



Oil & Gas
Authority

OGA Digital Strategy 2020- 2025



December 2019

Contents

1. Introduction	1
2. Digital driven value and innovation	2
3. Progress to date	3
4. Look ahead	5
4.1 People, skills and digital culture	5
4.2 Transform access to information	6
4.3 Analytics and intelligence	7
4.4 Collaborate partner and assure - continual improvement	7
4.5 Influence and promote	8
5. The benefits of the OGA digital strategy	10
6. Risks and opportunities	11

The document can be found on the OGA's website: <https://www.ogauthority.co.uk/data-centre/overview/>

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Published by the Oil & Gas Authority

1. Introduction

This strategy describes how the OGA will deliver, promote and influence digital excellence through digitalisation to support Maximising Economic Recovery and the energy transition. The opportunity to leverage data and digitalisation is huge; McKinsey have estimated that open data in oil and gas could enable \$240 to \$520 billion of value per year¹.

The OGA aims to be an innovator and a catalyst, helping industry, academia and the supply chain to use digitalisation to unlock the huge value from data, whilst at the same time providing excellent digital services to its stakeholders in support of regulatory excellence.

The OGA's ambition is to enable digital services that ensure digital, data and technology work for everyone. Over the next five years the OGA will:

- Continue to build and embed a culture of digital excellence across industry
- Develop and enhance public trust in open and transparent quality data and platforms

- Unlock and exploit data value through advanced analytical tools
- Collaborate, partner and assure so services to our key stakeholders continue to improve
- Use its influence to unlock value from data and digitalisation

These priorities, as shown in Figure 1 mean that the OGA will pursue the goal of Vision 2035 through digital technology. The OGA will ensure full inclusion and workforce engagement at every level so digitalisation is embraced across the exploration, production and decommissioning lifecycle.

This strategy builds upon the 2016 OGA Information Management Strategy, many components of which have now been delivered – such as the UK National Data Repository (NDR), the overhaul of data regulations and a range of significantly improved and powerful OGA digital services.

