



Accelerate Deployment

*Technology Managers' Network meeting
16th October 2024*





North Sea
Transition
Authority

Technology Insights Report 2024

Advance presentation to the Technology Leadership Board's
Technology Managers' Network

Alan Ransom – Development Engineer, NSTA

Ernie Lamza – Technology Manager, NSTA

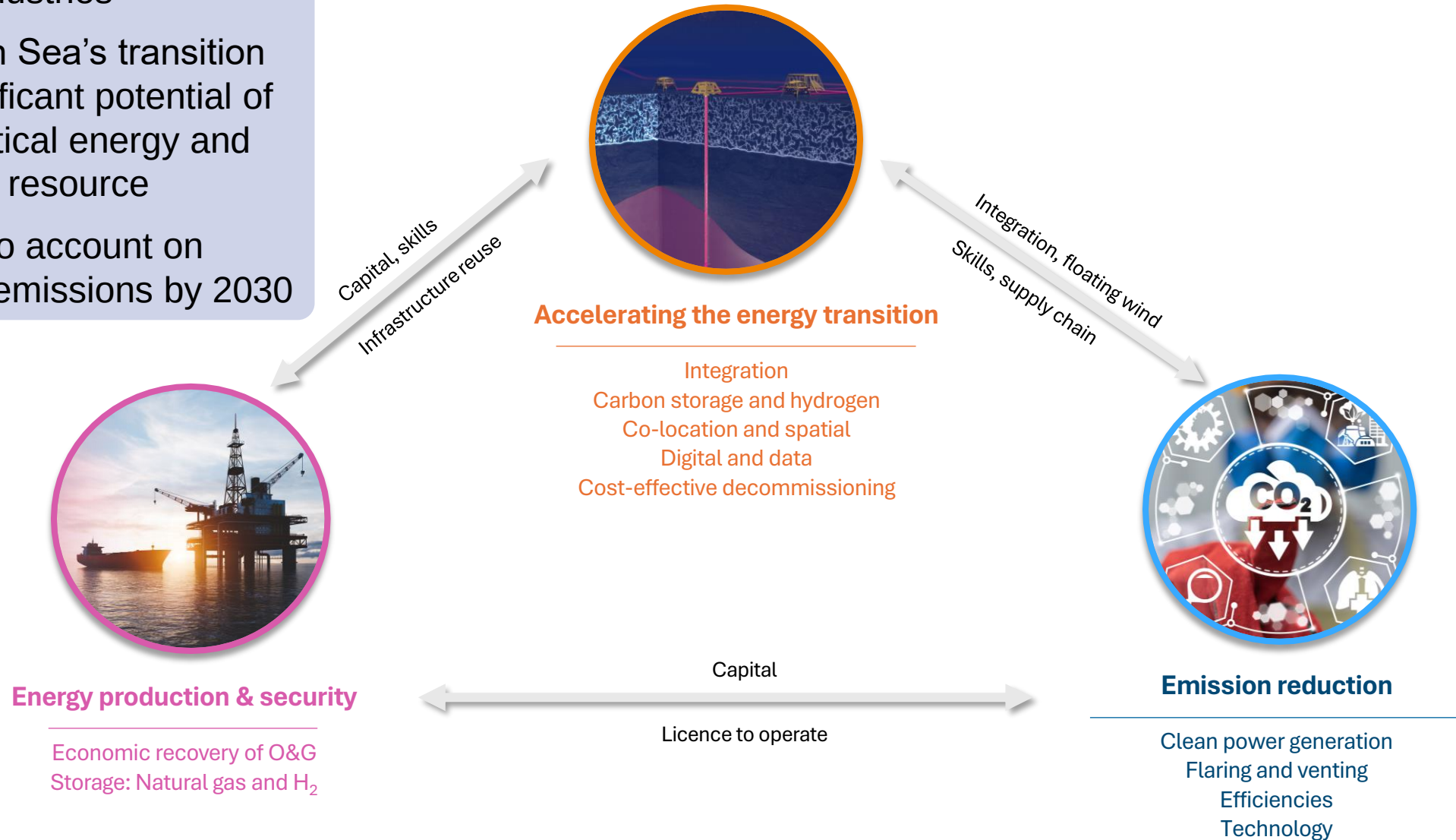
16th October 2024

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- NSTA regulates and influences the oil and gas, offshore hydrogen, and carbon storage industries
- We drive the North Sea's transition to realise the significant potential of the UKCS as a critical energy and carbon abatement resource
- We hold industry to account on halving upstream emissions by 2030

