North Sea Transition Authority

Data and Digital Strategy

2026–2030

Contents

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1. Introduction

As the energy landscape changes, the North Sea Transition Authority (NSTA) must adapt and evolve. This strategy outlines how the NSTA will use digital and data to support UK energy production and security, drive emissions reductions, and accelerate the energy transition.

To continue delivering trusted oversight and transparent regulatory decisions, the NSTA needs modern digital and data foundations that are scalable, and capable of supporting transactions and insight. This is delivered through the Digital Energy Platform which incorporates the full NSTA digital and data estate, currently consisting of the National Data Repository, UK Energy Portal, Open data site (GIS), website and core IT services.

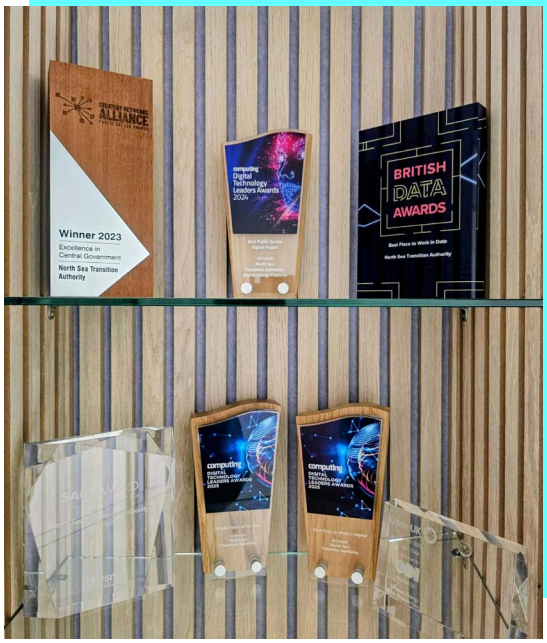
2. Progress to date

The NSTA has evolved in the last decade. From having limited digital capability with no dedicated IT function into an organisation recognised for its award-winning digital and data products. In the early years, there was a focus on creating legislative powers for reporting information and samples, building an IT function and providing authoritative insight to stakeholders.

Guided by the five pillars of the NSTA Digital Strategy 2020–2025, focus moved to addressing legacy applications and building new products with partners to make data more accessible.

1. People, skills and culture

NSTA launched a digital development programme to embed digital skills and agile ways of working across the organisation. A Digital Academy, rolling awareness sessions and a revived Digital Ambassadors network have strengthened capability, while restructuring the digital, data and PMO teams brought in specialist expertise. These efforts earned recognition as Best Place to Work in Digital and Data, and Digital Team of the Year in 2025.



2. Transforming access to information

The Digital Energy Platform was strengthened by digitalising key processes, modernising legacy applications and creating the National Data Repository (NDR). Now in public ownership, the NDR runs on a cloud-first platform and has grown more than 100-fold since 2019, with over one million files available for reuse. New services such as Pipeline Works Authorisation (PWA), Well and Installation Operator Service (WIOS) and Energy Pathfinder have reduced industry burden.

3. Analytics and intelligence

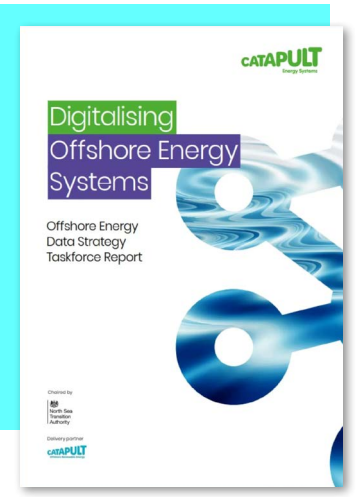
NSTA developed a powerful analytics and business intelligence approach to improve decision-making and data quality. A data warehouse and BI function streamline workflows, while the Open Data GIS platform attracts 1.75 million weekly hits, up 45% since 2020. Dynamic dashboards, APIs and benchmarking reports provide industry insight, and enhanced tools reinforce NSTA's reputation for authoritative, accurate analysis.

4. Collaborate, partner and assure

NSTA built strong partnerships across government and industry, hosting annual supplier days and user groups to shape services like PWA, WIOS and data compliance. Collaboration with organisations such as the Crown Estate and Norwegian Offshore Directorate, and advisory roles on national initiatives (UKCSM, NUAR) have ensured shared learning. Governance and assurance were also streamlined to meet Cabinet Office functional standards.