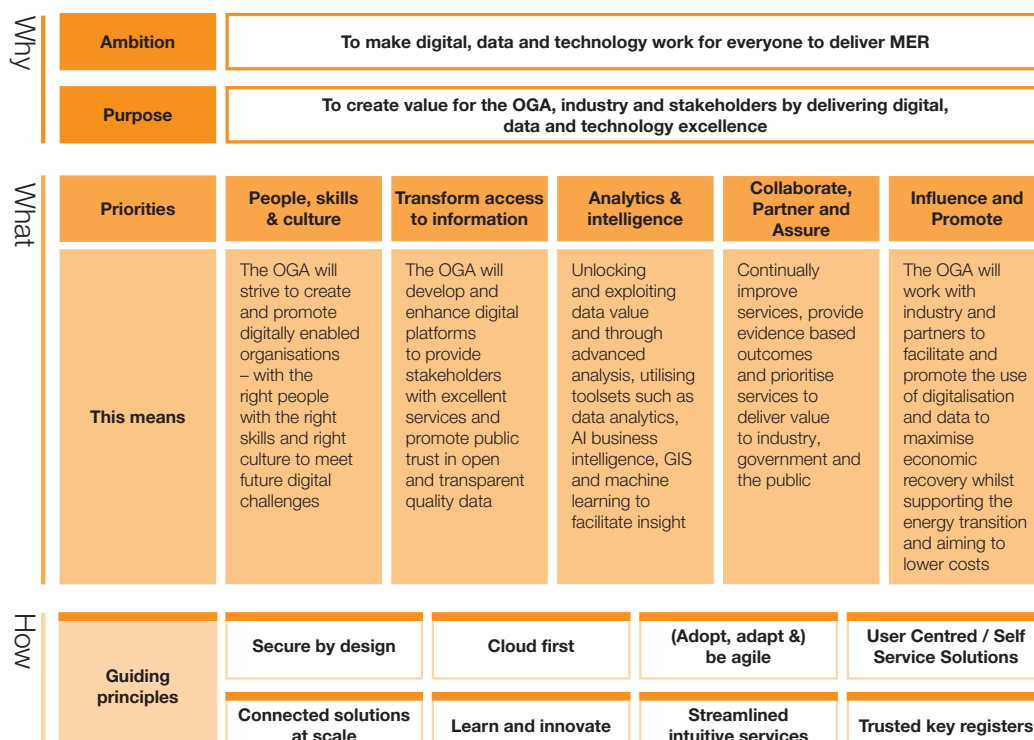


Figure 1 – The OGA digital vision and principles

¹ McKinsey and Company, Open data: unlocking innovation and performance with liquid information, October 2013

2. Digital driven value and innovation

The UK government's Digital Strategy 2017 states that

“Analysis predicts that data will benefit the UK economy by up to £241 billion between 2015 and 2020. We therefore must ensure businesses and government are able to use data in innovative and effective ways. This includes creating a strong data infrastructure, having a high level of regulatory compliance, developing a data-literate workforce, and increasing the number of people with advanced data skills.”

The UK Digital Strategy 2017 also stated that

“Effective use of data can create £66 billion of new business and innovation opportunities in the UK, yet international studies show that the vast majority of existing datasets are nowhere near fully exploited, with most companies surveyed estimating that they are analysing just 12% of their data”².

The potential in data is so great that some regard it as the basis for an embryonic fourth industrial revolution. The OGA digital strategy aims to deliver not only open data for analysis, but enable the OGA to deliver excellent regulatory services and influence industry and supply chain to maximise digital opportunities.

The OGA is starting to see industry grasp this opportunity, with the innovative use of data driving new technology solutions and business models – for example using machine learning and artificial intelligence (AI) on reliability data and to predict equipment failures and reduce maintenance costs.

² UK Digital Strategy 2017, 1 March 2017, Section 7 Data – unlocking the power of data in the UK economy and improving public confidence in its use.

<https://www.gov.uk/government/publications/uk-digital-strategy/uk-digital-strategy>

3. Progress to date

The OGA has a successful record of transforming access to petroleum-related data over the last three years. It has demonstrated there is a huge and growing demand for data. Great progress has been made in the capability of the OGA to collect, process and analyse data, providing authoritative insight to our stakeholders.

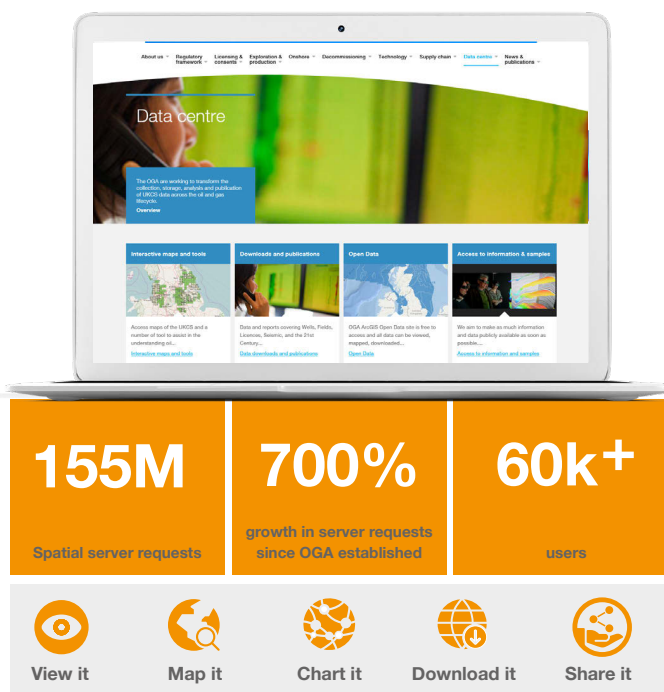
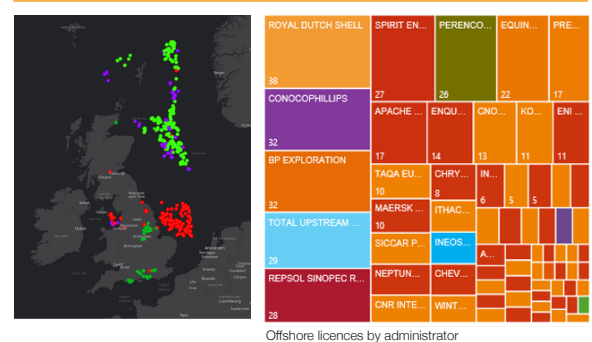


