



North Sea
Transition
Authority

Think Big, Start MVP

Public Sector Innovation week

Ash Abdelhamid

Corporate Services and Programme Delivery

March 2025

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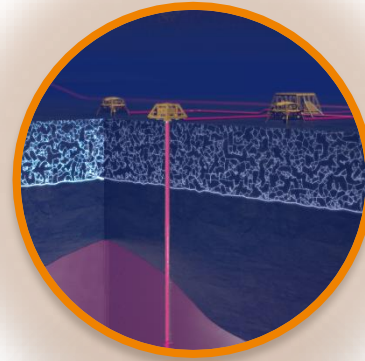
NSTA – What we do

Three main 'buckets' of NSTA work, with several interdependencies and feedback loops between them, many of which are outside NSTA immediate scope/remit



Energy production & security

Economic recovery of O&G
Storage: natural gas and H₂



Accelerating the energy transition

Integration
Carbon storage and hydrogen
Co-location and spatial
Digital and data
Cost-effective decommissioning



Emissions reduction

Clean power generation
Flaring and venting
Efficiencies
Technology

Capital, skills
Infrastructure reuse

Integration, floating wind
Skills, supply chain

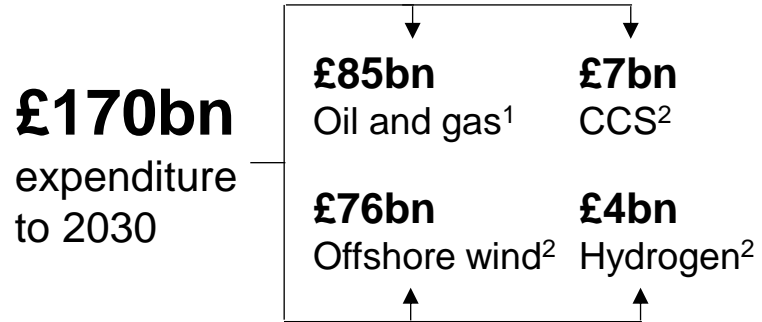
Capital

Licence to operate



North Sea Transition – UK's growth opportunity

Industrial potential



200,000+
Good, skilled jobs²



Existing **world class energy supply chain** from oil and gas sector

Infrastructure



100+ pipelines with repurposing potential

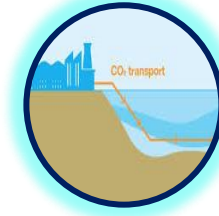


250+ subsea installations



Integration of multiple energy systems

Natural resources



78GT of CO₂ storage potential⁴



~3.75bn barrels of oil and gas¹



50GW fixed and floating offshore wind³

“Ready access to timely data is a prerequisite for a competitive market and this is even more important in an industry which relies on good data to create value.”

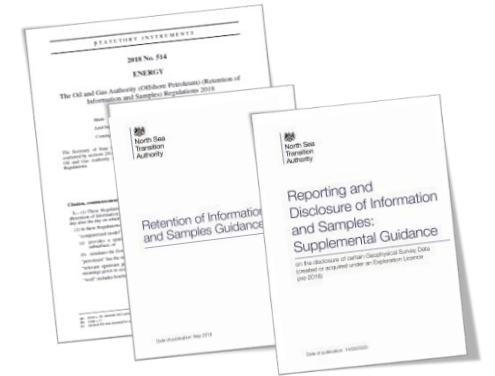
The Wood Maximising Recovery Review



Strategic Vision Digital Strategies



Powers Energy Act 2016 Petroleum Act 1998



Early Action Open data, NDR, website & access to data



Early Outcomes Improved compliance, benchmarking & data quality

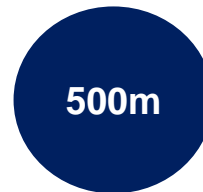




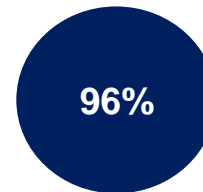
To create value for the NSTA, industry and stakeholders by delivering digital, data and technology excellence