5. Influence

NSTA championed digital and data across the offshore energy sector, forming and chairing the Offshore Energy Digital Strategy Group. Under its banner, industry-wide data principles were developed and a signposting page published to guide sharing and innovation. Through conferences, forums, media and podcasts, NSTA has shared best practice and reinforced its leadership in digital transformation.



DIGITAL STRATEGY GROUP

The period from 2020 to 2025 marked a phase of growth and expansion then stabilisation as the NSTA adapted to its expanded digital and data team, new ways of working, and a complex technology stack.

What's next

Good progress on the ambition to build a single-entry point to all NSTA services has been made, but more is still needed to ensure products are not siloed, the full benefits of new technologies are achieved and solutions keep up with the pace of change:

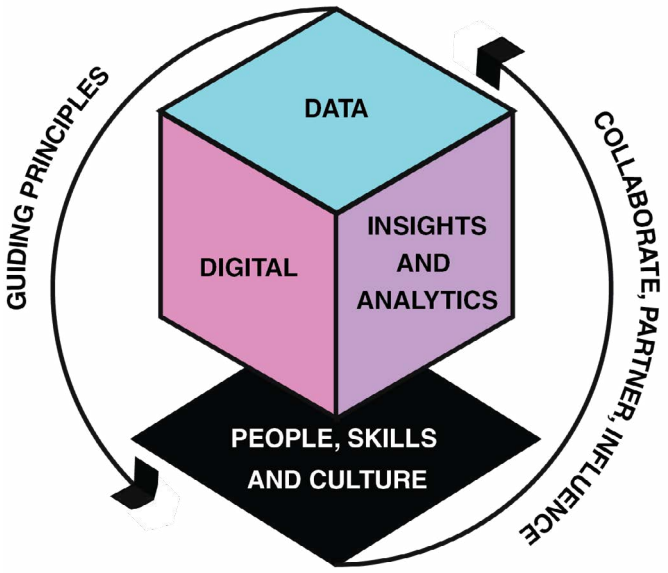
- data ownership, integration and governance needs to be improved. NSTA data architecture has evolved organically over 10 years. Whilst this has served us well to date it has resulted in gaps in data pipelines, making it challenging to bring some data sources together for insights and analysis.
- substantial legacy infrastructure remains, primarily on the UK Energy Portal.
- there remains a digital and data skill gap across the offshore energy sector and with the pace of change in technology within the NSTA.
- technology has moved at pace during this period and the NSTA needs to continue to review new technologies to identify areas of benefit.

3. What the organisation needs now

The NSTA's fundamental objectives, role and activities have seen significant changes in recent years, and with the North Sea Future Plan will continue to do so. To continue to put data at the heart of how the NSTA operates, digital and data needs to keep pace with change but also remain flexible enough to pivot for the future.

This strategy sets out how digital foundations will be strengthened, strong data governance will be established and flexible data architecture and robust digital infrastructure will be implemented. This will enable the NSTA to keep pace with technology and flexibly respond to changing requirements.

The strategy is underpinned by guiding principles, including people, skills and culture and collaboration, with three key building blocks: **data**, **digital** and **insights and analytics**.



Ambition: an integrated view on the UK Continental Shelf (UKCS) where we can understand the current state, assess future impacts of decisions and scenarios, and employ predictive analysis from multiple lenses.

Purpose: harness data and digital tools to inform and enhance strategic decisions that support UK energy production and security, drive emissions reductions, and accelerate the energy transition to a sustainable energy future.

4. Guiding principles

The NSTA will embed the following principles within all digital and data project and services.

1. People, skills and culture

The NSTA team are the foundation of our digital and data approach. The NSTA is committed to creating a data-centric culture and a highly digitally skilled workforce that prioritises innovation, underpinned by our core values of being accountable, fair, robust and considerate.

By equipping the team with the necessary skills and tools, we aim to create an agile workforce capable of adapting to emerging technologies, delivering value fast, and driving continuous improvement in digital and data solutions. To ensure this we will:

- continue to foster a culture that promotes ethical innovation, continuous learning and responsible experimentation.
- support continuous learning for essential digital skills through our Digital Academy.
- provide protected time for innovation and internal knowledge sharing.

2. User-centred, transparent, and ethical by design

Digital solutions should be intuitive, user-centric and designed for self-service where possible. An ethical, transparent and responsible approach should be taken in all solutions, particularly when using technologies such as AI.

3. Secure by design

Data security and privacy will be embedded within every system and process.

4. Cloud first, efficient and sustainable solutions

Sustainable cloud-based solutions will be the default. Flexibility and efficiency in design, building in maximum usage of each digital asset, will be key.