Figure 2 – The OGA Data Centre and Open Data

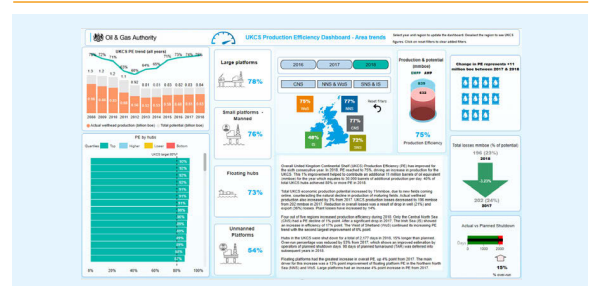
The OGA has launched many successful digital services and service improvements, such as:

- Launching the UK Stewardship Survey – providing definitive data used by the OGA and many stakeholders which is central to the data driven asset stewardship process
- Re-launching the Petroleum Production Reporting System (PPRS) – delivering high value production data faster and more consistently with visualisations and dashboards
- Providing subsurface data releases - a wealth of data and information supporting licence rounds and revitalising exploration on the UKCS - for example data packs, government seismic and undeveloped discovery montages

Comprehensive data only a few clicks away



Online Production Efficiency Dashboard



- Developing OGA geospatial applications - many applications that are widely used externally such as the OGA offshore interactive maps and relinquishment reports application
- Establishing the first UK National Data Repository (NDR) for offshore petroleum related information and samples – the OGA digital platform is open to all and is being used in 191 countries.

The OGA is now poised to make further progress in developing systems of engagement, record and insight – the OGA digital platform.

