It is my pleasure to welcome you to this overview of BP’s business in the North Sea.

This year marks another major milestone in BP’s long history in this region with first oil from our Clair Ridge project. Targeting 640 million barrels of recoverable resources through two new bridge-linked platforms, Clair Ridge is the multi-billion-pound second phase development of the giant Clair field to the west of Shetland.

It comes hot on the heels of our other west of Shetland mega project, Quad 204, which came on stream last year and is targeting 450 million barrels through a revamped subsea system and a new world-class floating, production, storage and offloading (FPSO) vessel, the Glen Lyon.

That’s not all we have to celebrate. Last year, we drilled more new exploration wells—six in total—than anytime in the past 15 years. In January we announced that two of these wells—Capercaille in the central North Sea and Achmelvich west of Shetland—were successful. We are now evaluating the results to assess future options, but we remain very optimistic. Our exploration programme continues this year with two further wells, Bigfoot and Pip, both of which are in the northern North Sea.

We also had a very successful result in the 30th Offshore Licensing Round announced by the Oil & Gas Authority in May—being awarded seven new licences, five as operator, and a commitment to drill another new exploration well.

2018 will also be a big year in our drive to tap into smaller fields containing known resources. Alligin and Vorlich are two such fields and are expected to produce 30,000 barrels gross of oil equivalent a day at peak production.

While not on the same scale as the Quad 204 and Clair Ridge projects, they are located near to existing infrastructure meaning they can be rapidly developed through established offshore hubs.

Of course, a fundamental part of our activity is safe and reliable day-to-day operations from all of our assets and we work hard to ensure our plant is staying online for longer and working effectively and efficiently.

All of this activity will help drive forward our ambitions to increase our North Sea production to 200,000 barrels a day by 2020. It also further highlights BP’s continued commitment to this important region.

Through our five priorities, which are laid out in this publication, BP is embarking on the Path to 2020 and Beyond, ensuring a competitive and robust future for our business.

BP remains very optimistic about our future here in the North Sea. We have a strong portfolio, great people and an enviable record in safety, efficiency and innovation.

I hope you will find this publication informative as it seeks to demonstrate the great potential we still have here in the North Sea.
Our portfolio
Our portfolio

We have refreshed and refocused our portfolio; selling interests in assets that were no longer consistent with our strategy, investing in those that are, acquiring interest in new assets and bringing new fields into production.

Our portfolio today is smaller but stronger, with less operating complexity, reduced risk, and better potential to increase and sustain returns.

Schiehallion Area

The multi-billion-pound Quad 204 project was designed to completely redevelop and maximise production from the Schiehallion and Loyal fields, located 175 kilometres west of Shetland. After 15 years of operating in harsh conditions and producing nearly 400 million barrels of oil, the original Schiehallion floating, production, storage and offloading (FPSO) vessel required replacement to enable continued production and recovery of a further estimated 450 million barrels from the fields.

From this, the Quad 204 project was born and saw the construction of a new state-of-the-art FPSO, the Glen Lyon; renewal of much of the subsea infrastructure network; and a seven-year drilling campaign, comprising up to 20 new wells. Glen Lyon will enable production from this key hub to be extended beyond 2036. First oil from Quad 204 was achieved in May 2017 with full production capacity of 130,000 barrels of oil equivalent a day in 2018.

Quick fact

Glen Lyon has 800,000 barrels of oil storage capacity.
Clair

With an estimated eight billion barrels of oil in place, the Clair field is the largest oilfield on the UK Continental Shelf (UKCS). The field, located 75 kilometres west of the Shetland Islands, was discovered in 1977, but challenging reservoir characteristics and the technological limits of the time meant it was the mid-1990s before the field saw extensive drilling and 2001 before BP and partners approved a development plan. Production from the Clair field began in 2005 – 28 years after discovery.

Quick fact
First fixed platform
west of Shetland

Clair Ridge

The physical size of the Clair field dictates development via a phased approach and Clair Ridge is the second phase of development. It has involved the construction and installation of two new bridge-linked platforms, the jackets (legs) of which were installed in 2013 followed by the topside modules in 2015. Hook-up and commissioning offshore is well under way as we gear up for first oil in 2018. Clair Ridge is expected to be producing beyond 2050. With our partners, we have also completed an appraisal drilling programme to help define a possible third phase of development of the Clair field.

