2,354)	(2,136)
Deficit in schemes	**793**	705
Unrecognised asset under IAS 19 para 64b *	5	1
Receivable from third parties	–	–
Net deficit recognised in schemes	**798**	706

* Relates to MNOPF and MNRPF schemes which would otherwise be in surplus, although position for all 7 schemes in aggregate is a net deficit

Statement of Comprehensive Net Expenditure
The amounts recognised in the Statement of Comprehensive Net Expenditure are as follows:

	2019 £m	2018 £m
Current service cost	165	173
Past service cost	1	-
Net interest on net defined benefit (DB) assets / liabilities	18	18
Net cost in SoCNE	**184**	191
Actuarial (gain) / loss	(12)	(81)
Movement in unrecognised asset under IAS 19 para 64b	4	-
Receivable from third parties	-	-
Actuarial (gain) / loss recognised in OCE	**(8)**	(81)

Changes in the present value of the defined benefit obligations
The amounts recognised in the Statement of Financial Position are as follows:

	2019 £m	2018 £m
Opening defined benefit obligation	2,841	2,675
Current service cost	165	173
Past service cost	1	-
Net interest on scheme liabilities	74	69
Employee contributions	18	18
Actuarial (gain) / loss	95	(55)
Benefits paid	(47)	(39)
Closing defined benefit obligation	**3,147**	2,841

Changes in the fair value of the scheme assets are as follows:

	2019 £m	2018 £m
Opening fair value of scheme assets	2,136	2,002
Interest income on scheme assets	56	51
Actuarial gain	103	26
Employer contributions	88	78
Employee contributions	18	18
Benefits paid	(47)	(39)
Closing fair value of scheme assets	**2,354**	2,136

26. Retirement benefit schemes (continued)

Changes in the value of unrecognised assets under IAS 19 para 64b are as follows:

	2019 £m	2018 £m
Opening value of unrecognised assets	1	1
Movement in unrecognised assets	4	-
Closing value of unrecognised assets	**5**	1

Estimated expected employer contributions over the next financial year are as follows:

	2019 £m	2018 £m
Contributions including deficit repair payments	89	86

The major categories of plan assets as a percentage of total scheme assets are as follows:

	2019 %	2018 %
Equities	38	49
Property	12	12
Fixed Interest Gilts	2	2
Index Linked Gilts	19	10
Corporate Bonds	10	10
Hedge funds	-	–
Credit investment	19	17
Cash	-	-
Total	**100**	100

Principal actuarial assumptions at the date of the SOFP (expressed in weighted averages):

	2019 %	2018 %
Discount rate	2.45	2.55
Future salary increases *	1.00–2.85	1.00–2.85
Rate of increase of pensions in payment	3.35–3.50	3.30–3.45
Rate of increase of pensions in deferment	2.35–3.50	2.30–3.45
Retail Price Inflation	3.50	3.45
Life expectancy for a male pensioner aged 65 (in years)	21.8	21.9
Life expectancy for a male non-pensioner currently aged 45 from age 65 (in years)	22.9	23.1

* For those schemes with members accruing benefits future salary increases for 2019 are assumed to be 1.0% for the next two years, 2.3% each of the following ten years, and then 2.8% thereafter.

Mortality assumption

2019

S1NA Year of Birth tables with CMI 2017 projections subject to minimum improvements of 1% trend for males and females

2018

S1NA Year of Birth tables with CMI 2016 projections subject to minimum improvements of 1% trend for males and females

	2018 £'000	2014 £'000
Experience adjustments on plan liabilities	3	(57)
Experience adjustments on plan assets	104	26

26. Retirement benefit schemes (continued)

Sensitivity analysis

Change to	Change in assumption	Impact on DB obligation as at 31.03.18	Change in assumption	Impact on DB obligation as at 31.03.18
Discount rate	Increase by 0.5%	-11%	Decrease by 0.5%	12%
Rate of salary increase	Increase by 0.5%	4%	Decrease by 0.5%	-3%
Rate of price inflation	Increase by 0.5%	12%	Decrease by 0.5%	-11%
Rate of mortality	Increase by 1 year	4%		

Authority
Employee benefit obligations
The amounts recognised in the Statement of Financial Position are as follows:

	2019 £m	2018 £m
Benefit obligations	158	154
Fair value of scheme assets	(140)	(134)
Deficit in schemes	**18**	20
Receivable from third parties	–	–
Net deficit recognised in schemes	**18**	20

Statement of Comprehensive Net Expenditure
The amounts recognised in the Statement of Comprehensive Net Expenditure are as follows:

	2019 £m	2018 £m
Current service cost	–	–
Net interest on net defined benefit assets / liabilities	–	–
Net cost in SoCNE	**–**	**–**
Actuarial (gain) / loss	(2)	5
Receivable from third parties	–	–
Actuarial (gain) / loss recognised in OCE	**(2)**	5

Changes in the present value of the defined benefit obligations
The amounts recognised in the Statement of Financial Position are as follows:

	2019 £m	2018 £m
Opening defined benefit obligation	154	148
Net interest on scheme liabilities	4	3
Actuarial loss	5	6
Benefits paid	(5)	(3)
Closing defined benefit obligation	**158**	154

Changes in the fair value of the scheme assets are as follows:

	2019 £m	2018 £m
Opening fair value of scheme assets	134	133
Interest income on scheme assets	4	3
Employer contributions	-	–
Actuarial gain	7	1
Benefits paid	(5)	(3)
Closing fair value of scheme assets	**140**	134

The Authority made contributions to the Authority’s defined benefit pension schemes during the year. The value of these contributions was below the level of rounding used in the financial statements.

26. Retirement benefit schemes (continued)

Estimated expected employer contributions over the next financial year are as follows:

	2019 £m	2018 £m
Contributions including deficit repair payments	**1**	1

The major categories of plan assets as a percentage of total scheme assets are as follows:

	2019 %	2018 %
Equities	27	35
Property	10	11
Fixed Interest Gilts	-	–
Index Linked Gilts	28	21
Corporate Bonds	22	20
Credit investments	13	12
Cash	-	1
Total	100	100

Principal actuarial assumptions at the date of the SOFP (expressed in weighted averages):

	2019 %	2018 %
Discount rate	2.45	2.55
Future salary increases	–	–
Rate of increase of pensions in payment	3.35–3.50	3.30 –3.45
Rate of increase of pensions in deferment	2.35–3.50	2.30–3.45
Retail Price Inflation	3.50	3.45
Life expectancy for a male pensioner aged 65 (in years)	21.8	21.9
Life expectancy for a male non pensioner currently aged 45 from age 65 (in years)	22.9	23.1

Mortality assumption

2019

S1NA Year of Birth tables with CMI 2017 projections subject to minimum improvements of 1% trend for males and females

2018

S1NA Year of Birth tables with CMI 2016 projections subject to minimum improvements of 1% trend for males and females

	2019 £m	2018 £m
Experience adjustments on plan liabilities	-	(3)
Experience adjustments on plan assets	6	1

Sensitivity analysis

Change to	Change in assumption	Impact on DB obligation as at 31.03.18	Change in assumption	Impact on DB obligation as at 31.03.18
Discount rate	Increase by 0.5%	-9%	Decrease by 0.5%	10%
Rate of salary increase	Increase by 0.5%	-	Decrease by 0.5%	-
Rate of price inflation	Increase by 0.5%	10%	Decrease by 0.5%	-9%
Rate of mortality	Increase by 1 year	4%		

Notes to the financial statements - continued

27. Non-controlling interests

Non-controlling interests balance is the non-controlling interests' share of one non-wholly owned subsidiary (see note 13).

NDA Group	2019 £m	2018 £m
At 1 April	**2**	2
Change in equity of non-controlling interests during year	**–**	–
At 31 March	**2**	2

28. Commitments under leases

28 (a) Operating leases – NDA as lessee

	NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Minimum lease payments under operating leases recognised as an expense in the year	**32**	24	**3**	3

Total future minimum lease payments under operating leases are given in the table below:

	NDA Group		Authority	
	2019 £m	2018 Restated £m	**2019 £m**	2018 £m
Buildings and other:				
Not later than 1 year	**32**	24	**3**	3
Later than 1 year and not later than 5 years	**58**	55	**7**	8
Later than 5 years	**13**	11	**33**	34
	103	90	**43**	45

NDA Group figures for 2018 in the above table are restated for correction in respect of a small number of leases not previously included

Operating lease payments represent rentals payable by the Group for some of its properties, vehicles, locomotives and office equipment. All properties are rented on commercial terms and include office buildings with leases expiring between 2019 and 2044, and leases for industrial facilities with expiry dates between 2021 and 2099.

28 (b) Operating leases – NDA as lessor

Property rental income earned during the year amounted to £3 million (2018: £1 million).

Total future minimum lease receivables under operating leases are given in the table below:

	NDA Group		Authority	
	2019 £m	2018 £m	**2019 £m**	2018 £m
Buildings:				
Not later than 1 year	**2**	3	**5**	5
Later than 1 year and not later than 5 years	**8**	9	**13**	17
Later than 5 years	**21**	24	**64**	70
	31	36	**82**	92

Operating lease receipts represent rentals receivable by the Group in respect of various properties leased on commercial terms and historical agricultural lease agreements.