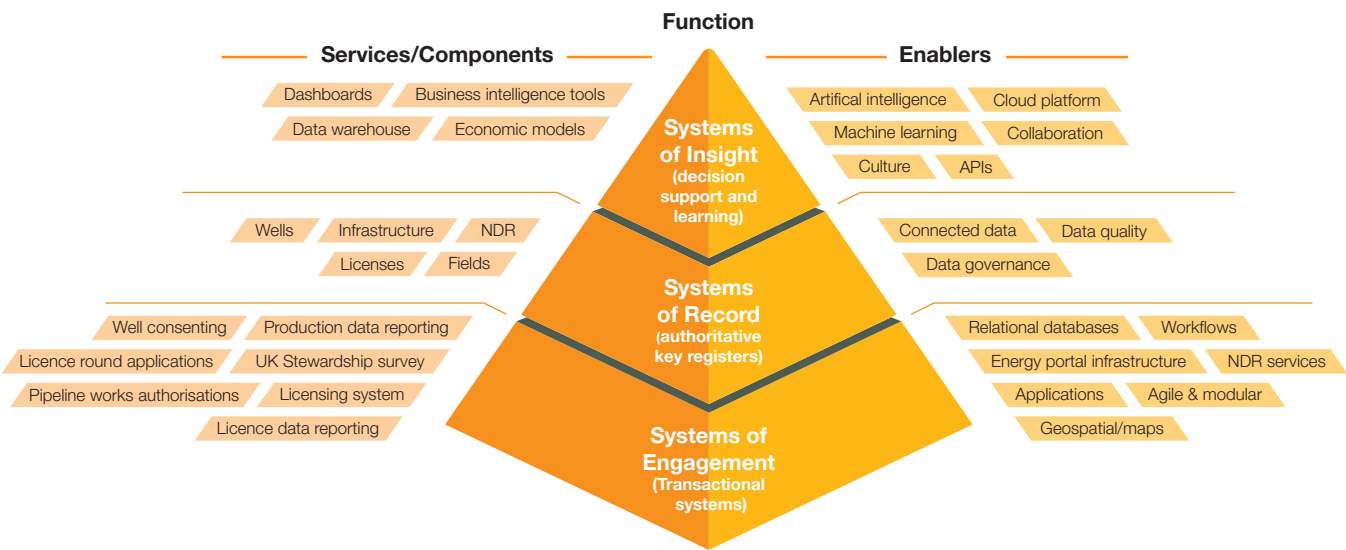


Figure 3 – The OGA Digital Platform

4. Look ahead

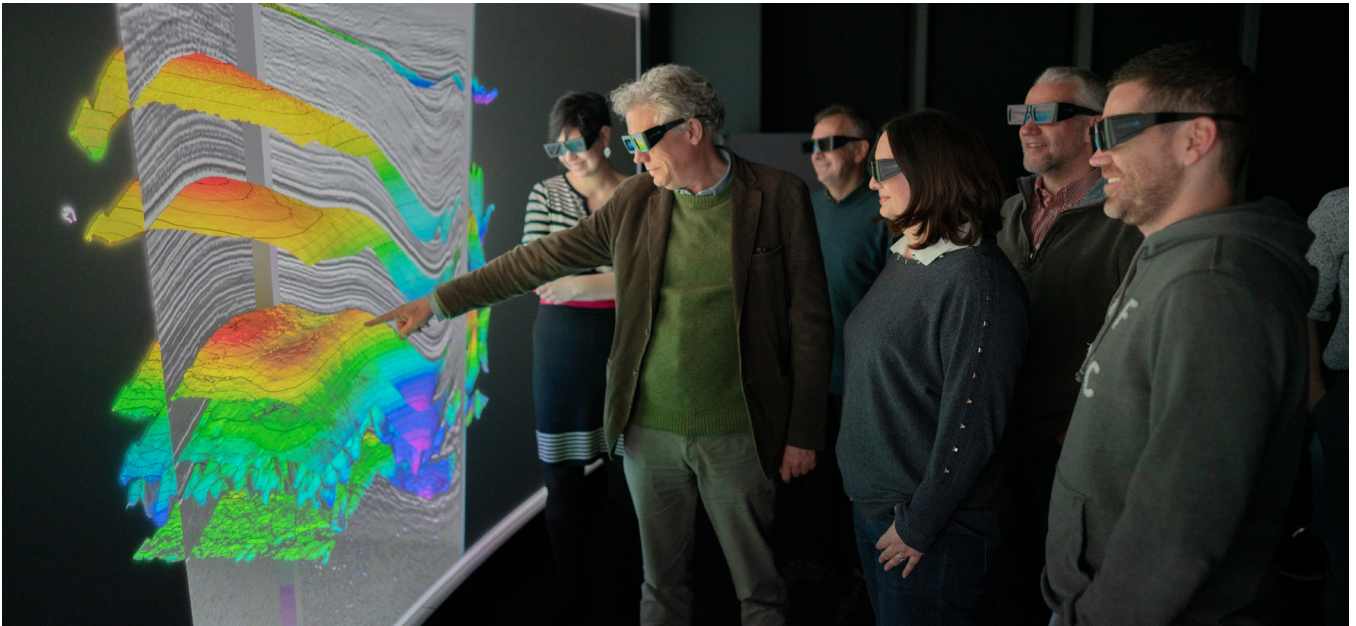


Figure 4 - OGA data team at the OGA funded Lyell Centre Visualisation Suite

4.1 People, skills and digital culture

The OGA will continue to enhance its “data-centric” approach which will require a change in the skills and culture to support a broad range of digital skills.