Quick fact
Targeting an additional 640 million barrels
of recoverable resource
Foinaven
The Foinaven field is located 190 kilometres west of Shetland in water depths of between 350 and 520 metres. The field was discovered in 1990 and sanctioned for development in 1994. It was the first deepwater development on the UKCS and the first west of Shetland. First oil from the field was in November 1997. The pioneering fast-track development was based on a network of subsea wells linked via a subsea network of pipelines, control umbilicals and risers to the Petrojet Foinaven FPSO.

Quick fact
First west of Shetland producer

Eastern Trough Area Project (ETAP)
ETAP ranks as one of the largest and most commercially complex North Sea oil and gas developments of the past 20 years, multiple fields with varying ownership sharing a central processing facility (CPF). BP operates six of the seven ETAP fields; Machar, Madoes, Miren, Mungo, Moran and Mamlock. The other field is Heron. A multi-million-pound life extension project as part of the overall field development strategy got under way in 2015 and has breathed new life into this vital resource. We see significant potential and remaining field life in ETAP and, through our investments, expect it to produce well into the 2030s.

Quick fact
2018 marks ETAP’s 20th anniversary
Andrew Area

The Andrew Area includes the Andrew, Anundel, Cynus, Farragon and Kinnoull fields which all produce through the Andrew platform. Andrew, Cynus and Farragon were shut in in mid-2011 to allow for the multi-million-pound Andrew Area Development (AAD), a major brownfield project enabling the Kinnoull field, located 28 kilometres to the north, to be developed through the existing facilities. The AAD also included extensive new subsea infrastructure, a new 750-tonne process module and structural strengthening of the platform. In 2017, the Anundel field came on stream - only 18 months after project sanction. The Andrew Area is expected to produce into the mid-2020s.

Quick fact

Kinnoull field connected to Andrew platform by 28 kilometre pipeline

Alligin and Vortic

Alligin and Voricl are satellite fields which BP is seeking to rapidly develop and bring into production through existing infrastructure offshore. Alligin, a two-well development west of Shetland, will be tied back to BP’s Ellen Lyon FPSO vessel. Voricl, in the central North Sea and also a two-well development, will be tied back through Ithaca’s Greater Stella Area production hub. Both field developments were sanctioned in 2018 and are expected to come on stream in 2020.

Quick fact

Producing 30,000 barrels of oil equivalent a day at peak
Miller (non-producing)

The Miller field was operational for 15 years, during which time it produced some 345 million barrels of oil equivalent. The field started up in June 1992 and, during the plateau years to 1997, output averaged up to 160,000 barrels of oil and 225 million cubic feet of gas per day. Production ceased in July 2007. BP is now progressing a decommissioning programme for the platform, which received UK Government approval in December 2013. The first of the Miller modules were removed for disposal in 2017 with the remaining modules and the platform’s jacket (legs) being removed in 2018.

Quick fact

Up to 97% of recovered material from Miller to be recycled

Bruce Area

The Bruce Area hub is made up of the Bruce, Keith and Rhum fields which all produce through the Bruce platform. BP announced in November 2017 its intention to sell a package of its interests in the Bruce assets to Serica Energy. On completion of the transition, Serica will replace BP as the operator of these assets. The Bruce area has played a very important role in BP’s North Sea history with a strong operational and safety performance over the years. This deal is predicated on our belief that Bruce will have a better future in the hands of a company for whom the business is strategic going forward.

Quick fact

Bruce and Rhum fields account for up to 5% of UK gas production
Culzean
The Total-operated Culzean field (BP ownership share 32%) is one of the largest new projects to be sanctioned in the North Sea in recent years and is expected to supply around 5% of UK gas requirements. The field is a high-pressure, high-temperature gas condensate reservoir which was sanctioned in 2015. First gas is anticipated in 2019. Construction is well under way.

Magnus
The Equinor-operated Magnus field (BP ownership share 75%) is the UK’s most northerly field, located 160 kilometres north-east of the Shetland Islands. First oil from the field was achieved in August 1983.

Shearwater
The Shell-operated Shearwater field (BP ownership share 28%) is a high-pressure, high-temperature gas condensate field located in the Central North Sea. Shearwater was brought online in 2000 and has been developed through two fixed platforms. Shearwater remains among the biggest producing fields in the North Sea and is anticipated to continue operating into the 2020s.
Safety and environment
Safety

Our North Sea strategy is underpinned by a relentless focus on safety and risk management. Safety is front and centre of all we do. It’s a mind-set; it’s about always working to be better.

We are proud of the high-value portfolio we have today, but we are clear that our licence to operate it only exists by prioritising safety every day.