Five pillars

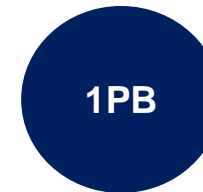
- People, skills & culture
- Transform access to information
- Analytics & intelligence
- Collaborate, partner & assure
- Influence & promote



API hits



Data in the public domain



Data held



~500m spatial server requests



4275102

2990461

2110034

Time (by week 2016 - today)

Our Digital Strategy

To create value for the NSTA, industry and stakeholders by delivering digital, data and technology excellence

Five Pillars

- People, skills & culture
- Transform access to information
- Analytics & intelligence
- Collaborate, partner & assure
- Influence & promote

500m

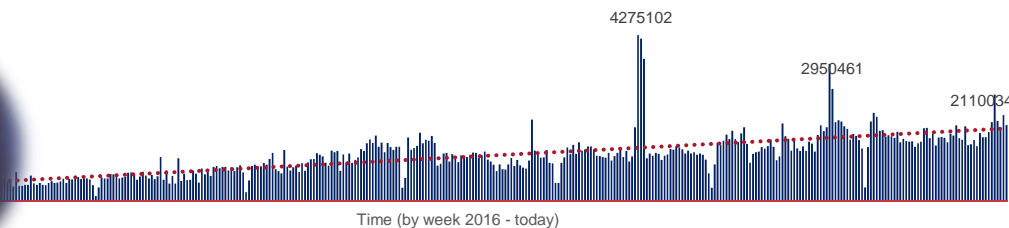
API hits

96%

Data in the public domain

1PB

Data held



NSTA Digital Strategy 2020–2025



OGA Pipeline Works Authorisations

Test User2 Sign out

Work area > Task list

New PWA application

Submit a Pipeline Works Authorisation

Delete application

- Application users**
 - Application users **CONTACT COMPLETED**
- Administrative details**
 - Field information **COMPLETED**
 - Project information **COMPLETED**
 - Environmental and decommissioning **COMPLETED**
 - Holders, users, operators, and owners **COMPLETED**
 - Partner approval letters **COMPLETED**
- Location details**
 - Location details **COMPLETED**
 - Blocks and crossing agreements **COMPLETED**
- Technical details**
 - General technical details **COMPLETED**
 - Fluid composition **COMPLETED**
 - Other properties **COMPLETED**
 - Design and operating conditions **COMPLETED**
- Pipelines**
 - Pipelines **NOT COMPLETED**
 - Pipeline schematics and other diagrams **NOT COMPLETED**
 - Pipeline holders, users, operators and owners **NOT COMPLETED**
- Deposits**
 - Permanent deposits **NOT COMPLETED**
- Submit application**
 - In order to submit this application, all sections above must have a **COMPLETED** label.
 - Review and submit application

Agile



Ways of working

Approaches and tools to drive NSTA's DigX priorities.

- Continuous improvement
- Agile Scrum
- Prioritisation
- Work fast

Digital academy

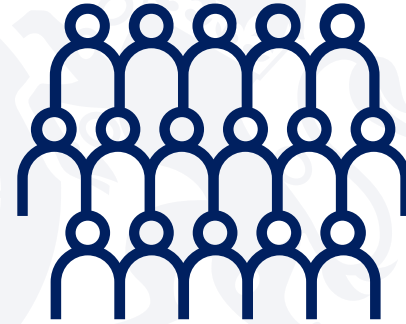


Always learning

Encouragement to commit to lifelong learning supported by internal and external expertise.

- Awareness
- Training
- Freedom to explore

Digital ambassadors



Try something new

Groups of digital, data & technology problem solvers trying new things. Developing ideas and potential solutions.