The OGA is starting to embrace this digital transformation and new ways of working. These include the formation of OGA Digital Champions; a group to explore and influence digital, data and technology across the organisation, as well as the adoption of agile methodologies for projects to speed up new product development.

To achieve this ambition the OGA will:

Develop an OGA wide digital learning and development programme to support staff with the skills and support needed to embrace new ways of working. This approach has been used successfully in industry, for example by Aker-BP in what they term an initiative called “promoting the data liberation front”. Like Aker-BP the OGA sees “the potential value creation from digitalization..... that more data could be made accessible for all, and organized in a better way for example for machine learning. This would unlock remaining potential on the Norwegian Continental Shelf (NCS), both by discovering more petroleum resources and develop projects at much lower cost” (Ole Jøran Askim, Special Adviser for Aker BP).

This OGA digital academy and digital competence framework will be supported by people development and skills training to ensure that the OGA becomes a truly digitally enabled organisation. This will create an environment where OGA staff can experiment and gain confidence in how different digital tools can help the OGA and their stakeholders. Agile ways of working will be used by the OGA and its suppliers to ensure fast, effective delivery of new services and products.

The need to enhance digital skills in the OGA and industry has never been greater. The OGA will continue to support personal and professional development in digital skills. This effort to adopt an enterprise wide digital approach is likely to yield a large internal benefit to the OGA as well as improving services to our stakeholders and helping make the OGA a great place to work.

This will be achieved when the OGA:

Has a digital onboarding and development programme enabling all staff to enhance and use their digital skills, delivers digital, data and technology projects using modern methodologies and has ways of working that make best use of digital technologies and data.

4.2 Transform access to information

Information and data underpins much of what the OGA and industry does. Knowing the authoritative source of quality data supports decision making and enables the OGA to focus on maximising economic recovery of the UKCS. The OGA will build on its digital capabilities, tools and techniques to ensure rich datasets drive evidence-based, data-driven decisions. At the same time, the OGA will enable more data to be accessed by industry thereby facilitating innovative uses of the data, technologies and data centric business models.

To achieve this ambition the OGA will:

Progressively integrate its digital service offerings into one simple to use OGA digital platform to provide excellent systems of engagement, record and insight. This means that the OGA will continue to reduce complexity, eliminate manual processes and make data easier to use.

The OGA shall work with industry to maximise the completeness, quality and utility of data within the OGA digital platform making it suitable for use in machine learning by decoupling data from applications, making them easy for the public to use.

The opportunity for industry and academia to create value from data is very large. It means that industry, academia and the supply chain will be able to develop new services, business models and technologies on data provided through the OGA digital platform. The OGA has for example enabled one innovative project providing data from the NDR to the Oil & Gas Technology Centre (OGTC) and industry to look for overlooked pay in the Northern North Sea using machine learning (Figure 5 below).