This rigorous management of risk helps to not only protect our people and the environments in which we operate, but also the enduring value we create. Operating in technically demanding geographies, we are sensitive to local environments and work hard to avoid, minimise and mitigate environmental impacts.

Safety at BP is driven by leadership and applied through our Operating Management System – a set of processes, standards and practices that helps us to consistently deliver safe, reliable and compliant operations.

We know that it’s not just what we do but how we do it that’s important. Safety is the core value that guides all BP people, while our Code of Conduct sets out the basic rules for operating safely, responsibly and consistently.

We take the welfare of our people seriously and strive to create and maintain safe and healthy working environments. We have put in place processes that support our efforts to continuously improve and to reinforce a culture of ‘safety first’ behaviour.

How we manage hydrocarbons is fundamental to running safe and reliable operations. Rigorous application of our procedures, systems and processes is critical to ensuring the integrity of our operations, preventing process safety incidents, and ensuring no harm to our people or the environment.
Safety in action

Recognising exceptional safety leadership - the Quad 204 project team

The Quad 204 team were presented with the coveted BP Helios Award for Safety in 2017, recognised for developing a recipe for safety excellence across operations, projects and contractor teams involved in the complex west of Shetland development.

The team delivered more than 650 consecutive days and three million hours recordable injury-free.

This headline performance was underpinned by more than 24,000 safety conversations completed during this period. This included 100% participation in the Glen Lyon FPSO behavioural safety programme every week since she left for the North Sea following her construction.

They also developed one simple integrated approach to self-verification on the Glen Lyon, leveraging both projects and operations tools and resources.

“Our approach was not about adding additional rules, but was about making safety simple, personal and engaging.

We focused on getting the basics right, sustaining a positive culture of care and building pride in injury-free delivery across our worksites – all in support of a safe start-up. Our mission was to safely and efficiently install, hook-up, commission and start-up the new Glen Lyon FPSO and new subsea infrastructure. This activity had to be delivered by a large, diverse and often transient team.

We targeted our efforts on sustaining one integrated team, building pride around injury-free delivery, and creating a culture in which safety is a core value, a pre-condition to our work and the way we do business.”

Andy Best, Health, Safety and Environment (HSE) Manager with BP’s Global Projects Organisation (GPO)

For more information on BP’s commitment to safety, visit www.bp.com/safety
Environment

We are committed to minimising our impact on the environment and, while environmental challenges and opportunities differ depending upon the lifecycle stage, our overarching goal of no damage to the environment remains the same.

The North Sea oil and gas sector is subject to strict environmental regulation, with which we strive to comply at all times.

We work closely with regulators to constantly review what we do, how we do it, and how we can do it better. Our Operating Management System is designed to drive continuous improvement in our regulatory, compliance and environmental performance.

Our system meets the requirements of the international environmental management standard ISO 14001 and is subject to regular internal and external audit.

Two decades ago, BP was one of the first energy companies to recognise and address the threat of climate change and today we continue to embrace the dual challenge of meeting growing demand for energy with fewer emissions.

2018 saw the launch of a new report setting out our commitment to a low carbon future. The report, Advancing the Energy Transition, details BP’s framework for delivering this commitment: reducing greenhouse gas emissions in our operations, improving our products to help customers reduce their emissions, and creating low carbon businesses.

In the North Sea we are playing our part by improving the efficiency of our existing operations and designing our new major projects to emit fewer greenhouse gases.

This has been most notable recently in the design of our new Glen Lyon FPSO which includes a flare gas recovery system to reduce greenhouse gas emissions reaching the atmosphere.

We also recover waste heat from the Glen Lyon’s turbines for use in other production operations.
People and community
People

BP is a leading employer in a vital sector – a place where the brightest minds come together to find new ways of solving complex challenges that make a difference to the UK energy industry and economy.

Our performance as a company depends on maintaining and developing an engaged, skilled workforce and our culture is based on respect for one another. We value the diverse strengths, abilities and talents that different people bring to our organisation, and we reward our people on merit.

The foundation for this is a set of shared values that guides us in our everyday work. BP values safety, respect, excellence, courage and a one team approach.

We believe this enables us to create a working environment where everyone can make a difference and give their best.

We hold ourselves to the highest ethical standards and adhere to our Code of Conduct, which outlines our expectations for everyone who works at BP.