29. Contingent liabilities

Indemnities
Under the transfer scheme of 1 April 2005, the NDA has assumed responsibility for all occurrences relating to the designated nuclear sites that took place up to that date.

a. At 31 March 2019 the NDA held inventories of reprocessed uranic material. These materials are currently held at nil value, due to uncertainty over their future use, which may result in as-yet-unquantified liabilities for the NDA.

b. Whilst not the lead employer, the NDA is the lead organisation and has ultimate responsibility for certain nuclear industry pension schemes, including the Combined Nuclear Pension Plan, the Magnox section of the ESPS, and the GPS Pension Scheme. Provisions for known deficits are included within Nuclear Provisions. However, movements in financial markets may adversely impact the actuarial valuations of the schemes, resulting in an increase in scheme deficits and consequent increase in nuclear provision.

International Carrier Bond
During 2014/2015 the NDA procured a US Bond on behalf of their subsidiary, INS Ltd, in order to meet US law in respect of vessels calling at US ports for commercial purposes. This Bond is required to ensure that all duties, taxes and fees owed to the federal government are paid. The Bond would therefore only be called on in the case of non-payment of any of the above, and the total cost would not be expected to exceed $100,000.

30. Related parties

Government bodies
The NDA is an Executive NDPB sponsored by BEIS, which is regarded as a related party. During the year, the NDA has had various material transactions with BEIS and with other entities for which BEIS is regarded as the responsible department. The NDA receives grant financing from BEIS.
In the course of its normal business the NDA enters into transactions with Government owned banks. In addition, the NDA has a small number of material transactions with other Government Departments and other central Government bodies.

Directors' transactions
During the year, no Board member, key manager or other related party has undertaken any material transactions with the NDA.

Related party transactions
During the year, group companies entered into the following transactions with related parties:

Trading transactions
Transactions between the Authority and its subsidiaries were as follows:

		Sales of goods to parent		Purchase of goods from parent		Amounts owed by related parties		Amounts owed by related parties
	2019 £m	2018 £m	**2019 £m**	2018 £m	**2019 £m**	2018 £m	**2019 £m**	2018 £m
Direct Rail Services Ltd	**(37)**	(36)	**-**	1	**7**	7	**–**	–
International Nuclear Services Ltd	**(64)**	(91)	**1**	-	**181**	185	**–**	–
NDA Properties Ltd	**(9)**	(39)	**1**	-	**24**	41	**–**	–
Pacific Nuclear Transport Ltd	**–**	–	**2**	2	**–**	–	**–**	–
Rutherford Indemnity Ltd	**–**	-	**–**	-	**–**	–	**–**	–
Radioactive Waste Management Ltd	**(38)**	(29)	**3**	1	**–**	–	**–**	–
NDA Archives Ltd	**(5)**	(4)	**2**	2	**–**	–	**–**	–
Sellafield Ltd	**(2,026)**	(2,011)	**17**	16	**–**	–	**331**	391

Sales of goods to related parties were made at arm's length prices. The amounts outstanding are unsecured and will be settled in cash. No guarantees have been given or received. No provisions have been made for doubtful debts in respect of the amounts owed by related parties.

Loans to related parties

Amounts owed by DRS includes a loan of £7 million which is interest bearing at a fixed percentage above Bank of England base rate. The loan is not repayable until at least 2019.

Amounts owed by NDA Properties Limited includes a loan of £20 million which is interest bearing at a fixed rate, repayable in instalments over 25 years to 2038. At 31 March 2019 the balance owing was £16 million (2018: £17 million).

Key management compensation

Key management includes Executive and Non-executive directors together with those members of senior management who form part of the Executive Team. The compensation paid or payable to key management for employee services is set out below in aggregate for each of the categories specified in IAS 24 'Related Party Disclosures'. Further information about the remuneration of individual directors is provided in the audited part of the Remuneration and people report on pages 67 to 77.

Authority	**2019 £'000**	2018 £'000
Short-term employee benefits	3,547	2,693
Post-employment benefits	322	332
Other long-term benefits	1,155	868
	5,024	3,893

31. Events after the reporting period

- IAS 10 requires the NDA to disclose the date on which the accounts are authorised for issue, which is the date of the Certificate and Report of the Comptroller and Auditor General.

Business performance

Business Performance

The following section gives a brief report on each of the NDA's designated sites, grouped by the entity which holds the site operating licence. The section also reports on the performance of other businesses within the NDA estate, including wholly owned subsidiaries and our private decommissioning contracts. The reports cover progress towards key milestones and activities outlined in our 2018/21 Business Plan.

Key milestones and deliverables
Key milestones are agreed at the start of each financial year, against which progress is measured throughout the year.
The milestones and activities listed for each site are taken from the 2018/21 NDA Business Plan and are grouped by strategic theme.

Summary of performance during 2018/19

Status description		Number of activities	%
ACHIEVED	The key milestone or activity has been achieved during the financial year 2018/19 or satisfactory progress is being made towards achievement of longer term milestone.	11	7
ON TARGET	The key milestone or activity was due for completion after 31 March 2019 and as at that date was on track to be completed to schedule.	130	76
BEHIND TARGET	The key milestone or activity was due for completion after 31 March 2019 and as at that date there had been a delay against the planned schedule.	14	8
MISSED	The key milestone or activity was due for completion before 31 March 2019 and as at that date there had been a delay against the planned schedule and the target has been missed.	10	6
DEFERRED	Activity deferred due to re-prioritisation and/or reallocation of funding.	5	3

Updated cost and schedule information for major projects at sites can be found in Appendix C.
More details about the performance of our sites and other businesses can be found in our NDA Performance Reports which are published on our website: www.gov.uk/nda

Business Performance - Site Licence Companies

Sellafield Ltd

Priority Programme – Pile Fuel Storage Pond (PFSP) 2018/19 Business Plan activities

The PFSP is 1 of 4 legacy ponds and silos facilities at Sellafield prioritised for clean-up by the NDA.

Objective

To retrieve and package the waste from the Pile Fuel Storage Pond for long-term storage prior to disposal, followed by dewatering of the pond and putting the facility into an interim end state for long-term management. Final decommissioning of the facility is outside the scope of the current programme and is linked to the overall end state for Sellafield.

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Continue sustained sludge exports.	2018/21		DEFERRED	Sludge exports and bulk desludging remain paused, with other aspects of programme prioritised to ensure progress in priority areas. Bulk desludging restart now planned for last half of 2019/20.
Ready to start dewatering.	2018/21		DEFERRED	Now forecast to commence dewatering in June 2021 (previously March 2019) as a result of the additional scope to clear the bay floors for the Bay Interim State Pilot (BISP).

Priority Programme - First Generation Magnox Storage Pond (FGMSP) 2018/19 Business Plan activities

FGMSP is 1 of 4 legacy ponds and silos facilities at Sellafield prioritised for clean-up by the NDA.

Objective

To retrieve and package the waste from the First Generation Magnox Storage Pond for long-term storage prior to final disposal, followed by the decommissioning of the facility.

Major Projects within the FGMSP Programme:
Bulk Sludge and Fuel Retrievals: This project will provide the main capabilities to retrieve sludge, fuel and other solid waste from the pond and highest priority de-canning facilities ('wet bays'). This project is in the delivery phase.

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Commence Bulk sludge removal from D Bay.	2018/21		ON TARGET	
Continue to export fuel and sludge from the pond.	2018/21		ON TARGET	

Business Performance - Site Licence Companies

Sellafield Ltd

Priority Programme - Pile Fuel Cladding Silo (PFCS) 2018/19 Business Plan activities

PFCS is 1 of 4 legacy ponds and silos facilities at Sellafield prioritised for clean-up by the NDA.

Objective

To retrieve and package the waste from the Pile Fuel Cladding Silo into a passively safe form ready for disposal, followed by the decommissioning of the PFCS facility.

Major Projects within the PFCS Programme:

- PFCS Early Retrievals: This project covers the design, installation and commissioning of the integrated systems needed to retrieve the solid wastes from the PFCS. The project is currently in the delivery phase with construction of some of the specialist equipment already in progress.
- Box Encapsulation Plant Product Store – Direct Import Facility (BEPPS-DIF): This project will provide an interim-storage facility for packaged waste from the PFCS and other Sellafield facilities, most notably MSSS. This project is in the construction phase with civils works ongoing

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Completion of Inactive Safety commissioning of Box Encapsulation Plant and Product Store (BEPPS)/Direct Import Facility (DIF).	2018/21		BEHIND TARGET	Project delivery issues have resulted in additional cost and time being introduced.
Commence inactive commissioning of waste retrieval equipment.	2018/21		ON TARGET	
Move to volume production of 3m3 boxes.	2018/21		ON TARGET	
Begin retrievals from the Pile Fuel Cladding Silo	2018/21		ON TARGET	

Priority Programme – Magnox Swarf Storage Silo (MSSS) 2018/19 Business Plan activities

MSSS is 1 of 4 legacy ponds and silos facilities at Sellafield prioritised for clean-up by the NDA.