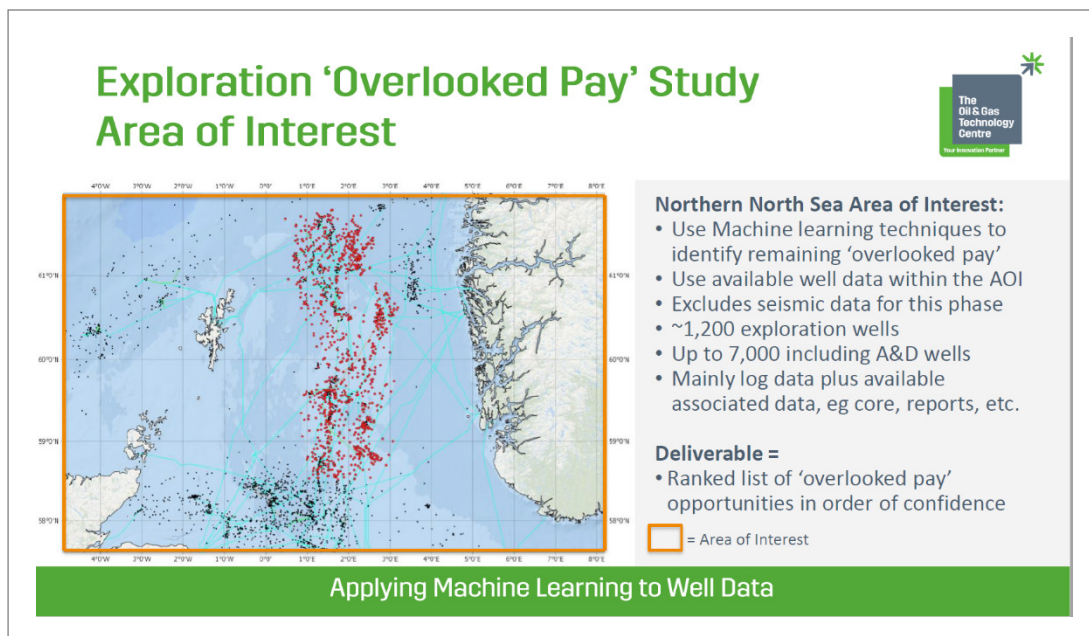


Figure 5 - OGA unlocking data for machine learning in the Northern North Sea

This will be achieved when the OGA:

Has a single-entry point to its authoritative data, digital and technology services and makes data available in formats that eliminate inefficiencies whilst enabling advanced analytics, geospatial intelligence, machine learning and artificial intelligence.

4.3 Analytics and intelligence

The OGA will develop and enhance its analytics and business intelligence platform to provide deeper insight into data to enhance decision making and solve problems.

Solving problems facing the petroleum industry increasingly means deriving value from large and complex data sets. The OGA will therefore ensure that it uses and promotes data science techniques, business intelligence tools, application programming interfaces (API) and data warehousing technologies to store, process, analyse and publish information.

To achieve this ambition the OGA will:

Lead on the use of data and analytics to anticipate demand for services as well as adapting to, and influencing, policy changes. To help this the OGA will continue to build dashboards, business intelligence tools, user interfaces and systems of insight from authoritative OGA data sets to provide new analysis and insights.

The OGA will work with stakeholders to consider augmenting the OGA digital platform with new data sets or new combinations of data, for example in support of the energy transition.

This will be achieved when the OGA:

Has an enhanced self-service model where the OGA, industry and the public can access and integrate data and gain insights, has collaborated with industry and government to consider how new datasets might be developed and provide stakeholders with an enhanced suite of data rich APIs from its digital platform.

4.4 Collaborate partner and assure - continual improvement

The OGA's ambition is to instil a culture of collaboration with our stakeholders, continuously seeking feedback and exploring opportunities to enhance the services that the OGA and industry deliver. Delivering this strategy does not stop at the end of five years, but involves an ongoing process of refinement.

To achieve this ambition the OGA will:

Focus on delivering value using digitalisation. OGA digital investments will clearly demonstrate the benefits to the OGA and our stakeholders – through better user experiences, higher quality services and efficiencies.

The OGA will continue to improve its ways of working embracing agile methodologies ensuring its staff and industry have a joint sense ownership of our products and services. Developing and encouraging the core skills in change management across our suppliers and industry will be key to continual improvement.

The OGA will develop strategic relationships with long-term IT partners that can commit to building OGA capabilities through shared values and trust, collaborate with government and industry to identify opportunities for shared platforms and ensure that the security is at the heart of all systems.

This will be achieved when the OGA:

Has a feedback mechanism for its digital, data and technology services, develops long-term relationships and effective ways of working with strategic partners. The OGA has ensured authoritative joined up data, digital and technology services for government and industry.

4.5 Influence and promote

The preceding sections of this strategy demonstrate how the OGA will ensure it is a digitally enabled organisation and provide services and solutions to the industry. The OGA acknowledges that to date it has focused initial efforts on ensuring regulations support the collection of quality data. This coupled with data compliance provides a robust baseline for digital excellence.