We have created three areas of focus for our people designed to help develop a winning team for the future. These are:

Developing great leaders

Real progress and extraordinary achievement comes from world-class leadership. To deliver our Path to 2020 and Beyond, we need leaders who engage passionately about our company, vision and role in the world, who demonstrate deep ownership of BP performance, and who inspire through coaching, continuous feedback and trust.

Creating a truly global workforce

We aim to create a globally connected, culturally fluent workforce nimble enough to respond to business changes, where our people are able to compete based on merit regardless of background or location.

Growing capabilities

As we modernise the way we work, we are continuing to understand, invest in and build skills that we need for the future by reinvesting in technical development and new technologies to enable a global, modern, and digitally-enabled workforce.

For more information on BP’s people, visit www.bp.com/people
Community

We passionately believe in supporting activities that strengthen the skills and abilities of people in the communities where we do business.

We are committed to going beyond our core business responsibilities to work in partnership with communities, local authorities, business organisations and voluntary groups to bring broader cultural, social and economic benefits.

Our programme focuses on participating in and contributing to communities through education partnerships; making arts and culture accessible to all, and helping to enhance the quality of life in the locations in which we operate.

Supporting local festivals and arts institutions and bringing world-class arts events to the community mean BP is adding to the Region’s rich cultural diversity.

And it’s not just about financial support. Every year, hundreds of BP employees and contractors volunteer their time and expertise to help make our communities a better place to live, now and in the future. The BP Employee Matching Fund encourages active fundraising and volunteering in the community and enables staff to support organisations and charities of their choice.

Each BP employee can claim up to $5,000 per year to support their fundraising and volunteering activities.

For more information on BP’s communities investment programme, visit www.bp.com/uk/community
Community in action

Building community capacity

BP has strong links with the voluntary sector, supporting a range of charities providing vital services.

Many BP employees volunteer their time and skills to help make a positive difference. Earlier in 2018, a group of 70 current and former BP employees completed the annual Coast to Coast charity cycle ride, covering 250 miles over three days and raising more than £100,000 for several charities. Since the event began 10 years ago, the BP cyclists have raised more than £1 million for a range of good causes.

Connecting through culture

Since 2005, the BP Big Screens have given Aberdeen audiences the opportunity to enjoy free performances of world-class opera and ballet from the Royal Opera House in London.

Last year, more than 2,000 members of the local community, BP employees and their families enjoyed a live screening of Verdi’s opera La Traviata. This year will mark our 15th year sponsoring the BP Portrait Award organised by the National Portrait Gallery – one of the prestigious portrait competitions in the world – and our 15th year supporting the Robert Gordon University Grey’s School of Art Degree Show, an annual highlight in the local arts calendar that showcases the work of graduating students.

Developing capability

BP’s thriving Schools Link programme celebrates its 50th anniversary in 2018.

It is a comprehensive and practical programme aimed at inspiring young people to develop their skills in science, technology, engineering and maths (STEM), as well as giving them an understanding of business, the oil and gas industry, and how to work as a team. Feeding into every stage of education, BP North Sea is linked with schools across Scotland. BP is also a supporter of the Career Ready initiative, a UK-wide charity linking employers with schools and colleges to open up the world of work to young people. In 2017, BP employees mentored five secondary school pupils through this scheme with five signed up for the 2018 intake.
Delivering the plan to 2020
Delivering the plan to 2020

The North Sea is a growth region for BP - maximising the performance of our assets and bringing on important new production are core strategic priorities.

Over the past few years, we have been delivering a strategy to maximise production from our assets; focus and refresh our portfolio and invest for the future. This has served us well.

We are now focused on growing our business in the North Sea and, central to this, is delivering our Plan to 2020 priority.

In recent years, we have invested at record levels in the North Sea. This has brought the Quad 204 project into production and is on track to deliver Clair Ridge - the second phase development of the giant Clair field – later in 2018.

Combined, these projects will target more than one billion barrels of recoverable resource.

That is not all we have in the pipeline. We have a 32% interest in a third North Sea mega project, the Total-operated Culzean development. Due on stream in 2019, Culzean was the largest new field development sanctioned in the UK in 2015.

This activity, combined with continuing to improve production efficiency and reliability from our other core assets, will help us achieve our ambitious goal of doubling our North Sea production to 200,000 barrels a day by 2020.

But there is always more we can do. The external environment remains difficult, with the expectation that current oil prices are the new norm. We need to ensure our business is profitable in the current price environment and resilient to both price fluctuations and growing energy supply competition from around the world.