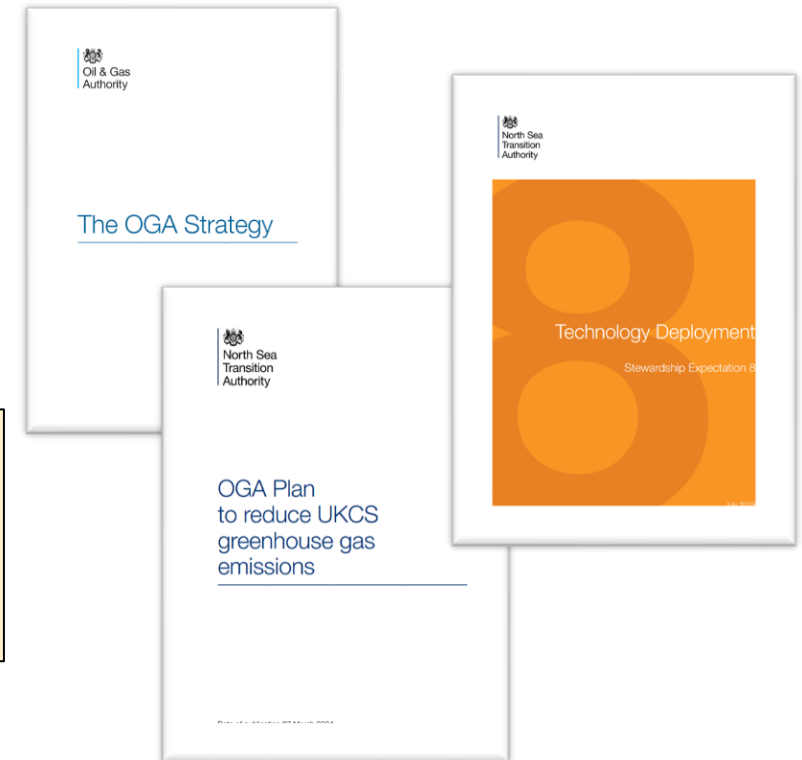


Technology Insights: Context & Contents

- OGA Strategy; OGA Plan
- Annual UK Stewardship Survey – Technology aspects
- Stewardship Expectation 08 – Technology Deployment
 - Technology Planning
 - Embedding technology in the business cycle
 - Widespread deployment of technology in a timely manner
- Tier reviews with Operators
- Feedback to the industry through the **Technology Insights Report**

- Advance highlights being presented today
 - Comments welcome – now or later
 - Interaction today is encouraged – share your deployment experiences

- **Technology Insights Report 2024** will be posted on the NSTA website later this month – interactive with links.



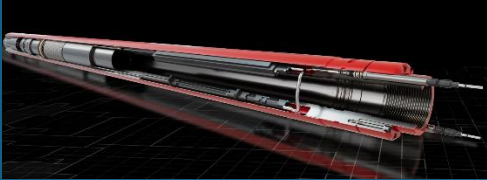
[NSTA Technology Survey & Insights 2023 \(nstaauthority.co.uk\)](https://nstaauthority.co.uk)

50 UKCS Operators completed the annual Technology Survey and submitted Technology Plans by the end of February 2024.

There was strong evidence of a continuing focus on technologies for the effective and cost-efficient development of remaining hydrocarbon resources, complemented by efforts to reduce emissions.

1250 Discrete Technologies reported this year (increase of 50) - notable examples:

Drilling and well construction



- Low-cost platform modular drilling rig systems
- Lightweight compact trees
- Thru-tubing isolation barrier valve
- Digital well planning using AI
- Combined wireline tool strings
- Tubing retrievable surface controlled subsurface safety valve

Facilities Design and Inspections



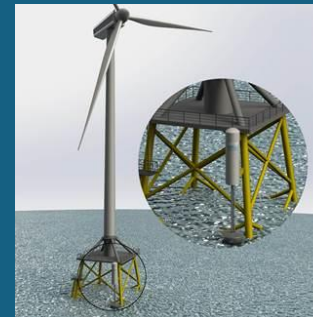
- High frequency vibration and axial data analysis
- Cost efficient pipelines & longer tie-backs
- Subsea gas compression and multiphase boosting
- Non-intrusive inspection technologies
- AI for risk-based inspection systems
- Controls and automation

Well intervention



- Wireless downhole surveillance technologies
- Disposable fibre-lines
- Retrofit DHSVs and ESPs
- Flexible zonal isolation solutions
- Real time slickline and coiled tubing solutions
- Water shut-off solutions