- Supporting colleagues
- Encourage innovation

Culture



Embracing change

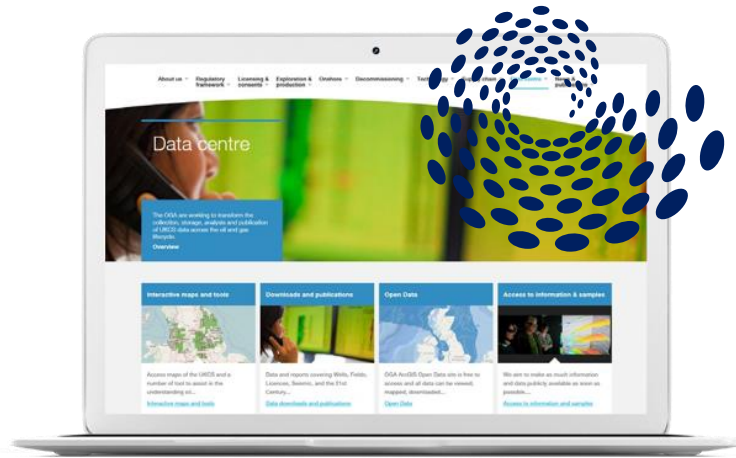
Creating the environment where change is embraced allowing the adoption of digital, data and technology to take root.

- Leadership buy in
- Diversity & Inclusion
- Processes/decision making



Transform access to information

Improved Data Accessibility



Getting data to the users

Making high-quality, authoritative data easily accessible to stakeholders, enabling more efficient decision-making

- APIs, downloads and media
- Spatial data
- Legacy data

Unified Digital Platform

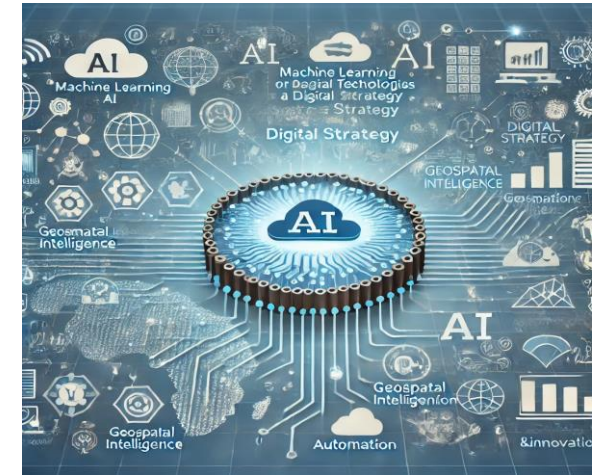


Easy to find, Easy to use

Driving towards user role focused interfaces and a single sign on experience

- Secure, user-friendly platform
- Reducing complexity
- Eliminating manual processes
- Personalised role-based experiences

Support for Advanced Technologies



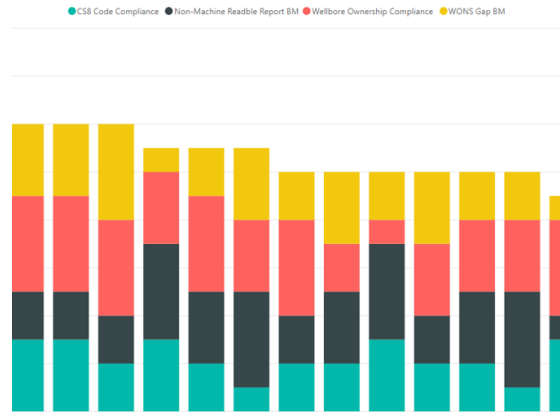
Innovation

Providing data in formats suitable for advanced technologies

- Machine learning
- Geospatial intelligence
- Innovative use of data
- Constantly evolving



Data Quality

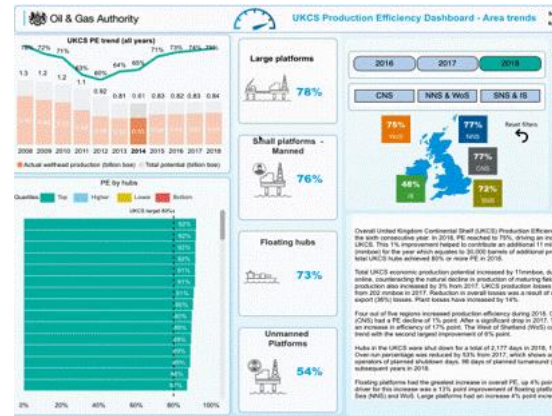


Garbage In, Garbage Out

Without accurate, quality data the outcome of what follows is compromised

- Robust data regulations
- Information & samples co-ordinators
- Targeted data campaigns