We will continue our emphasis on simplification, efficiency, plant reliability and rigorous cost management.

All of this, alongside our modernisation, digitalisation and technology agendas, will help set us on the right path to 2020 and beyond.
Delivering the plan to 2020 in action

Clair Ridge – a sleeping giant

2018 is another milestone year for BP in the North Sea with the start-up of our multi-billion-pound Clair Ridge project, targeting an estimated 640 million additional barrels from the Clair field located 75 kilometres to the west of Shetland.

Here, we take a closer look at this mega project.

The Clair Ridge project is developing new resources from the Clair field – the largest oilfield on the UK Continental Shelf (UKCS).

The Clair field was discovered in 1977, but challenging reservoir characteristics and the technological limits of the time meant it was 2001 before BP and partners approved a development plan for a first phase of development.

Phase One was brought on stream in 2005, targeting approximately 250 million barrels of recoverable reserves. It was the first fixed offshore facility to be installed in the West of Shetland area.

To the north of Phase One is Clair Ridge, where BP is targeting an additional 640 million barrels of recoverable resources. The multi-billion-pound investment by BP and partners involves two new bridge-linked platforms with construction offshore completed in 2016.

Hook-up and commissioning is now well under way with first oil expected in 2018.

Designed to produce until beyond 2050, Clair Ridge production capacity is expected to peak at 120,000 barrels per day.

“2018 marks the culmination of years of planning and hard work by BP and our Clair Ridge partners and supply chain colleagues. The Clair area has vast potential and a strong future in BP’s portfolio. Through our significant investment in Clair Ridge, we have taken significant steps to maximise the greater potential we see in the west of Shetland area.”

Ariel Flores, BP North Sea Regional President
Enhanced oil recovery on Clair Ridge

BP is leading the way in the latest enhanced oil recovery (EOR) techniques to significantly extend the field life of our assets, including leading-edge reduced salinity water injection (LoSaI®).

LoSaI® was developed by BP’s enhanced recovery technology team following a decade of laboratory tests. These tests were conducted at BP’s research centre at Sunbury-on-Thames using samples from across BP’s global operations. The low-salinity water reacts with clay particles in the reservoir to release oil that is stuck to the clay.

Clair Ridge will be the first full-field EOR scheme capable of using LoSaI with the potential to unlock an additional 40 million barrels of oil, when compared to injecting conventional seawater to maintain reservoir pressure and to “sweep” oil towards the production wells.
Building our future beyond 2020
Building our future beyond 2020

We have an exciting set of future investment and renewal opportunities with the potential to sustain a material UK business for decades to come.

Our intent is to maintain a healthy capital investment programme to sustain the production growth we will see over the next few years.

BP is exploring at significantly higher levels in the North Sea than in the recent past. In 2017, we participated in six exploration wells, two of which were discoveries at Capercaille in the central North Sea and Achmelvich west of Shetland. Our exploration programme continues in 2018 with two further wells; Bigfoot and Pip in the northern North Sea.

In 2018, BP sanctioned two new North Sea developments: the Alligin and Yongfjord projects which will be connected subsea to established offshore hubs. We expect to see first oil from these fields in 2020 with peak production forecast to be around 30,000 barrels of oil equivalent a day.

We also had a very successful result in the 30th Offshore Licensing Round announced by the Oil & Gas Authority in May – being awarded seven new licences, five as operator, and a firm commitment to drill at least one more exploration well.

In addition to activity already planned, we have a rich hopper of future opportunities across our portfolio, including the Greater Cairn area west of Shetland and the ETAP hub in the central North Sea.

Successful delivery of our plan should create the platform that enables us to attract new investment and to develop our remaining barrels of resource to build our future in the North Sea.
Modernise and transform
Modernise and transform

Our modernise and transform priority is about creating a flexible, modern and innovative business that embraces new technologies and is a motivating and exciting place to work.

It is critically important that not only are we safe and efficient here in the North Sea, but that we transform the way we work to drive real, sustainable efficiencies so that we can compete over the long-term.

We encourage everyone at BP to identify and implement smarter ways of working, without compromising safety, with the goal of getting more from our assets and capturing value from every pound we spend. From small and simple ideas to large-scale deployment of new technologies and tools, our people are helping to make a positive difference to our operations and our productivity.

The modernise and transform priority is focused around three themes: agility, digital, and mindset.

We will make our organisation more agile and improve decision making; we are looking to truly embrace digital and the opportunities presented by big data, and we want to create a mindset inside the company consistent with a business that values the pence as well as the pounds and is always looking to do things better. We want to improve integration across the business, effectively balancing the long and short term, and make our teams’ jobs easier.