There are wider opportunities for the offshore energy sector that the OGA shall use its unique access to data, together with its digital platform, to promote the use of data and digitalisation. This will help enable industry, academia and the supply chain to develop new products, services and business models based on maximising the use of shared data. The OGA aims to use its influence and work with partners to enable industry, the supply chain and academia to maximise opportunities for using data and digitalisation.

In a mature basin, it is increasingly necessary to use data in new and innovative ways to maximise economic recovery, improve efficiency and reduce costs. The benefits of doing this are already apparent in industry, for example companies applying data science techniques to solve a variety of industry problems with hitherto under used data.

The OGA is helping this effort by supplying data and business insights, for example using interactive dashboards to provide production efficiency insights.

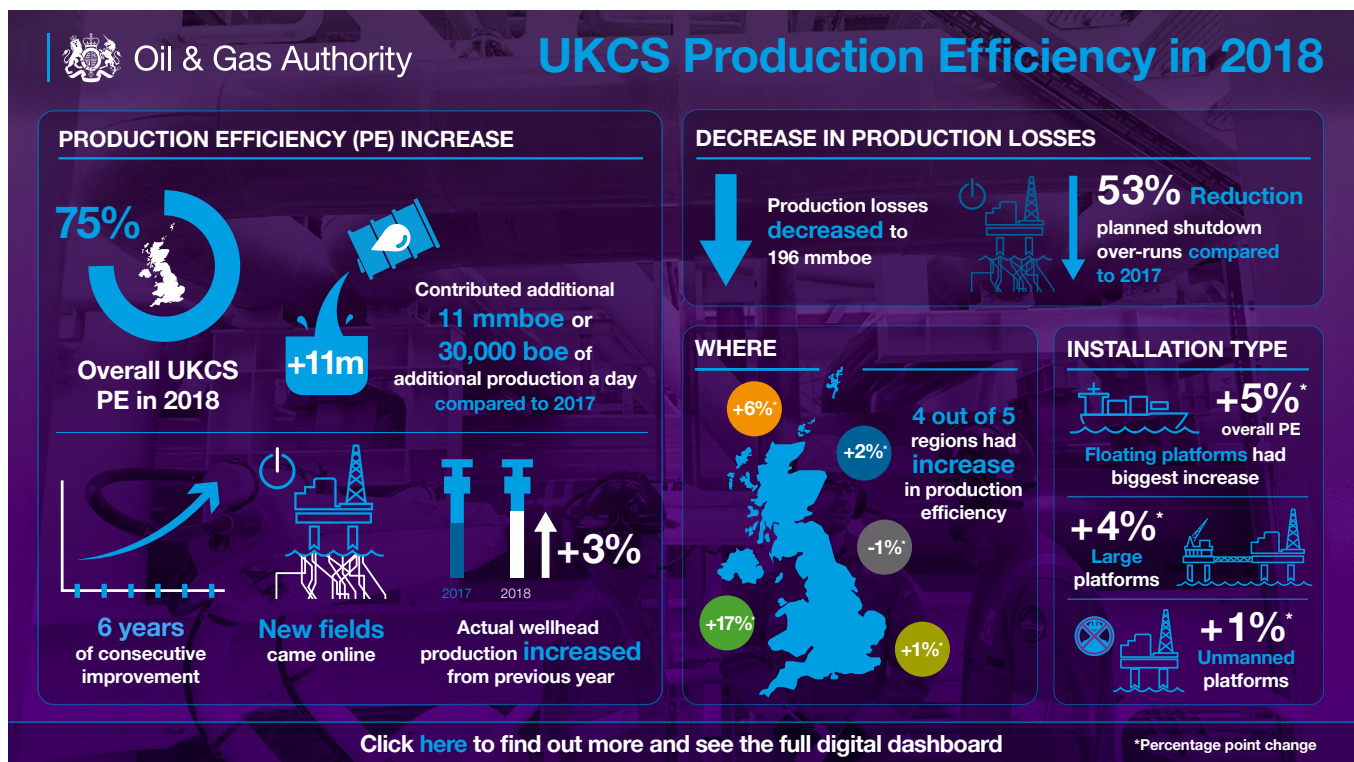


Figure 6 – The OGA Production Efficiency Dashboard³

³ UKCS Production Efficiency Dashboard – Area Trends and Losses Trends
<https://tinyurl.com/tqxga7>

It is vitally important that the OGA uses its unique position of influence and access to industry to promote the optimum use of data and digitalisation to deliver innovative and disruptive business models, new data platforms and insight and intelligence. The OGA has started to do this, for example by providing the NDR platform and a wide variety of digital data which is marketing UKCS subsurface data as a development resource on which new investment and services can be built. The OGA will develop digital initiatives with Opportunity North East (ONE), the Technology Leadership Board (TLB) and the OGTC to promote the effective use of digitalisation for maximising economic recovery and assisting the Energy Transition.

To achieve this ambition the OGA will:

Promote data, digitalisation and data sharing through industry engagement, professional bodies, communities of practice, agencies, government departments and other ongoing initiatives.

This will be achieved when the OGA:

Has played an active role in enabling digitalisation initiatives and removed barriers to investment by making data as transparent as possible.

4.6 Measuring Progress

The success of this Digital Strategy will be measured in several ways:

- Progress on the completeness, quality, utility and transparency of data
- The extent to which enhanced analysis techniques are adopted
- Improvements in tools and datasets that support decision making and digital service offerings
- The level of digital skills and culture against digital skills maturity frameworks such as the Government Digital Service 7 lenses maturity matrix⁴