Data Insights

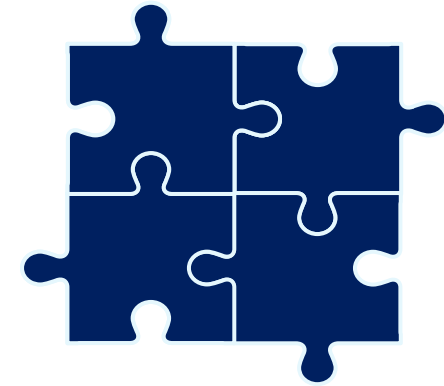


Insights lead to action

Advanced analytics, business intelligence tools and data science techniques encourage action:

- Emissions Monitoring
- Production efficiency
- Unit operating costs

Data Warehousing



Authoritative source

Data from various internal (transactional systems) and external sources brought together

- Enhanced data quality
- Standardised
- Improved decision making



Collaborate, partner & assure



Partnering with vendors



Mutual benefit

Working with suppliers to leverage our combined expertise.

- Energy Portal Apps
- NDR future components
- MS Azure infrastructure & apps
- Process discipline
- Data cleansing & conditioning

Governmental synergies



Who does what and when

Ensuring data is reported once by the appropriate organisation and is used widely.

- Limiting burden on industry
- Cross departmental collaboration
- Re-using data for Energy Transition

Industry groups



Working in collaboration

Leveraging continuous improvements

- Focused NSTA effort
- Identify opportunities for shared platform
- Advisory groups



Case studies



Promoting the positive

Highlighting good practice and exciting new technologies.

Encouraging others to follow and lead digital change

- Seismic in the cloud
- Analytics & ML/AI
- Data quality & accuracy

Awareness

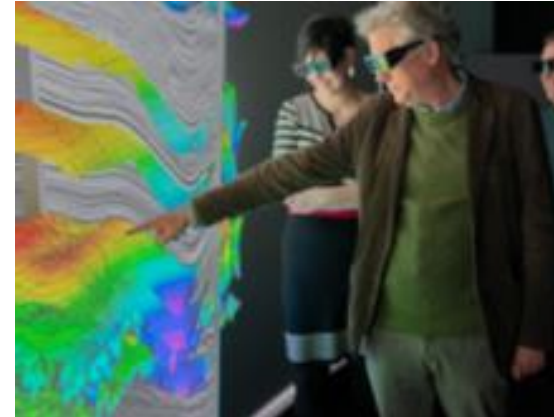


Sharing NSTA Vision

Communicating NSTA's vision across industry, government, academia and society.

- Web presence
- Presentations & events
- Professional body membership

Working groups

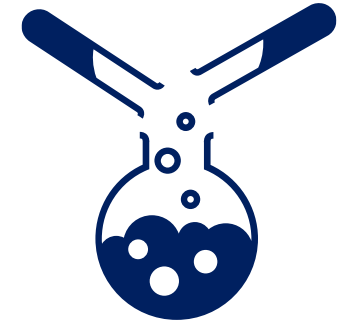


Influencing at all levels

Representation on industry groups providing expertise and guidance.

- NSTD Forum
- OEUK IM Forum
- Digital Strategy Group
- Government groups

Catalyst for change



Enabling change

Creating the conditions to enable digital, data and technology change to take hold.

- Unique access to data
- Promote data sharing
- Supply data and business insights



Our digital portals

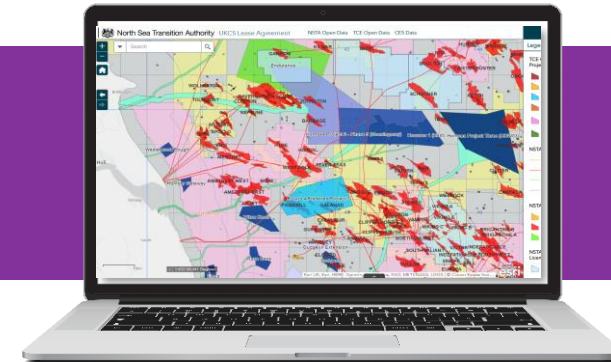
National Data Repository



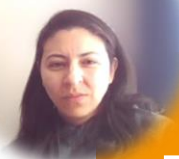
Energy Pathfinder



Open Data Site (GIS)