All of this is in service of our aspiration to create the best, most exciting, modern and productive working environment in the North Sea. Working this way will feel very different – we hope to unleash ideas and solutions we can’t imagine today. The good news is we are already in action.

Three years ago, we started building BP’s proprietary “data lake” – a storage repository that holds a vast amount of raw data immediately accessible as and when needed. Today, it holds more than one petabyte (a billion million bytes) of data.

We have developed cloud-based IT platforms which access our data lake to enable rapid analysis and decision making with state-of-the-art visualisation and predictive tools. A few examples: Argus is our wells data platform. Today it contains data on nearly 3,000 wells which represents 93.5% of our global well stock.

Apex is our system optimiser. It enables us to optimise production in real time by monitoring and modelling physical constraints across the production system. It is expected to be installed in all BP-operated assets by 2018.

Both systems were initiated in the North Sea and their development has had significant input from the teams in this region.
Technology

Maximising the value and potential of today’s and tomorrow’s technologies is at the core of our strategy to sustain a competitive North Sea business for the long term.

We believe it is central to our ability to continuously improve our performance in safety, risk management, facilities reliability, operations efficiency, production optimisation, reservoir and well management, hydrocarbon recovery and future exploration success.

We have scientists and technologists at seven major global centres, including here in the UK.

BP and our subsidiaries hold more than 3,800 granted patents and pending patent applications throughout the world and invest hundreds of millions of dollars globally in research and development.

Around the world, BP engineers are using “big data” to make critical decisions about wells, reservoirs and fields, with state-of-the-art analytical tools that draw on historical and real-time data.

With these new capabilities, well-sensor data is being made available to engineers and operators within seconds for monitoring, analysis and value optimisation.

BP is partnering with others to understand and develop solutions for the future including sustainable mobility, carbon management, power and storage, bio-products and digital energy.

For example, we are a major contributor and funder to the new state-of-the-art Oil and Gas Technology Centre (OGTC) in Aberdeen.

Here in the North Sea, we have always been at the leading edge of technology – and we are a region renowned for exporting its skills and expertise around the world.

Our advanced seismic imaging technologies help us to find more oil and gas. Sophisticated enhanced oil recovery techniques enable us to maximise recovery. And real-time data allows us to deliver improved levels of safety, reliability and efficiency across our operations.
Modernisation and transformation in action

Enhancing the value of condition monitoring technologies

The goal: To improve the health and reliability of our assets through better monitoring of critical equipment.

Background: Condition monitoring data underpins our proactive planning and maintenance.

Temperature readings, vibration levels and oil sample analysis can provide early warning signs that maintenance of critical equipment may be required. New technologies deployed by the North Sea Region Reliability & Maintenance (R&M) team include:

- portable electronic data collection
- advanced remote monitoring
- predictive analytical tools
- cloud-based solutions.

Modernise and Transform milestones: The successful deployment of Smart Signal, a predictive analytics tool that provides ‘early warning’ condition and system monitoring, and System 1, which captures high-resolution dynamic vibration data.

Value: Over £30m of production deferral has been avoided in the BP North Sea business in the past three years by exploiting these enhanced condition monitoring technologies.

BP’s first Fast Digital Inspection Survey (FDIS)

The goal: To reduce the time and costs of pipeline imaging surveys

Background: The aim of the project was to redefine the performance of pipeline inspection from traditional video recording to meet four main criteria:

- Limiting sea time to reduce risk
- Reducing cost
- Improving data quality
- Greater accessibility of data to stakeholders

The inspection took place in November 2017 on 478km of North Sea trunklines in 95 hours using a Fast Remotely Operated Vehicle (FROV) with an integrated laser and digital imaging system.

Modernise and Transform milestones: The FDIS was six times faster than traditional video methods. Data quality matched video, allowing ease of access and immersion in a virtual 3D environment. Scene layer files will be delivered to stakeholders through the OneMap software.

Value: The project has saved the North Sea region £3.9m and has set a new standard for pipeline inspection execution methodology which can be applied globally.
Useful websites
Oil and Gas Authority  https://www.ogaauthority.co.uk
Department for Business Energy and Industrial Strategy
Environment Agency  www.environment-agency.gov.uk
Scottish Environment Protection Agency  www.sepa.org.uk
Oil & Gas UK  www.oilandgasuk.co.uk