Objective

To retrieve and package the waste from the Magnox Swarf Storage Silos into a passively safe form for long-term storage ready for disposal, followed by the decommissioning of the MSSS facility.

Major Projects within the MSSS Programme

- Box Encapsulation Plant (BEP): This project will deliver the facility that will be used to treat and immobilise waste from MSSS, as well as other legacy facilities, to allow the waste to be interim-stored pending final disposal. The project is in the construction phase.
- Silo Emptying Plant (SEP) Solid Waste Storage Retrievals: This project will deliver the capability to mechanically retrieve waste from the MSSS silos and to export it (via shielded packages) to the downstream waste receipt facilities. The project is in delivery with the earliest date that retrievals can start being accelerated from 2023 to 2019.
- Silo Maintenance Facility: This project will provide capability to store, decontaminate, maintain and change over retrieval equipment and tool/waste packages used for retrieval from the silos. The project is in the construction phase with commissioning expected to complete in 2019.

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Implement the revised Magnox Swarf Storage Silo Strategy.	2018/21		ON TARGET	
Complete active commissioning of SEP 2 (Silo Emptying Plant).	2018/21		ON TARGET	First retrievals expected in late 2019/ early 2020.
Commence SEP1 (Silo Emptying Plant) Phase 1 active	2018/21		BEHIND TARGET	Delays experienced in final installation of equipment due to complexity and interaction with other activities
Silos Maintenance Facility complete.	2018/19	ACHIEVED		Project complete in January 2019.
First export of waste through the Encapsulated Product Store - waste treatment route.	2018/21		ON TARGET	
Progress the project for the bulk manufacture of 3m3 boxes.	2018/21		ON TARGET	
Begin retrievals from the Magnox Swarf Storage Silo.	2018/21		ON TARGET	

Priority Programme – Sellafield Security Enhancements Programme (SSEP) 2018/19 Business Plan activities

Objective

To deliver a series of interdependent security enhancements on the Sellafield site.

Major Projects within the SSEP Programme:

- Fence Civils Cluster: This project is providing additional layers of physical security at the Sellafield site including new fences, rail gates, turnstiles, search areas and vehicle barriers. The project outputs are now being turned into capabilities.
- Technology Cluster: The project outputs will provide the site with a unified command and control capability. This will include the colocation of emergency response services and site emergency management teams to provide a centralised location from which to plan, manage and co-ordinate emergency response and recovery activities.
- Cyber Security: The cyber project continues to make good progress against the known cyber risks and vulnerabilities.

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Critical Enablers				
Continue the Sellafield security enhancement programme.	2018/21		ON TARGET	

Other Sellafield 2018/19 Business Plan activities

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Continue the decommissioning and demolition of Windscale Pile Chimney Number 1.	2018/21		ON TARGET	
Continue the demolition of SEP Head End Stack.	2018/21		ON TARGET	
Complete the removal of remaining gloveboxes from Finishing Line 3.	2018/21		ON TARGET	
Spent Fuels				
Completion of THORP reprocessing.	2018/21	ACHIEVED		
Continue to receive and manage AGR spent fuel from EDF Energy.	2018/21		ON TARGET	
Continue to reprocess Magnox spent fuel in line with Magnox Operating Plan (MOP) 9.	2018/21		BEHIND TARGET	At the end of March 2019 the MOP programme was around 100te behind the MOP9 target, with the in-year production target at Sellafield missed. There is still confidence in Sellafield's ability to recover the position by Dec 2020 given actions to reduce risk and maximise plant availability in the final two years of operation.
Nuclear Material				
Continue the safe and secure storage of plutonium in line with UK policy.	2018/21		ON TARGET	
Continue to receive and securely store special nuclear materials from Dounreay.	2018/21		ON TARGET	
Ensure safe, secure management of our uranics inventory.	2018/21		ON TARGET	
Integrated Waste Management				
Continue to process Highly Active Liquor (HAL) through the Waste Vitrification Plant.	2018/21		ON TARGET	
Continue the programme to repatriate overseas owned vitrified waste to its country of origin.	2018/21		ON TARGET	
Continue to generate savings and preserve capacity at the LLW Repository by diversion of materials into the supply chain for alternate treatment.	2018/21		ON TARGET	
Continue the programmes to receive and treat waste materials from Harwell and AWE Aldermaston.	2018/21		ON TARGET	
Critical Enablers				
Continue with improvements to the site utilities infrastructure.	2018/21		BEHIND TARGET	Improvements to the Infrastructure Utilities continue through the delivery of maintenance (short term), asset care (medium term) and projects (long term). An incident involving damage to a high voltage underground electric cable during excavation works has impacted project delivery.
Continue the Sellafield Limited Transformation to support future business requirements.	2018/21		ON TARGET	
Continue the project to improve and replace Analytical Services.	2018/21		ON TARGET	
Progress the improvement of project delivery on site.	2018/21		ON TARGET	
Support Small and Medium Enterprise organisations by targeting overall spend with them in line with the government Growth Agenda.	2018/21		ON TARGET	
Continuation of information assurance activities and supporting processes.	2018/21		ON TARGET	
Prepare the business to move out of reprocessing.	2018/21		ON TARGET	
Implement and embed the long-term partnership with the supply chain in Major Projects (Programme and Project Partnership - PPP).	2018/21		ON TARGET	
Work collaboratively with NuGen to manage issues and opportunities arising from the neighbouring Moorside site.	2018/21		ON TARGET	Noting that Moorside project has now ben paused.
Progress with the project to provide contingency against failure of vessels and pipework in the Site Ion Exchange Plant.	2018/21		ON TARGET	

Business Performance - Site Licence Companies

Magnox

Magnox Ltd is responsible for the operation of 11 sites: Berkeley, Chapelcross, Dungeness A, Harwell, Hinkley Point A, Hunterston A, Oldbury, Sizewell A,Trawsfynydd, Winfrith and Wylfa and managing Bradwell site in Care and Maintenance.
Operated by PBO: Cavendish Fluor Partnership – (Cavendish Nuclear and Fluor Corporation) until 31 August 2019. On the 1 September 2019 Magnox Limited will become a wholly owned subsidiary of the NDA.

Magnox Decommissioning Programme

Programme objective

To complete defuelling in line with the Magnox Operating Programme (MOP) and to deliver the 12 Magnox sites into their Care and Maintenance (C&M) interim state (note for Winfrith this will be its final end state).

Progress

Decommissioning across most Magnox sites continues broadly to plan, with continuous challenge and review of the baseline to improve efficiencies in delivery. Performance issues have resulted in delays to planned work at some Magnox sites, with the potential to challenge Interim States / Interim End States.

All three Low Level Waste (LLW) diversion targets set in the 2018/19 Joint Waste Management Plan have been met and legacy waste stockpiles are being reduced.

The Care and Maintenance programme, in partnership with Office for Nuclear Regulation Civil Nuclear Security, continues to test security arrangements in preparation for Magnox sites entrance into Care and Maintenance, following entry of the first site (Bradwell in November 2018).

An asbestos management improvement plan continues to be delivered across all Magnox sites.

The Magnox Transition Programme is on track to deliver the successor to the current Magnox PBO business model by the 1 September 2019, this being the completion date of the Magnox Termination Period.

Magnox Decommissioning Programme 2018/19 Business Plan activities

Magnox Ltd

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Bradwell to achieve its Interim State and move into the effective Care and Maintenance phase.	2018/19	MISSED		Bradwell has entered Care and Maintenance; however it will not reach its Interim State until 2019/20
Continuation of estate decommissioning and demolition activities working towards Interim States.	2018/21		ON TARGET	
Continue preparations for Winfrith to enter its Interim State.	2018/21		BEHIND TARGET	A review is currently being undertaken of all lifetime plans (LTPs) across the programmes, sites and central functions. This is to enable a fresh look at the work left to deliver on the Winfrith site to take it into its Interim End State. Once this is agreed priorities will be set taking into account the funding available.