Energy Portal



Supply Chain Action Plan Service



Process digitalisation

- Previously manual process
- Efforts in collating information from excel
- Action plans submitted, reviewed and approved in new Digitalised Service

Well & Installation Operator Service



Process improvement

- Previously, the record of approved entities was kept in Excel
- New reliable system of records of companies authorised to conduct offshore petroleum and well operations on the UKCS
- Integration with well consenting system

Fields Consents System



Ensuring accurate data

- Previously built in old, less supported technology
- New, modern platform to support the production, flaring and venting consenting workflows of the NSTA
- Ensuring the workflows capture new and potential Net Zero requirements



The Evolution of the Open Data Site



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Policies Publications Consultations Statistics Announcements

Home

National Statistics
Digest of UK Energy Statistics (DUKES): petroleum

DUKES chapter 3: statistics on supply and demand for petroleum.

Published 26 July 2012
Last updated 27 July 2017 — see all updates
From: Department for Business, Energy & Industrial Strategy

Documents
DUKES 2017 Chapter 3: Petroleum
PDF, 1.03MB, 29 pages

Related content
Collection
[Oil statistics](#)
[Digest of UK Energy Statistics \(DUKES\)](#)

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The improvement and development of effective data and information management systems is a key objective for the OGA and is vital to improve the commercial, operational and technical performance of the oil and gas industry.

As of 30th June 2021, the OGA have made changes to the licences GIS datasets

North Sea Transition Authority
Energy Pathfinder Energy Portal Careers

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Data and digital
Data and insights

Close menu

- Data and insights
- Insights and analysis
- Data
- About NSTA data

The NSTA is working to transform the collection, storage, analysis and publication of UKCS data across the oil and gas and carbon storage lifecycle and including energy transition activities.

Insights and analysis
Data downloads
Maps and dashboards

Oil and Gas Authority Open Data Site

Search for open data

What is Oil and Gas Authority Open Data?

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OGA's Open Data Site

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MAP

- Quaternary Maps
- UKCS Maps
- 2010 Maps
- 1985 Maps
- 2010 Maps
- 2015 Maps
- 1985 Sea Maps

- Wells
- Licences
- Fields
- Seismic
- 2010 Offshore Round
- Supplementary Round 2016
- 2015 Offshore Round
- 14th Offshore Round
- Government Schemes

GOVING 300H

UKCSA - Co-ventured Systems Guidance
OGA - Data Releases

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About us The move to net zero Regulatory Information Licensing & Compliance Exploration & Production

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- Production
- Exploration Data Releases
- Refrackgements
- E & A Well Results
- Round Announcements
- PDF Maps
- Studies and Statistics
- UK NOR

Search for

Evolution of GIS

Collaborating to add value

The **Offshore Energy Data Strategy (OEDS) Taskforce** ran 2021 – 2022 to encourage a modern, digitalised, and integrated offshore energy sector, seven recommendations to create the conditions for better data sharing and digitalisation initiatives



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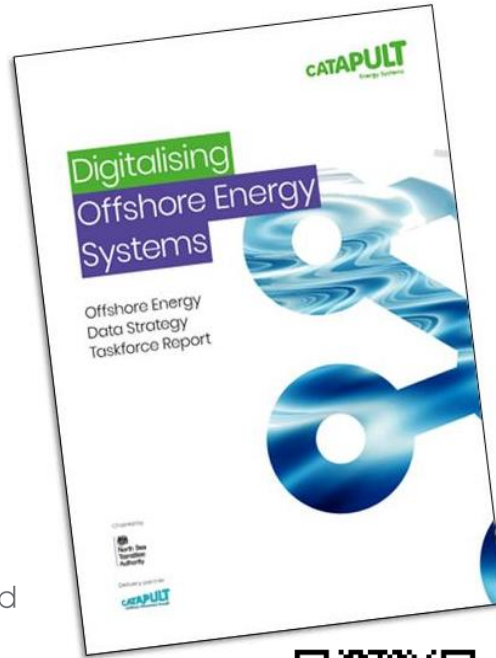