5. Integrated by design

Digital services will be underpinned by coherent, interoperable data foundations that enable insight and reuse of high-value datasets across the offshore energy lifecycle.

6. Curiosity in innovation

By being curious and trying new technologies the NSTA can learn and identify new ways to deliver. Fail-fast pilots and proof of concepts will be encouraged.

7. Collaborative by default

Strong relationships across suppliers, industry, government and academia will be maintained. By aligning standards and sharing platforms the NSTA aims to increase delivery. The NSTA will learn from partners' experiences and participate in forums to share practices, knowledge and keep abreast of emerging uses of technology.

5. Building blocks

The NSTA has always put data at the heart of its approach and will continue to do so. As regulatory responsibilities evolve, the NSTA will adopt a data first approach, building on existing foundations by developing an integrated and future-ready data environment. This includes modernising how data flows across the organisation, establishing consistent metadata and definitions, and enabling the responsible use of trusted, authoritative datasets.

In delivering a data first approach, the NSTA needs a robust underlying data architecture and governance. Data must be consistent, interoperable and insight-ready.
To do this integration across systems must be strengthened, enhancing metadata and lineage, ensuring efficient data processing, validation and reuse at scale.

To put these foundations in place, the NSTA will undertake a data foundations programme. This will include a structured review of our current data architecture, the design of a connected future data ecosystem, and the development of a data governance operating model that defines clear ownership, standards and responsibilities, key activities will include:

1. Clear accountability, ownership and stewardship

- define data ownership, stewardship and quality management responsibilities and embed a governance model to ensure consistent data management, reducing reliance on individual knowledge, ensuring accountability and streamlining effort.
- develop quality-assured datasets that are securely accessible enabling advanced analytics while ensuring data protection and confidentiality are maintained.

2. Unified standards and metadata

- establish standards for units, formats, and taxonomies, including creating a common data dictionary and master definitions to promote more consistent data access, reporting and enable cross-domain integration.

3. Interoperable and scalable

- continue the modernisation journey from legacy systems to interoperable platforms; allowing data types to be captured, connected, and reused.
- strengthen data architecture to ensure datasets from multiple regulatory workflows are better connected and reused seamlessly, allowing richer insights, improved regulatory confidence and more efficient operations across the UKCS.
- enable users of the Digital Energy Platform to combine, visualise, and analyse data.

4. People, skills and culture

- ensure the value of data is understood by building internal capability around data governance and stewardship.
- develop foundational data skills such as data quality and management.
- embed a culture where data quality is an NSTA wide responsibility.

Outcome: ***Trusted high-quality data that is easily accessible and adds value to the NSTA purpose.***

DIGITAL

The NSTA will build on its data foundations to modernise key transactional systems, systems of record and digital tools that provide user-centric platforms.

To do this NSTA needs user-centric systems capable of processing transactions, providing systems of record and surfacing data. The NSTA will enhance its digital foundations to support higher levels of automation, scalable data processing and integrated analysis. This includes modernising legacy technology, making use of automation and AI/machine learning technologies and ensuring systems can accommodate increasing demand for high-quality regulatory data.

1. Secure, robust and flexible access

- implement a core IT strategy and Cyber Security strategy to provide secure mobile IT solutions.
- implement robust business continuity and disaster recovery plans with regular testing, ensuring resilience and reliability.

2. Modernise legacy systems and applications

- deliver the foundational elements of the UK Energy Portal roadmap to ensure a modern, secure and flexible underlying technology infrastructure.
- redevelop legacy applications to more automated, modern, intuitive and scalable platforms, digitalising offline processes and transforming ways of working.

3. Maintaining a robust digital infrastructure

- maintain and enhance the Digital Energy Platform as a cohesive collection of products and platforms, ensuring design is considered across the full platform integrating transactional systems, systems of records and data products.
- applications will be built in flexible ways to enable change in evolving requirements and take advantage of automation and AI.

- provide access to specialised tools that easily plug into NSTA systems to allow for complex analysis.

4. Driving innovation through technology

- encourage innovation by seeking ideas and perspectives through collaboration with partners, colleagues, industry, and other government organisations.
- create an environment that encourages innovative use of existing tools and experimentation with new ones.
- proactively explore AI solutions in an ethical manner, with a focus on automation.

5. People, skills and culture

- enable the NSTA team to maximise the use of digital tools, products and platforms, creating a culture of self service and innovation.