Business Performance - Site Licence Companies

Magnox

Magnox Decommissioning Programme 2018/19 Business Plan activities

Magnox Ltd

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Spent Fuels				
Completion of Magnox fuel flask fleet management and transfer responsibility to Sellafield Ltd.	2018/21		ON TARGET	A transfer plan has been approved and work is ongoing to deliver the identified activities.
Completion of Wylfa defueling.	2018/21		ON TARGET	
Management of MOP9 and co-ordination of Magnox fuel management activities with Sellafield and Dounreay.	2018/21		ON TARGET	
Nuclear Materials				
Continuation of the programme for the transfer of nuclear materials.	2018/21		ON TARGET	
Integrated Waste Management				
Delivery of the Magnox elements of the estate-wide low level waste management plan including diversion to alternative treatment.	2018/21		ON TARGET	
Progression of activities to retrieve, process and package wastes.	2018/21		ON TARGET	
Asbestos management – Continued focus on the major risk of asbestos including production of an optimised, underpinned strategy for asbestos, without detriment to Care and Maintenance.	2018/21		ON TARGET	
Critical Enablers				
Support to the Government in activities to deliver the new build agenda and preparations for decommissioning the AGR fleet.	2018/21		ON TARGET	
Continuation of information governance activities and supporting processes.	2018/21		ON TARGET	
Support Small and Medium Enterprise organisations by targeting overall spend with them in line with government Growth Agenda	2018/21		ON TARGET	
Support to NDA in property activities to reduce NDA decommissioning liability and achieve best value on asset disposal.	2018/21		ON TARGET	.
Development of Interim End State approaches, utilising revised management arrangements.	2018/21		ON TARGET	
Enacting management arrangements for Care and Maintenance state.	2018/21		ON TARGET	

Berkeley

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Decommissioning and demolition activities ongoing in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	On target for activities planned during the 2018/21 business plan period.
Integrated Waste Management				
Continuation of retrieval and packaging activities in the active waste vaults.	2018/21		BEHIND TARGET	Fuel Element Debris retrievals ongoing but issues with waste characteristics have impacted programme schedule and review of these impacts is ongoing.
Continuation of design and commissioning of shielded area waste retrieval equipment.	2018/21		ON TARGET	
Continuation of waste retrieval plant design, commissioning and packaging.	2018/21		ON TARGET	
Design and Build of encapsulation facility	2018/21		ON TARGET	

Bradwell

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/19	ACHIEVED		
Ponds complex and contaminated structures (vaults) completed for entry into Care and Maintenance.	2018/19	ACHIEVED		
Completion of final closures for reactor buildings safestore	2018/19	ACHIEVED		
Site completes activities to enable entry into effective Care and Maintenance.	2018/19	ACHIEVED		
Interim State of lead site achieved.	2018/19	MISSED		Bradwell has entered Care and Maintenance; however it will not reach its Interim State until 2019/20.
Integrated Waste Management				
Completion of transition management arrangements for Care and Maintenance.	2018/19	ACHIEVED		

Business Performance - Site Licence Companies

Magnox

Chapelcross

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Continuation of pond operations.	2018/19	ACHIEVED		
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	
Integrated Waste Management				
Intermediate Level Waste (ILW) retrievals.	2018/19	DEFERRED		ILW Skip Retrievals forecasted to complete in 2020.
Interim Storage Facility (ISF) constructed and commissioned.	2018/19	MISSED		ISF constructed but will not be commissioned until June/July 2019.

Dungeness A

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Ponds cleaned and stabilised.	2018/19	MISSED		Ponds have been drained, with decontamination ongoing. Delayed due to operational issues within plant on site
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	
Integrated Waste Management				
Increase waste conditioning facility capability.	2018/19	MISSED		The initial location identified was found to be suboptimal therefore the capability is to be installed at another location on site. Further scope slowed down due to funding deferrals.
Retrievals, treatment and transport of ILW.	2018/19		ON TARGET	
Bulk asbestos removal from reactor buildings.	2018/21		ON TARGET	

Harwell

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Continuation of Liquid Effluent Treatment Plant (LETP) area environmental restoration.	2018/21		ON TARGET	
Decommissioning and demolition activities.	2018/21		ON TARGET	
Nuclear Materials				
Continuation of the programme for the transfer of nuclear materials and contact-handled ILW.	2018/21		ON TARGET	
Integrated Waste Management				
Completion of ILW Store construction.	2018/19	ACHIEVED		
Recovery, processing and packaging of solid ILW.	2018/21		ON TARGET	
Preparations for decommissioning of radium chemistry facilities.	2018/21		BEHIND TARGET	Characterisation works slowed and plan currently being reviewed, with programme delay likely.

Hinkley Point A

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	
Complete deplant and demolition of Turbine Hall.	2018/21		ON TARGET	
Integrated Waste Management				
Complete Wet Waste and Vessel consolidations.	2018/19	ACHIEVED		
Continuation of FED retrieval activities..	2018/21		BEHIND TARGET	Fuel Element Debris waste retrievals have been significantly delayed and a review of the methodology is under way to recover the plan.
Continuation of ILW skip management arrangements.	2018/21		ON TARGET	
Complete waste conditioning facility construction and commissioning.	2018/21		ON TARGET	
Continue preparations for Sludge Canning Building waste retrievals.	2018/21		ON TARGET	

Business Performance - Site Licence Companies

Magnox

Hunterston A

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	
Integrated Waste Management				
Completion of solid ILW encapsulation plant construction and mechanical and electrical installation.	2018/21		BEHIND TARGET	Solid Intermediate Level Waste Encapsulation (SILWE) project behind schedule. Recovery plan is in place.
Progressing of ILW retrievals, processing and storage activities.	2018/21		ON TARGET	

Oldbury

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	
Complete ponds decommissioning preparations.	2018/21		ON TARGET	
Integrated Waste Management				
ILW retrieval enabling works.	2018/21		ON TARGET	
Progression of activities supporting consolidated ILW storage.	2018/21		ON TARGET	
Commence retrievals, treatment and transport of ILW.	2018/21		ON TARGET	

Sizewell A

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	
Continuation of ponds decommissioning.	2018/21		ON TARGET	
Ponds draining and stabilisation.	2018/21		ON TARGET	
Integrated Waste Management				
FED retrievals.	2018/21		BEHIND TARGET	Delay to progression on the Fuel Element Debris (FED) retrieval overbuilding is likely to have an effect on FED retrievals dates – a revised schedule being developed.
ILW retrieval enabling works.	2018/21		BEHIND TARGET	The Waste Programme has prioritised delivery of other site plants, resulting in delay to progress at Sizewell.
Progression of activities supporting consolidated ILW storage.	2018/21		BEHIND TARGET	Some delay due to funding constraints deferring scope.

Trawsfynydd

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Continue developing strategy for ponds End State conditions.	2018/21		ON TARGET	
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	
Integrated Waste Management				
Completion of sludge and resin encapsulation.	2018/19	MISSED		Bulk sludge recovery is complete. Final plant washout is in progress and is nearing completion. Completion is now forecast for quarter one of 2019/20.
FED retrievals and encapsulation.	2018/21		ON TARGET	

Winfrith

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
SGHWR – development of the detailed design to remove the reactor core.	2018/19	MISSED		Works progressing but with some delay which is not recoverable. Forecast to complete Sept 2019.
SGHWR – completion of primary containment decommissioning activities.	2018/19	MISSED		Works progressing but with delay which is unlikely to be recoverable.
DRAGON – continue reactor decommissioning.	2018/21		ON TARGET	
SGHWR – continue design and build of reactor decommissioning equipment.	2018/21		BEHIND TARGET	Works progressing but with some delay.
SGHWR – continue decommissioning of the primary and secondary containment areas.	2018/21		BEHIND TARGET	Works progressing but with some delay which is not recoverable.
Decommissioning and demolition activities.	2018/21		ON TARGET	

Wylfa

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Decommissioning and demolition activities in preparation for entry into Care and Maintenance.	2018/21		ON TARGET	
Provision of support and assets to nuclear new build.	2018/21		ON TARGET	Noting that Horizon nuclear new build programme has been paused
Spent Fuels				
Defueling activities in line with MOP9	2018/21		ON TARGET	
Integrated Waste Management				
Continuation of ILW retrievals and packaging.	2018/21		ON TARGET	
Continuation of waste retrieval enabling activities.	2018/21		ON TARGET	

Business Performance - Site Licence Companies

Dounreay Site Restoration Ltd

DSRL is contracted to carry out the decommissioning of the Dounreay site as well as the operation of the Low Level Waste (LLW) disposal facility next to the licensed site. In March 2015, a revised Lifetime Plan was approved, incorporating scope to move material from Dounreay to Sellafield, which had not been agreed or finalised when the original contract was signed.

In July 2015, this scope was further updated. Dounreay will continue to deliver within its assigned annual site funding limits, while also delivering the additional scope. The contract extension required for the additional scope is still earlier than the pre-competition baseline for achieving Interim End State. The activities below give the current understanding of the updated plans and are subject to change.

Operated by PBO: Cavendish Dounreay Partnership Ltd – Cavendish Nuclear, Jacobs and AECOM

Dounreay Decommissioning Programme

Programme objective

To achieve an Interim End State for the Dounreay site such that no further work will be required, other than natural decay of radioactive materials to achieve the closure thresholds required for site end state.

Progress

The 2018/19 Business Plan activity target for the demolition of the Dounreay Material Test Reactor (DMTR) building complex (excluding the reactor) was deferred due to the reprioritisation of the Dounreay material consolidation programme. The overall target associated with the multi-agency materials consolidation was missed as a result of additional scope requirements and off-site constraints however some significant interim targets were achieved during the year. The target date to achieve the Interim End State and the associated Target Cost has been reviewed as a consequence of supporting the consolidation of 'exotic' fuels at Sellafield.

Dounreay Decommissioning Programme 2018/19 Business Plan activities

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Dounreay Materials Test Reactor (DMTR) building complex structures demolished (excluding the reactor).	2018/19	DEFERRED		As part of the overall programme realignment due to the exotic programme, this work was deferred until 2022; dates are now aligned with the accepted contractor programme to complete the work.
Spent Fuels				
Exotics – complete delivery of all unirradiated fuels.	2018/19	MISSED		Completion date moved to late 2019.
Critical Enablers				
Support small and medium enterprise (SME) organisations by measuring and reporting overall spend with them, in-line with the government growth agenda.	2018/21		ON TARGET	

Business Performance - Site Licence Companies

Low Level Waste Repository Ltd

Low Level Waste Repository Ltd (LLWR) is responsible for both the operation of the LLW site and the delivery of the National Low Level Waste Programme on behalf of the NDA.