Net Zero
Technology
Centre

Technology Driving Transition



Crown Estate
Scotland
Oighreachd a' Chrùin Alba



Create a modern, digitalised and integrated offshore energy system

Strategic recommendations

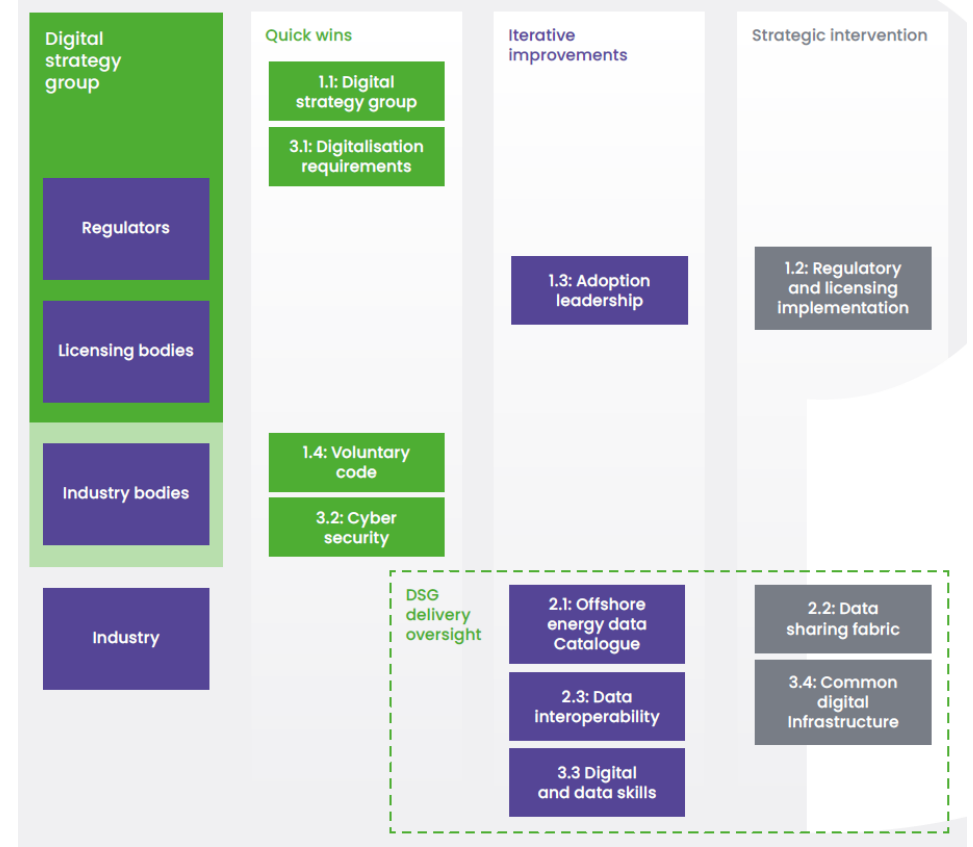
1. Unifying data principles
2. Delivering a common data toolkit
3. Driving cross-sector digitalisation

Implementation recommendations

- A. Advancing data sharing
- B. Advancing data coordination
- C. Leveraging asset data
- D. Emissions data for Net Zero



North Sea Transition Authority



In 2022 the NSTA took part in forming the **Offshore Energy Digital Strategy Group (DSG)** with Taskforce members and other partners to deliver recommendations through 3 taskgroups:

- Unifying data principles – Chaired by the Open Data Institute
- Delivering a common data toolkit – Chaired by NZTC and NSTA
- Driving cross sector digitalisation – Chaired by OEUK