Outcome: ***A Digital Energy Platform that enables NSTA to deliver its purpose.***

INSIGHTS AND ANALYTICS

The NSTA is recognised as a trusted and authoritative source of data and analysis for the UK offshore energy sector. The NSTA will continue to build on this trusted status delivering integrated insights, evolving from descriptive analysis to predictive and prescriptive insights.

The continued growth of our analytical capability relies on strong, well-governed data foundations and easy to use digital tools. The ability to deliver more advanced analytics is dependent on consistency, integration and accessibility of underlying data. By reinforcing the importance of, and investing in, interoperable datasets and consistent metadata, the NSTA will enable analysts and partners to generate deeper insights across the entire UK offshore energy lifecycle.

1. Integrated analysis and insights

- enhance the value of insights by integrating analysis through bringing together information across multiple sources and subject areas.
- enable the full integration of all relevant data, no matter its point of origin.
- create unified access layers that provide consistent, transparent and reusable views of data.

2. Self-service dashboards and report outputs

- automate reporting and focus on more complex analytical work.
- common templates and shared data definitions will make it easier for teams to access, understand and reuse insights.

3. Predictive and prescriptive analytics

- develop strengths and expertise in descriptive analytics to expand into predictive and prescriptive techniques supported by appropriate tools, technologies and learning. Thereby ensuring decisions are informed by trusted, timely data.

4. People, skills and culture

- develop analytical skills across the organisation, to support better decisions.
- encourage curiosity and critical thinking to challenge assumptions and improve insight quality.

Outcome: ***Trusted integrated analysis facilitating better stewardship and regulation.***

6. Benefits

Flexibility

Building scalable and interoperable digital and data foundations will ensure the NSTA is prepared for the increasing demands of offshore hydrogen and carbon storage, decommissioning and emerging offshore energy sectors. This will enable better decisions and improve internal processes and ways of working.

Remaining agile and flexible, through organisation-wide digital and data capabilities and approach, will enable the NSTA to respond quicker to these changes.

Pace

Developing insight-ready, joined-up data and digital tools removes manual and offline work and speeds up decision-making. Through automating processes regulatory burden can be reduced and the NSTA team can focus on adding value to complex areas, contributing to the great place to work priority.

Access

The strategy lays the foundations for decision-makers to access and interact with the data they need using the right tools and skills.

Digital products and the data that feeds them are fundamental to achieving NSTA objectives. This strategy will enable quick, easy access to data and intuitive digital platforms to enable colleagues to undertake regulatory processes.

Leverage

This strategy will enable the NSTA to leverage a small but experienced team. By building data foundations and automating processes through digital tools, breaking down siloes and collaborating with key partners, the NSTA will be able to leverage tools such as AI to be able to deliver a high-quality regulatory service without increasing in size.

7. Risks

The NSTA is eager to continue to be innovative and to choose options based on maximising opportunities and potential higher benefit, even if those options carry a higher residual risk.

Some of the risks that may arise are:

Change

Any strategy requires a change to the way things are done, even more so with a programme designed intentionally to do things differently. Whilst the NSTA generally has a culture open to change, the risk continues that this creates uncertainty. There's a risk of resistance towards digitalisation of processes which will need to be managed.

Digital and data skills

The pace of technology change means that skills development is a continuous activity. To get the greatest value from digital and data everyone in the NSTA will need to devote time to continual development. Initiatives such as Innovation Time will need to continue to mitigate this.

Dependencies

This strategy needs to be aligned to the overall NSTA strategy and purpose. To do this delivery must adjust with changing circumstances but also be connected across the organisation. The delivery programme for this strategy will highlight key dependencies, both within the programme and across the NSTA.

Capacity and engagement

The major learning from the previous strategy is the risk that the wider organisation does not have capacity to engage with digital and data projects.

Pace of technology

Technology is moving at a greater pace than ever before. In the delivery of this strategy the NSTA will need to balance capacity and achievability with ambition to make use of new technologies.

8. Conclusion

To get the greatest value from digital and data, the NSTA must put data first, ensuring robust systems, trusted and traceable information, and a strong architecture that enables integration, interoperability and reuse at scale.

This foundation must be supported by modern, user-centric digital platforms that keep pace with technology, balance speed with integrity, and equip both the NSTA and industry with the skills to use emerging tools responsibly.

Finally, by advancing analytics and insight, the NSTA will provide stakeholders with clear, actionable views of UKCS activity, enabling informed decisions and driving value across the energy transition.

North Sea Transition Authority

The North Sea Transition Authority is the business name for the Oil and Gas Authority, a limited company registered in England and Wales with registered number 09666504 and VAT registered number 249433979.
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