Operated by PBO: UK Nuclear Waste Management Ltd – AECOM, Studsvik AB, Orano SA

National Low Level Waste (LLW) Programme

Programme objective

To champion the adoption of the Waste Hierarchy (prevention, minimisation, re-use, recycling and disposal) across the NDA Group to significantly reduce the costs of dealing with low level waste and to avoid the need for a second UK low level waste repository.

Progress

There have been 1695 shipments of LLW through the waste management service frameworks this financial year, a significant increase over last year (30%) and continuing a trend of year-on-year increases.

There has been £95 million of cost avoidance against the contract to date, from the diversion of LLW waste away from disposal at LLWR against a Year 1 target of £84 million, making good progress against the contract commitment.

Tranche 1 of the Repository Development Programme to cap and close the existing Vault 8 and adjacent trench disposal facilities continues to progress with completion of the 'Evaluate Phase' of the enabling works being completed to plan along with the completion of the detailed design of the 'cut off wall' and preliminary design for the 'void fill' from Vault 8 Closure.

Decommissioning of the historic Plutonium Contaminated Material (PCM) facilities has maintained good progress despite ongoing challenges associated with legacy waste and contamination levels; Decommissioning of three of the four PCM Magazine Facilities was completed to meet 2018/19 target dates.

LLWR has also continued with site security enhancements with construction of the civil structure for the Security Fence Control Centre being completed and fit out of the mechanical and electrical and security systems being progressed.

Business Performance - Site Licence Companies

Low Level Waste Repository Ltd

National Low Level Waste (LLW) Programme 2018/19 Business Plan activities				
Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Complete decommissioning of Plutonium Contaminated Material (PCM) facilities. 2018/19	2018/19	MISSED		Level of contamination found within facilities was greater than expected – Forecast May 2019 Completion
Ongoing site preparation for phased construction of the final cap for trenches 1 to 7 and Vault 8. 2018/21	2018/21		ON TARGET	
Integrated Waste Management				
Delivery of the National LLW Programme to optimise LLW Strategy implementation. Work with consigning SLC's to improve waste forecasts and inventory and continue segregated waste, treatment and disposal services.	2018/21		ON TARGET	
Work with the NDA to support innovation in approaches to waste management.	2018/21		ON TARGET	
Type B Programme fleet commences key transport scope.	2018/21		ON TARGET	
Critical Enablers				
Complete Site Security Programme.	2018/19	ACHIEVED		
Support hazard reduction across the NDA estate.	2018/21		ON TARGET	
Manage and operate LLWR safely to provide an effective UK disposal service.	2018/21		ON TARGET	
Consideration of options to further optimise operations at the LLWR.	2018/21		ON TARGET	
Continue to pursue overall cost savings in delivery of the Lifetime Plan.	2018/21		ON TARGET	
Support Small and Medium Enterprise organisations by targeting overall spend with them in line with the government Growth Agenda.	2018/21		ON TARGET	

Business Performance - Other businesses that support the NDA mission

Urenco Nuclear Stewardship Ltd

Owned by: URENCO

The NDA Capenhurst site is located near Ellesmere Port in Cheshire, and was formerly home to uranium enrichment plant and associated facilities that ceased operation in 1982.

In 2012, the site was transferred to URENCO, owners of the adjacent licensed site, and was amalgamated into a single nuclear licensed site, paving the way for URENCO to invest in new facilities, in order to meet future customer demand. As part of this transfer, URENCO established Urenco Nuclear Stewardship (UNS), formerly known as Capenhurst Nuclear Services, to provide responsible management of uranic materials and carryout remediation work on behalf of NDA.

UNS manages 95% of the NDA's uranic inventory and provides broader decommissioning and remediation works for redundant facilities, in order to utilise space to maximise efficiency. NDA and UNS have also signed an agreement for the processing of UK Government-owned by-product/legacy material from uranium enrichment (known as 'Tails') through URENCO's Tails Management Facility.

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Progress Legacy Cylinder Facility (LCF) Design.	2018/19	DEFERRED		Agreement to defer appointment of EPC contractor to design the LCF
Continued safe storage of uranic materials.	2018/21		ON TARGET	

Springfield Fuels Ltd

Owned by: Westinghouse Electric UK Holdings Ltd

Springfields is a nuclear fuel manufacturing site and is located near Preston in Lancashire. The site is operated by Springfields Fuels Limited (SFL) and used to manufacture a range of fuel products for both UK and international customers and decommissioning historic uranic residues and redundant facilities.

From April 2010, the NDA permanently transferred ownership of the company to Westinghouse Electric including the freedom to invest for the future under the terms of a new 150 year lease. SFL is contracted to provide decommissioning and clean up services to the NDA to address historic liabilities.

Activity	Timescale	2018/19 Target	2018/21 Target	Comments
Site Decommissioning and Remediation				
Progress decommissioning of the Magnox Fuel Production facilities.	2018/21		ON TARGET	
Continue management of historical legacy materials and facilities.	2018/21		ON TARGET	

Business Performance - Other businesses that support the NDA mission

Direct Rail Services Ltd

Wholly owned by the NDA

Direct Rail Services Ltd (DRS) was established in 1995 to provide rail transport for nuclear material in the UK.

DRS has built up industry-leading expertise in the movement of spent nuclear fuel, decommissioning waste and in providing support for nuclear construction. DRS continues to provide a co-ordinated service to the nuclear estate. As part of its mission, DRS looks to be the world leader in safe, secure and reliable nuclear rail logistics in support of the NDA mission, harnessing a culture of innovation, pride, respect and environmental awareness whilst providing value for money on behalf of the UK taxpayer.

During the year, DRS was named Business of the Year 2018, by the Rail Freight Group.

Key Activity 2018/21	2018/19 Status
Delivery of the rail transport element in support of the completion of MOP	ON TARGET
Support national nuclear material rail movements for Harwell, Winfrith and DSRL.	ON TARGET
Support AGR fuel movements by rail for EDF Energy from stations to Sellafield.	ON TARGET
Support the discharge of NDA obligations with respect to MOD Nuclear rail transportation.	ON TARGET
Provide value for money to the tax payer through the execution of identified non-nuclear work that complements the skills and capabilities required to support the core nuclear mission.	ON TARGET
Provide rail authority expertise to the NDA and consider areas of synergy between DRS and INS in support of the NDA's strategic transport capability review.	ON TARGET
Programme manage the manufacture of new rail wagons to support Magnox and EDF Energy.	ON TARGET
Operate and maintain a fleet of locomotives to support NDA operations.	ON TARGET
Attract and retain the necessary skills, capability and diversity of talent to deliver our rail logistics business in a safe, secure and reliable manner.	ON TARGET

Radioactive Waste Management Ltd

Wholly owned by the NDA

RWM's vision is a safer future by managing radioactive waste effectively to protect people and the environment.

RWM's mission and responsibility is to plan for, and ultimately deliver, geological disposal of higher activity wastes in accordance with government policy.

This includes developing a Geological Disposal Facility (GDF) and providing waste management solutions.

Key Activity 2018/21	2018/19 Status
Support the launch of the geological disposal siting process in line with government policy.	ON TARGET
Implement government policy on geological disposal of Higher Activity Waste (HAW) through effective engagement with willing communities in the delivery of a site for the construction and operation of a GDF	ON TARGET
Deliver a robust technical programme to drive our design and safety assessment work.	ON TARGET
Develop Radioactive Waste Management Limited into a competent delivery organisation.	ON TARGET
Work pro-actively with waste producers, planning for and delivering disposability assessments for their range of wastes.	ON TARGET
Develop and implement joint Integrated Radioactive Waste Programme with LLWR.	ON TARGET

Business Performance - Other businesses that support the NDA mission

International Nuclear Services Ltd

Wholly owned by the NDA

International Nuclear Services Ltd (INS) plays a vital role in support of the NDA's mission, managing a large portfolio of domestic and international contracts for nuclear fuel recycling and nuclear transport services on our behalf.

INS operates Pacific Nuclear Transport Ltd (PNTL), the world's most experienced shipper of nuclear materials.

In 2018/19, the management of NDA's commercial contracts for nuclear fuel recycling and the commercialisation of NDA-owned intellectual property were transferred to the NDA Corporate Centre.

INS will continue its focus on the return of vitrified wastes to their country of origin. In addition INS will continue to provide transport services to existing international customers whilst also developing opportunities for new commercial business both internationally and in support of the UK decommissioning programme.