Energy integration with technology



North Sea Transition Authority

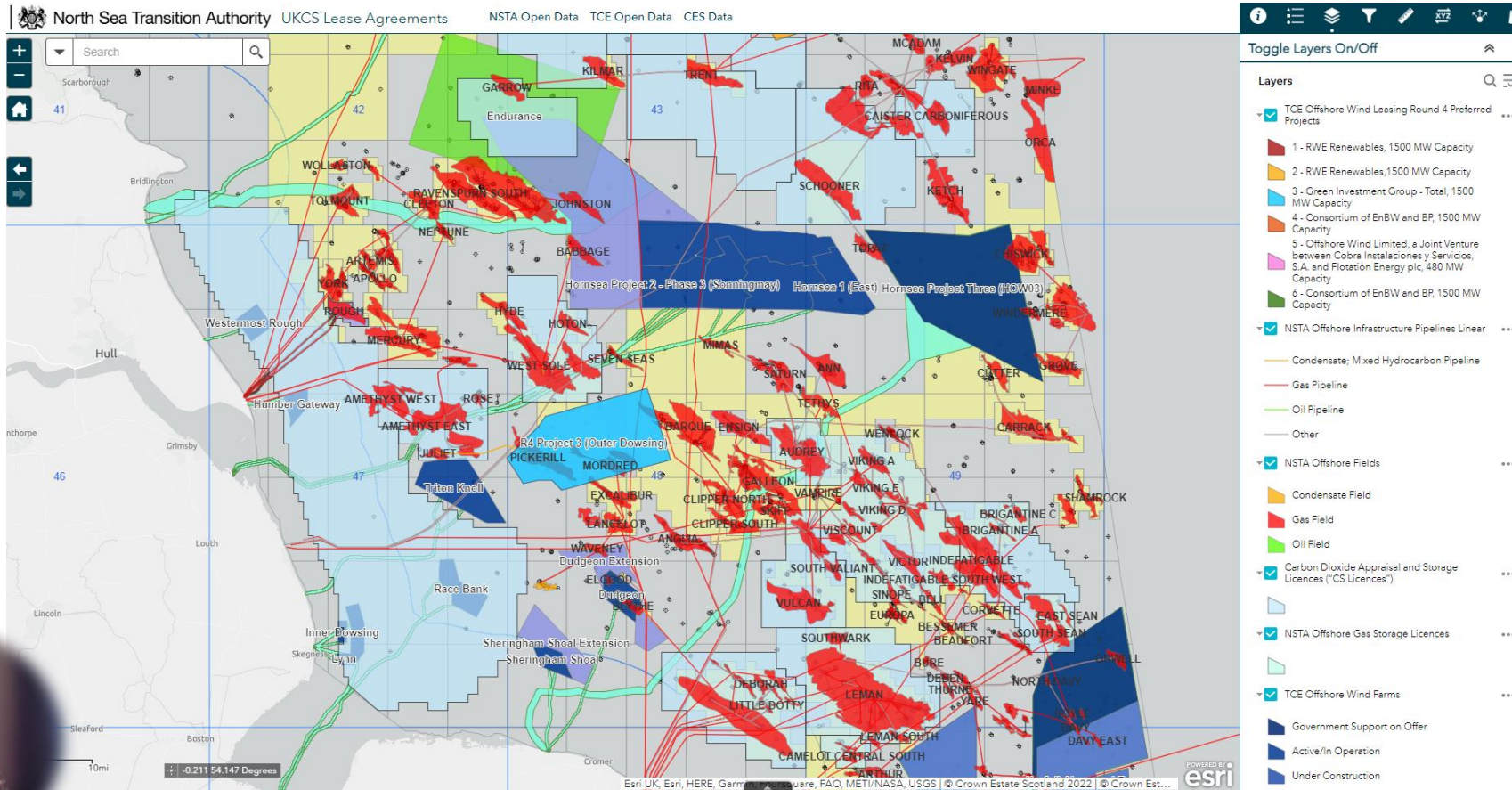


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THE CROWN
ESTATE



Crown Estate
Scotland
Oighreachd a' Chrùin Alba



“Data is vital to make informed decisions that address the [energy transition] challenges”

“UK is leading the way in data being available to make the best decisions”

Prof. John Underhill, Director of Centre for Energy Transition, University of Aberdeen