- Uptake of digital technologies and use of data by industry.

In addition, the OGA will monitor the benefits of its digital strategy, gathering and sharing success stories of its deployment. Digitalisation is a long-term programme and some benefits may only be realised beyond the timeframe defined in this strategy.

⁴ Government Digital Service, Seven Lenses Maturity Matrix, 19th January 2019
<https://www.gov.uk/government/publications/7-lenses-maturity-matrix>

5. The benefits of the OGA digital strategy

In summary, the OGA digital strategy will bring the following benefits:

- Progressively deliver a cohesive source of authoritative and transparent data
- Foster deeper insight using advanced analysis, analytics and machine learning
- Enhance OGA regulatory excellence by using data and technology to support decision-making and provide enhanced user experiences to stakeholders
- Deliver a digitally enabled culture and way of working that supports the OGA's "great place to work" initiative with better data, information and automated and streamlined workflows
- Promote digitalisation and data as an enabler of new and disruptive business models to lower costs, develop new digital platforms and improve digital experiences

6. Risks and opportunities

Overlooking the cultural aspects of any major change programme can be a barrier to change.

The OGA will mitigate this risk by ensuring the pace of change is appropriate, enthusiasm is maintained and communication is effective. It is important that the OGA continues to maintain its focus, progressively delivering tangible results and meeting the needs of its stakeholders.

Having limited digital skills to deliver components of the change programme is a considerable risk as organisations compete for scarce digital skills. It is therefore important that digital skills are developed. This will be complemented by working with strategic partners to deliver digital, data and technology solutions upskilling OGA staff and our partners in the process.

The implementation of the strategy is subject to formal governance and assurance processes including risk management. As digital technology evolves at a rapid pace the OGA will monitor changes to the digital landscape carefully, and where required, adjust its strategy to take advantage of new opportunities.

The contribution that digitalisation in the sector can make in support of Vision 2035 and the energy transition is large. The OGA and industry have made significant progress in the last three years in using digital solutions. The OGA and industry must now balance risk and reward to fully capitalise on an approach that emphasises data sharing and uses digitalisation to deliver value.



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