Key Activity 2018/21	2018/19 Status
Continue the management of contracts with international customers for spent fuel business.	ON TARGET
Manage uranium and plutonium services for international spent fuel business.	ON TARGET
Transport nuclear materials including Spent Fuel, Mixed Oxide (MOX) fuel, vitrified High Level Waste (HLW) and conditioned Intermediate Level Waste (ILW) internationally and shipments of materials under the US Government's Material Management and Minimisation (M3) initiative.	ON TARGET
Support the NDA in the development and implementation of transport solutions to enable the UK decommissioning programme.	ON TARGET
Continue, where appropriate, to seek opportunities for new business within shipping, transport package and system design for radioactive materials, and acting as an agent for the overseas sale of UK Intellectual Property in relation to spent fuel and waste management, nuclear decommissioning and transport.	ON TARGET

NDA Archives Ltd

Wholly owned by the NDA

NDA Archives Ltd operates as a separate delivery organisation for the provision of archive and records management services primarily to the NDA Group. They have established a number of Service and End User Agreements and are overseeing the management of a Commercial Partner (Restore Scan Limited) who is operating a purpose-built archive facility, Nucleus, the Nuclear and Caithness Archive, in Wick.

The NDA owns and is accountable for records from across the Group. They have developed a programme in order to apply appropriate records management controls and to meet the statutory and regulatory obligations placed on the NDA, as a public authority, and the site licence companies as duty holders. The principal role of Nucleus is to consolidate, appropriately store, digitise and preserve these records ensuring that they remain secure, that their integrity stays intact (many of them will be required for 300+ years) and that they can be accessed in line with legislation and the relevant business requirements.

The facility was opened in early 2017 and since then has accessioned hundreds of thousands of NDA records from, amongst others, the ex-UKAEA sites – Harwell and Dounreay, and from a number of other smaller archive collections. They have also welcomed thousands of visitors; both members of the public and sponsored visits from the global nuclear community including JAEA, OECD Nuclear Energy Agency and the IAEA. The focus now is on the archive holdings from both Sellafield and Magnox sites and it is expected that this sift and lift project will take a minimum of three years to complete.

Key Activity 2018/21	2018/19 Status
Nucleus working in accordance with the National Archive's Accreditation Standards (regulatory best practice).	ON TARGET
Complete relocation of the 'known' legacy archives, to include all ex-UKAEA records.	ON TARGET
Complete relocation of all NDA-owned and archived records above OFFICIAL-SENSITIVE.	ON TARGET
Continuing to work with interested third parties to potentially provide services to others outside the NDA estate.	ON TARGET
Optimise usage of the Nucleus facility with respect to Business Continuity and Resilience Planning requirements of the NDA and its estate.	ON TARGET

Business Performance - Other businesses that support the NDA mission

Rutherford Indemnity Ltd

Wholly owned by the NDA

Rutherford Indemnity is a regulated Guernsey insurance company dedicated to the provision of property, nuclear liability and other insurance to the NDA and Group.

Working with the NDA and its brokers, Rutherford agrees the risks that it is willing to insure, taking into account its ability to withstand losses. In some instances, Rutherford arranges additional cover from commercial reinsurers with approved credit ratings.

The company engages closely with the NDA Group to understand and manage the risks faced and to drive down losses, and focus external insurance spend on those policies required by legislation. In this way it is able to help the NDA drive maximum value from its insurance programme.

There have been no major claims reported during the year.

Rutherford has substantial insurance reserves and its investment portfolio is overseen by an Investment Committee. Over the last year, these investments generated a return of 4.7%, notwithstanding periods of volatility, remaining within the strict risk limits and ethical guidelines imposed by the Board.

Over the 5 year period of inception of the current investment strategy, a return of 25.5% was achieved compared to the target of 18.2%.

The company operates in accordance with the regulations issued by the Guernsey Financial Services Authority, and this year welcomed an additional locally based independent director to further strengthen their Board.

Key Activity 2018/21	2018/19 Status
Provide optimal insurance coverage to the NDA to support its estate-wide insurance programme and exploit opportunities to reduce overall cost of insurable risk.	ON TARGET
Explore all avenues to develop potential innovative solutions to the increased financial security or insurance requirements resulting from the Nuclear Installations (Liability For Damage) Order 2016 and to respond to emerging demands for new or additional policy cover.	ON TARGET
Continue to deliver the target return on the investment portfolio, protecting Rutherford's ability to offer insurance on a cost effective basis, maintaining liquidity in order to be able to respond promptly to major loss.	ON TARGET
Continue to explore ways to use a prudent proportion of Rutherford's investment portfolio to support infrastructure investment in the NDA estate.	ON TARGET
Implement new ways of working following changes in the group broking arrangements designed to improve efficiency and reduce costs.	ON TARGET
Re-compete contract for management of Rutherford Indemnity Limited (captive management contract).	ON TARGET

NDA Properties Ltd

Wholly owned by the NDA

NDA Properties Ltd owns and manages properties that are located outside the boundaries of nuclear licensed sites. In line with the NDA's Land and Property Management Strategy, these assets are selectively developed and their use optimised to benefit the NDA mission.

Key Activity 2018/21	2018/19 Status
Effective and proactive management of the property portfolio.	ON TARGET
Development of Off Site Command Facility at Moresby for Sellafield Ltd by 2019.	ON TARGET
Development of offices at Warrington to replace Hinton House by 2021.	ON TARGET
Disposal of surplus assets to raise capital receipts of circa £500,000 per annum.	ON TARGET

Glossary and abbreviations

A&RAC	Audit and Risk Assurance Committee
AGR	Advanced Gas-cooled Reactor
BEIS	Department for Business Energy and Industrial Strategy
BEP	Box Encapsulation Plant
BEPPS-DIF	Box Encapsulation Plant Production Store-Direct Import Facility
C&AG	Comptroller and Auditor General
C&M	Care and Maintenance
CE	Critical Enabler
CETV	Cash Equivalent Transfer Value
CFP	Cavendish Fluor Partnership
CNC	Civil Nuclear Constabulary
CNPP	Combined Nuclear Pension Plan
CNS	Civil Nuclear Security
CSRP	Cyber Security and Resilience Programme
DMTR	Dounreay Materials Test Reactor
DRS	Direct Rail Services Ltd
DSRL	Dounreay Site Restoration Ltd
ED&I	Equality, Diversity and Inclusion
ExCo	Executive Committee
FED	Fuel Element Debris
FGMSP	First Generations Magnox Storage Pond
FReM	Government Financial Reporting Manual
GDF	Geological Disposal Facility
HAL	Highly Active Liquor
HAW	Higher Activity Waste
HEU	Highly Enriched Uranium
HMG	Her Majesty's Government
HR	Human Resources
HSE	Health and Safety Executive
HSSSE	Health, Safety, Security, Safeguards and Environment
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
ILW	Intermediate Level Waste
INES	International Nuclear and Radiological Event Scale
INS	International Nuclear Services Ltd
ISF	Interim Storage Facility
LCF	Legacy Cylinder Facility
LINC	Liaise, Innovate, Network, Collaborate
LLW	Low Level Waste
LLWR	Low Level Waste Repository Ltd
LP&S	Legacy Ponds and Silos
LTIP	Long-Term Incentive Plan
LTP	Lifetime Plan
MOP9	Magnox Operating Plan 9
MOX	Mixed Oxide Fuel
MSSS	Magnox Swarf Storage Silo
NAO	National Audit Office
NDA	Nuclear Decommissioning Authority
NDPB	Non-Departmental Public Body
NED	Non-Executive Board Director
NSSG	Nuclear Skills Strategy Group
ONR	Office for Nuclear Regulation
P&PC	Programmes and Projects Committee
PAC	Public Accounts Committee
PBO	Parent Body Organisation
PCM	Plutonium Contaminated Material
PCSPS	Principal Civil Service Pension Scheme
PFCS	Pile Fuel Cladding Silo
PFSP	Pile Fuel Storage Pond
PNTL	Pacific Nuclear Transport Ltd
PPP	Programme and Projects Partners
QPR	Quarterly Performance Review
R&D	Research and Development
REMCO	Remuneration Committee
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
RWM	Radioactive Waste Management Ltd
S&R	Security and Resilience
S&SC	Safety and Security Committee
SDP	Silos Direct encapsulation Plant
SEP	Silo Emptying Plant
SFL	Springfields Fuels Ltd
SGHWR	Steam Generating Heavy Water Reactor
SIRO	Senior Information Risk Owner
SLC	Site Licence Company
SME	Small and Medium-sized Enterprises
SSEP	Sellafield Security Enhancement Programme
STEM	Science, Technology, Engineering and Mathematics
THORP	Thermal Oxide Reprocessing Plant
UKGI	UK Government Investments
UKNWM	UK Nuclear Waste Management Ltd

Glossary and abbreviations

Care and Maintenance	When a Magnox reactor site is kept in a state of Care and Maintenance, it is made safe for a planned period of quiescence, after which decommissioning activities will commence.	NDA Authority	This is used to describe the Non-Departmental Public Body created under the Energy Act and the performance of which is reported in this document.
End State	Condition of a nuclear site (including the land, structures and infrastructure) following completion of decommissioning and clean-up activities, and any controls to be applied during its subsequent use.	NDA Estate	The 12 businesses that support the NDA mission – Sellafield, Magnox, Dounreay, LLWR, DRS, INS, RWM, NDA Archives, NDA Properties, Rutherford Indemnity, Springfield's Fuels Ltd and URENCO Nuclear Stewardship Ltd.
Interim State	An interim state describes the condition of a site or facility (including land) at specific points en-route to the site end state. It is a natural milestone or decision point in the decommissioning and remediation programme that typically represents a significant reduction in risk or hazard. An interim state does not automatically infer a period of quiescence; it can be followed by continuous or deferred decommissioning.	NDA Group	This is the group of businesses included in the statutory accounts. These are NDA, Sellafield, INS, DRS, RWM, NDA Archives, NDA Properties and Rutherford Indemnity.
Interim End State	An interim end state is a specific type of interim state. It marks the end of all physical works. No more active remediation will take place to achieve the site end state, i.e. further remediation will be passive for example as a consequence of radioactive decay or natural attenuation of contamination.	One NDA	A way of working more effectively and efficiently to maximise the opportunities within the group of businesses.