25K+ page
views a
month

APIs

Evolution to collaborate



Enabling data to be used for new priorities



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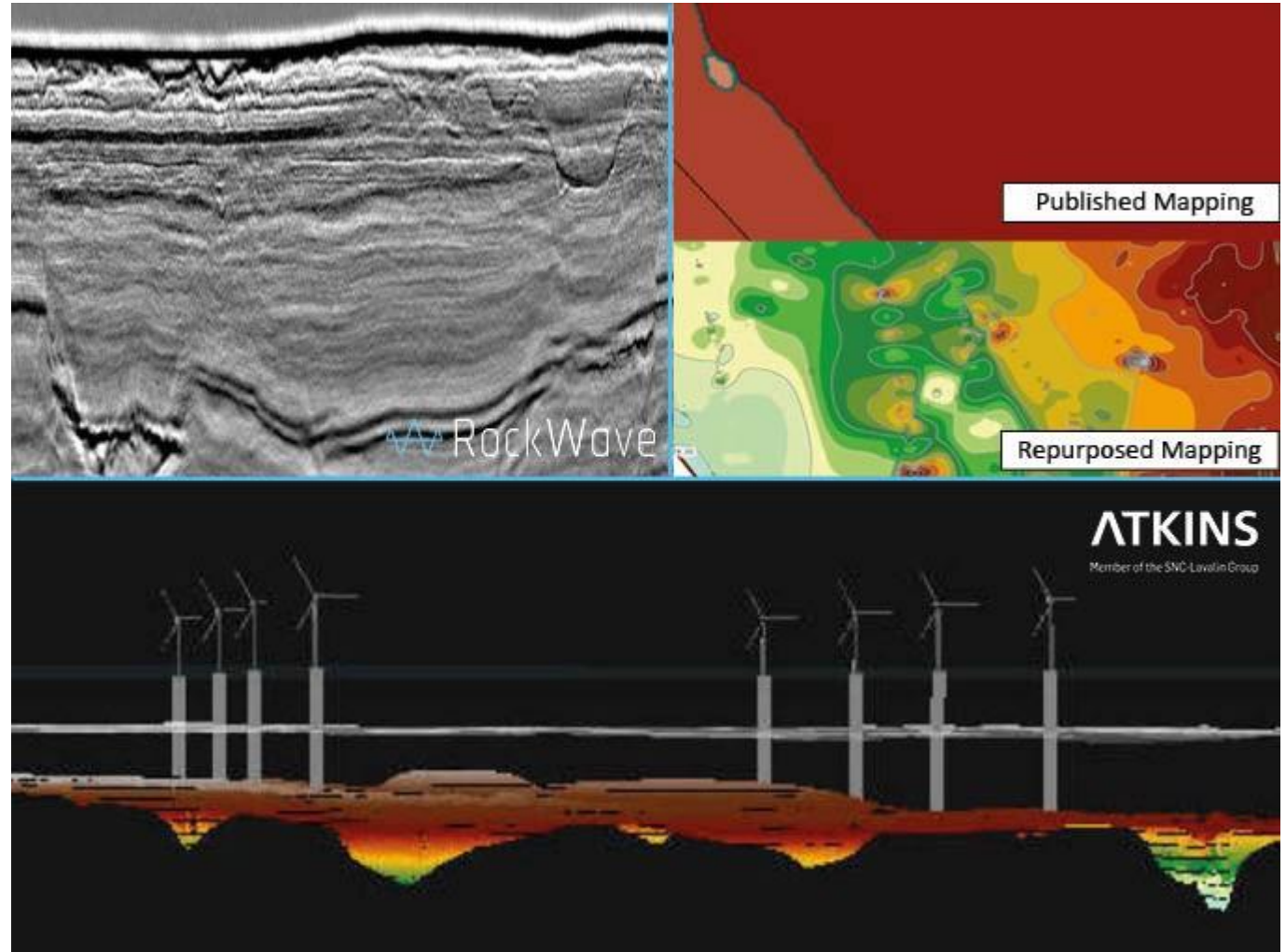
Repurposing data for offshore wind

The data

- 2015 UK government funded NSTA acquisition of seismic surveys
- 40,000 km of new data
- 60 years of legacy data collected for oil and gas operations

Repurposing

- Crown Estate Scotland ScotWind lease round
- RockWave repurposed the NDR data to optimise resolution of top 100m as starting point for models
- This shallow subsurface data would be less likely to be used in the original purpose of oil and gas analysis





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Thank you