Useful links and documentation

Useful Links

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

Useful documentation

- NDA Strategy - March 2016
  (www.gov.uk/government/consultations/nuclear-decommissioning-authority-draft-strategy)
- NDA Business Plan 2018 to 2021
  (www.gov.uk/government/consultations/nuclear-decommisioning-authority-business-plan-2018-to-2021)
- Mid-Year Performance Report 2018-2019
  (www.gov.uk/government/publications/nda-mid-year-performance-report-2018-to-2019)
- NDA Corporate Centre: NDA: gender pay gap report and data 2018
  (www.gov.uk/government/publications/nda-gender-pay-gap-report-and-data-2018)
- Register of Director's Interests (www.gov.uk/government/publications/nda-register-of-directors-interests)
- NDA Direct Research Portfolio (DRP) Projects 2018/19:
  Quarter four update
  (www.gov.uk/government/publications/nda-direct-research-portfolio-drp-projects-quarterly-update)
- NDA 5-year research and development plan 2019 to 2024
  (www.gov.uk/government/publications/nda-5-year-research-and-development-plan-2019-to-2024)
- NDA SME Action Plan 2019 to 2022 (www.gov.uk/government/publications/nda-sme-action-plan-2019-to-2022)
- Sellafield Ltd Transformation Plan (www.gov.uk/government/publications/transformation-plan)

Contact Details

NDA Headquarters
Herdus House
Westlakes Science
& Technology Park
Moor Row
Cumbria
CA24 3HU
Contact: +44 (0)1925 802001
Visit: www.gov.uk/nda

London Office
10 Victoria Street
Westminster
London
SW1H 0NN

Harwell Office
Building 329 West
Thomson Avenue
Harwell Oxford
Didcot
Oxfordshire
OX11 0GD

Warrington Office
Hinton House
Birchwood Park Avenue
Risley
Warrington
WA3 6GR

Dounreay Office
D2003 – Zone 8
Dounreay
Thurso
Caithness
KW14 7TZ

Department of Business, Energy and Industrial Strategy
1 Victoria Street
London
SW1H 0ET

Principal Bankers
Government Banking Service
Wellesey Grove
Croydon
CR9 1WW

Auditor
The Comptroller and Auditor General
National Audit Office
157-197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Appendix A - Nuclear Provision

The Nuclear Provision - The cost of cleaning up the UK's historic nuclear legacy

Estimating Uncertainty

Estimates are classified according to the level of certainty, with ranges applied to reflect this. The NDA estate uses 4 different classes of estimate (A to D) in line with the principles of the HMT Green Book with A being the most certain, and D the least - credible outcomes for the latter could range from -50% to +300%. Inevitably as much of the expenditure of the NDA is not scheduled to start until many years or even decades in to the future, using as yet unknown technologies, then the estimates will tend towards class D.

Notwithstanding this uncertainty, the NDA continues to work with the SLCs, scrutinising their long-term plans and benchmarking them against best practice for project and programme costs and schedules and to ensuring that these plans are coherent and consistent with agreed strategies

Future Uncertainties

Whilst the legacy, and consequently the provision, is better characterised than previously it continues to be subject to ongoing risks that could impact on the costs of delivery, such as: a significant nuclear safety incident leading to delays in the management of current liabilities and/or increased costs; the discovery of currently unknown additional hazards or other challenges; future regulatory or Government policy changes; changes to the final agreed end state for sites and; changes to society's expectations and requirements.

Basis of Estimate - Sellafield

At Sellafield the nuclear provision estimate combines the cost projections from the current baseline with management estimates as to near term cost pressures and very long-term costs. The provision also includes, as in previous years, the estimated additional costs arising from the preferred strategy for the long term management of plutonium, which are not included in the current baseline.

The underlying undiscounted cost estimate for Sellafield (before adjustment for plutonium) has increased slightly during the year.

NDA Expenditure Profile

The first graph shows the undiscounted annual expenditure profile for future years (excluding NDA administrative and other non-programme costs, and some commercial costs), from lifetime cost projections from each of the SLCs.

The expenditure profile illustrates a downward trend in expenditure over the next 50 years, following a short-term peak over the next 10 years, as sites enter into Care and Maintenance, with subsequent increases in expenditure in the period from 2070 when final site clearance work on Magnox sites is undertaken.

What is the Nuclear Provision?

The nuclear provision is a single point number in the Statement of Financial Position which represents the discounted estimated cost of the decommissioning mission, calculated in accordance with Accounting Standards. It is important to understand the basis of this estimate and the inherent uncertainty around it, and therefore that it is simply a single point in a credible range of potential outcomes.

The NDA management's best estimate of the future costs of the estate is based on an assumed inventory of materials, using strategies for retrieval and disposal over several decades.
Each of these elements (quantity, method and time to treat) is uncertain in their own right, as is the cost of developing the necessary technology and plants to deal with these activities.

The quality of the forecast becomes less certain as time goes out, and acceptable standards of clean up and end states may change.

Future Opportunities

The Sellafield Performance Plan will continue to evolve in future years as the programme develops and individual projects progress.

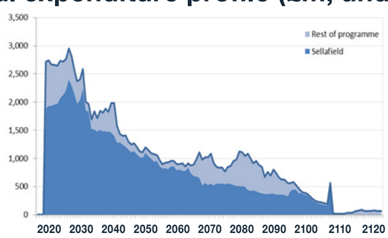
An example of this evolution is the change in strategy for the Magnox Swarf Storage Silo (MSSS) programme in which an alternative waste treatment solution has been proven to be feasible, enabling the removal of the planned Silos Direct encapsulation Plant (SDP) project and its replacement with a better technical solution which is also more efficient and lower cost alternative.

The NDA will continue to review and update the nuclear provision, and to incorporate the impact of new opportunities as they arise - for example acceleration of work on Legacy Ponds and Silos (LP&S), integrated waste management, optimised decommissioning and site restoration. Some of these opportunities may require us to reprioritise our allocation of funding in the short-term but with a reduction in the full lifetime costs.

Basis of Estimate - Other sites

The maturity of scope in the non-Sellafield SLC plans, and the successful introduction of private sector expertise has enabled NDA to drive value for money for the taxpayer, through the transition from cost reimbursable to target cost incentive fee contract structures. Over time this has led to stabilisation and ultimately reduction in the projected cost of decommissioning.

Total expenditure profile (£m, undiscounted)



Appendix A - Nuclear Provision

Uncertainty Range - Sellafield

The single point undiscounted estimate is **£94 billion.**
Examples of uncertainty around this figure:

- A 100% increase in major project costs post 2039 +£27.7 billion
- A 300% increase in major project costs post 2039, +£83.0 billion
- A 50% reduction in major project costs post 2039, -£13.8 billion

Undiscounted Nuclear Provision - Sellafield

£94 billion
(2017/18, £91.4billion)

Uncertainty Range - Other sites

The single point undiscounted estimate is **£30.3 billion**.
Examples of uncertainty around this figure:

- A 100% increase in Magnox final site clearance costs, +£5.7 billion
- A 3 year delay to DSRL Interim End State date, +£0.6 billion
- A 300% increase in GDF costs post 2037, +£23.6 billion
- A 50% reduction in GDF costs post 2037, -£3.9 billion

Undiscounted Nuclear Provision - Other sites

£30.3 billion
(2017/18, £29.6 billion)

Uncertainty Range - Total

The NDA estimates the total costs associated with the undiscounted nuclear provision to be within a potential range from **£99 billion** to **£232 billion.**

The nuclear provision represents a single point estimate within a range and is NDA management's judgement of future costs based on plans produced by the SLCs, accepted by the NDA and known changes in assumptions and facts. The increase in the undiscounted provision is due primarily to inflation year on year.

Undiscounted Nuclear Provision - Total

£124.3 billion
(2017/18, £121.0 billion)

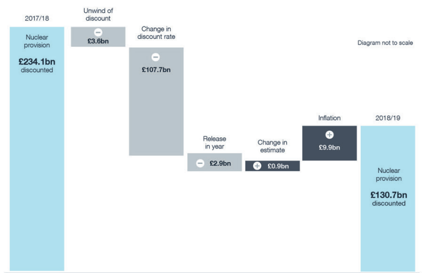
Discount Rate Sensitivity

A 0.5% decrease in the discount rates over the life of the estimate would increase the provision by approximately **£28 billion** while a 0.5% increase would reduce the provision by approximately **£20 billion.**

Changes in Discounted Nuclear Provision

The discounted nuclear provision (Authority accounts) at the end of 2017/18 was £234.1 billion and movements since then have been: The value provided for 2018/19 released from the provision, -£2.9 billion increases from inflation +£9.9 billion and the unwinding of the existing discount, -£3.6 billion, which are applied to the provision every year, the impact of the changes in discount rates, -£107.7 billion and cost estimate changes which increase the obligated liability estimate by £0.9 billion

Movements in Nuclear Provision 2018/19 £bn



Discounting

The nuclear provision estimate is discounted (adjusted to present values) to produce the figure published in the accounts.

Discount rates are revised each year by HM Treasury to reflect the UK government's borrowing rate and forecast future inflation.

The rates are currently:
- Short-term (0-5 years) -1.34%,
- Medium-term (6-10 years) -0.96%,
- Long-term (11-40 years) -0.11%.
- Very long-term (over 40 years) -0.11%.

The application of these rates produce the overall discounted total as shown in the Authority accounts of £130.7 billion.

Discounted Nuclear Provision - Total (Authority)

£130.7 billion
(2017/18, £234.1 billion)

Appendix B - NDA Group - Summary of events confirmed as INES1 or higher during 2018/19

Site	Event Description	Final rating and duty holders comments on the event
INES 1 events		
Magnox - Wylfa	Incorrectly fitted fuel flask lid seal	Operators found an incorrectly fitted flask lid seal during checks. Sellafield fitted the seal, and the flask carried irradiated fuel from Wylfa to Sellafield with the incorrectly fitted seal on at least two occasions. The event had no safety consequence, but an INES1 rating is appropriate because the seal is a design requirement for emergency containment.
Sellafield	Corroded ventilation ductwork	An inspection at site discovered a hole in ventilation ductwork which served one of the operational plants. Although the hole was down-stream of the plant's filters, some air had escaped through the hole before reaching the authorised discharge point. In December 2018, the Environment Agency served Sellafield with an Enforcement Notice (the first at Sellafield for ten years) for this event requiring Sellafield to repair the defects, improve maintenance and develop a programme of inspection and repair of the ventilation ductwork across site. The event was subsequently rated INES1 and the rating was confirmed on 24 April 2019 by the National Officer.

Process notes

- It is the site licence company's duty to report and investigate events on the site, to take action to control risks, and prevent recurrence. However, the NDA takes the safety of people working with radiation seriously and we have, working with the site licence companies concerned, reviewed all of the above. We were content that site licence companies had carried out a proper investigation, and learned from what happened.
- The International Nuclear and Radiological Event Scale (INES) is a tool for communicating the safety significance of nuclear and radiological events to the public. Events are rated at seven levels. A level 1 INES event is rated as an anomaly.
- Events are given a provisional INES rating by the site licence company
- The provisionally rated event is referred to the National Officer (an ONR Inspector), who decides the final rating reported to IAEA
- The latest information on INES events can be found at https://www-news.iaea.org/

Appendix C - Major Projects Cost and Schedule

Major projects are defined as those projects with a lifetime cost of £100m or more with a business case approved by Government. The historic cost estimates in the table below are expressed in money values of the year in which the estimate was prepared (i.e. have not subsequently been adjusted for inflation).

Project/Programme	Year initiated	Estimated cost at initiation (£m)	Current business case cost (£m)	Estimated cost Mar 2019 (£m)	Estimated end date at initiation	Current business case end date	Estimated end date Mar 2019
First Generation Magnox Storage Pond (FGMSP) - Bulk Sludge and Fuel Retrievals	2004	229.0	400.0	337.1	Dec 2012	Mar 2020	May 2019
Key reasons for changes to cost and/or end date from year initiated to March 2019 Cost has been stable for some time with only slight variance in year due to inflation. Increases in cost and schedule compared to initiation were associated with the complexity of installing new equipment into an existing radioactively contaminated and sensitive nuclear facility as well as project performance issues. The project forecasts to complete in June 2019 well within the business case. The improved completion date reflects the retirement of risks as the project nears completion.							
Magnox Swarf Storage Silo (MSSS) - SEP Solid Waste Storage Retrievals	-	-	880.0	810.0	-	Sept 2023	Mar 2023
Key reasons for changes to cost and/or end date from year initiated to March 2019 A full cost and schedule review has been conducted with the outputs reflected in the revised forecasts with no change to the forecast completion date nor to the business case value. In year cost increases are the result of delivery issues with several elements of the work including skip flasks, gamma gates, liquor extraction and ventilation.							
Magnox Swarf Storage Silo (MSSS) - Box Encapsulation Plant	2014	615.0	887.0	782.9	Jan 2021	Jun 2023	Nov 2022
Key reasons for changes to cost and/or end date from year initiated to March 2019 Whilst there has been no change in the Business Case cost, project delivery performance issues have been experienced in 2018/19 resulting in some cost and schedule slippage. A 'Tiger Team' has been put in place to review the impacts of any slippage and to implement appropriate mitigation. Variances in the early stages of the project concerned changes in scope and design along with different commercial arrangements than had been originally envisaged. The current scope also reflects changes associated with the Alternative Intermediate Level Waste Strategy.							
Magnox Swarf Storage Silo (MSSS) - Silo Maintenance Facility	2006	180.0	255.0	252.8	Oct 2011	Aug 2019	Mar 2019
Key reasons for changes to cost and/or end date from year initiated to March 2019 There were no changes to the business case cost or schedule during the year and the project handed over to operations and completed within the approved business case in March 2019. The cost and schedule increases compared to the forecast at initiation are due to additional resources identified by the contractor to deliver the project and delays as part of an overall portfolio reprioritisation exercise in 2014 and to align with overall MSSS and the alternative waste management approach							

Appendix C - Major Projects Cost and Schedule

Project/Programme	Year initiated	Estimated cost at initiation (£m)	Current business case cost (£m)	Estimated cost Mar 2018 (£m)	Estimated end date at initiation	Current business case end date	Estimated end date Mar 2018
Pile Fuel Cladding Silo (PFCS) - Early Retrievals Project	2005	495.0	601.0	471.2	Oct 2019	Apr 2021	Nov 2019
Key reasons for changes to cost and/or end date from year initiated to March 2019 There was no change to the approved business case. The business case highlighted three key opportunities to improve the project cost and schedule, around simplification of the retrievals, waste handling and control equipment. Work has continued to realise these opportunities, reflected in the cost and schedule estimates being well within business case approvals and the cost estimate reducing in year Variances to the forecast at initiation followed a review in 2013 design which led to a review of the proposed solution. This resulted in a revised approach which required the redesign of the waste retrievals and handling equipment, increasing the cost and schedule. The revised business case, approved by Government in September 2016, provided an updated cost and schedule reflecting the new approach.							
Pile Fuel Cladding Silo - Box Encapsulation Plant Product Store - Direct Import Facility	2006	119.0	400.0	374.5	Jan 2019	Jun 2021	Dec 2020
Key reasons for changes to cost and/or end date from year initiated to March 2019 A revised Business Case reflecting cost and schedule increase was approved by HMG during 2018/19 financial year. Delays to the completion of detailed design scope led to increased design and supervision costs, delaying procurements and creating inefficiency in construction activities on site. Contractor performance has been an ongoing concern and this has resulted in forecast cost and schedule increases. Sellafield Ltd has now taken over full control of project delivery with encouraging signed of improvement.							
SIXEP Contingency Plant	2014	394.0	500.0	419.8	Nov 2024	Nov 2026	Mar 2028
Key reasons for changes to cost and/or end date from year initiated to March 2019 There has been no change to the business case cost or schedule but there has been a significant change in the forecast: the most significant issue experienced on this project concerns the supply of valves, with a decision being taken to implement an alternative procurement strategy. This has introduced both cost and schedule slippages in 2018/19. At initiation in April 2014 the project estimate was based on a volumetric estimate. As the project has matured through Concept (Apr 2015) and Preliminary Design (July 2016) stages the increased scope definition enabled a more accurate and definitive estimate to be developed based on measured quantities.							
Sellafield Product and Residue Store Retreatment Plant	2019	885.0	885.0	729.0	Mar 2028	Mar 2028	Nov 2026
Key reasons for changes to cost and/or end date from year initiated to March 2019 NEW: An Outline Business Case was approved by HMG in January 2019. Cost and schedule forecasts remain unchanged.							
Electrical Supply New Construction	2018	238.0	238.0	220.0	Dec 2022	Dec 2022	Apr 2022

Key reasons for changes to cost and/or end date from year initiated to March 2019
Outline Business Case for Phase 1 of the project was approved by HMG in early 2018/19.

The Dounreay Decommissioning Programme, National Low Level Waste Programme and the Magnox Programme were previously reported in the NDA Annual Report and Accounts. As these are not major projects and do not follow the definition on page 165, they have been removed from Appendix C. The progress of these programmes can be found on pages 143-153.

978-1-5286-1451-1
CCS0619490712