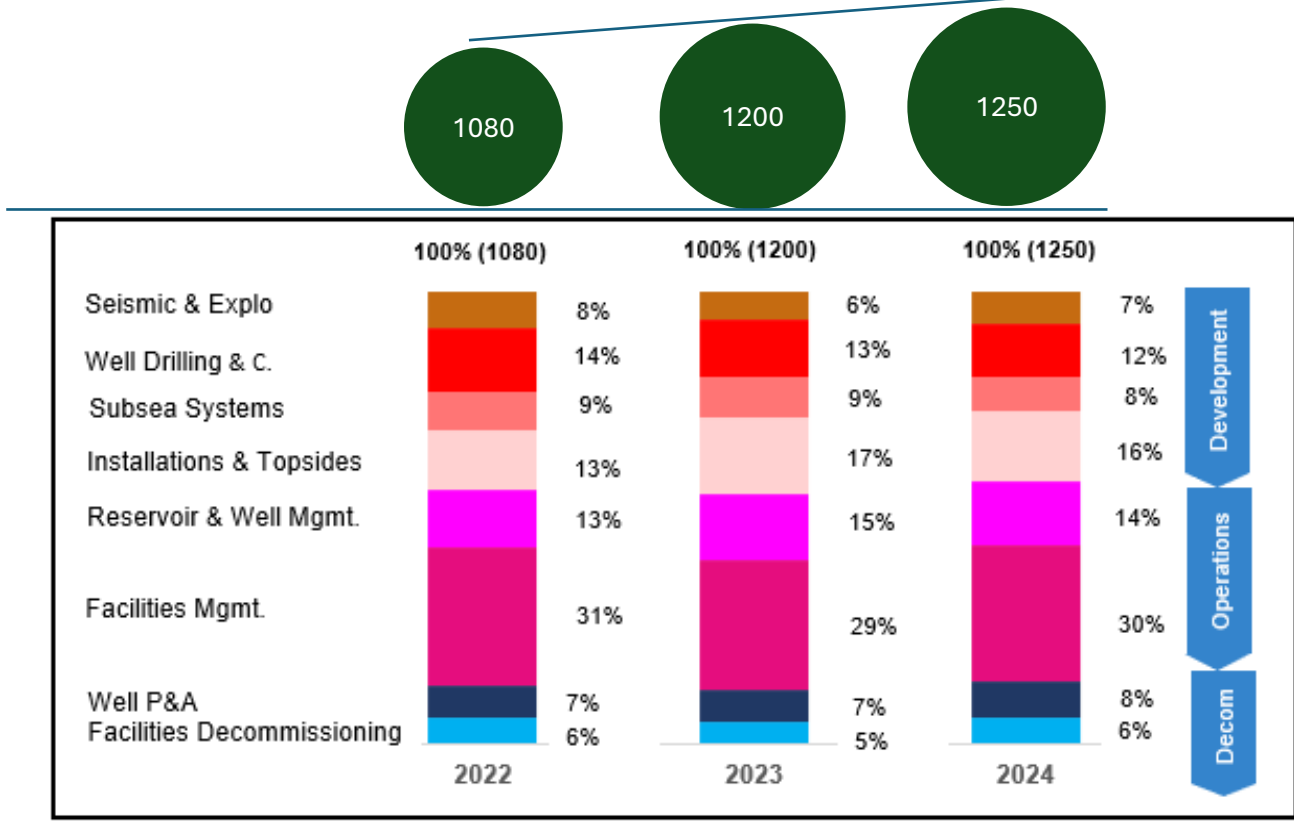
Emission reduction



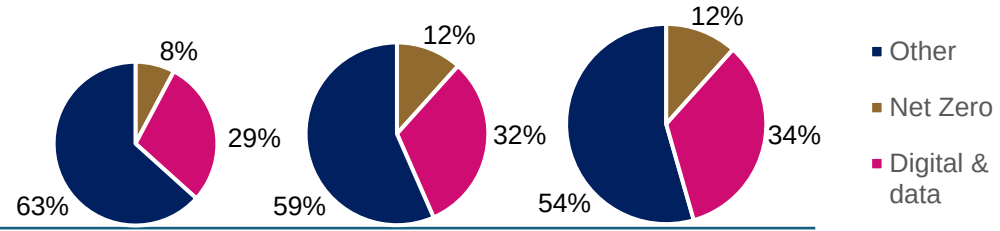
- Flare gas recovery systems
- Vapour recovery systems
- Enhanced emissions monitoring – including fugitives and flare efficiency measurement
- Electrification
- Hybrid energy systems

Technology Survey & Plans

Number of technologies reported (UKCS operators)



Of which...



1,250 technologies referenced in 2024. This includes each case of the reported use of a specific technology by an Operator. If an operator uses a technology on more than one asset it is only counted as a single use for this figure.

This net increase accounts for removal of successful technologies now considered mainstream (business as usual) and unsuccessful technologies after their screening and pilots.

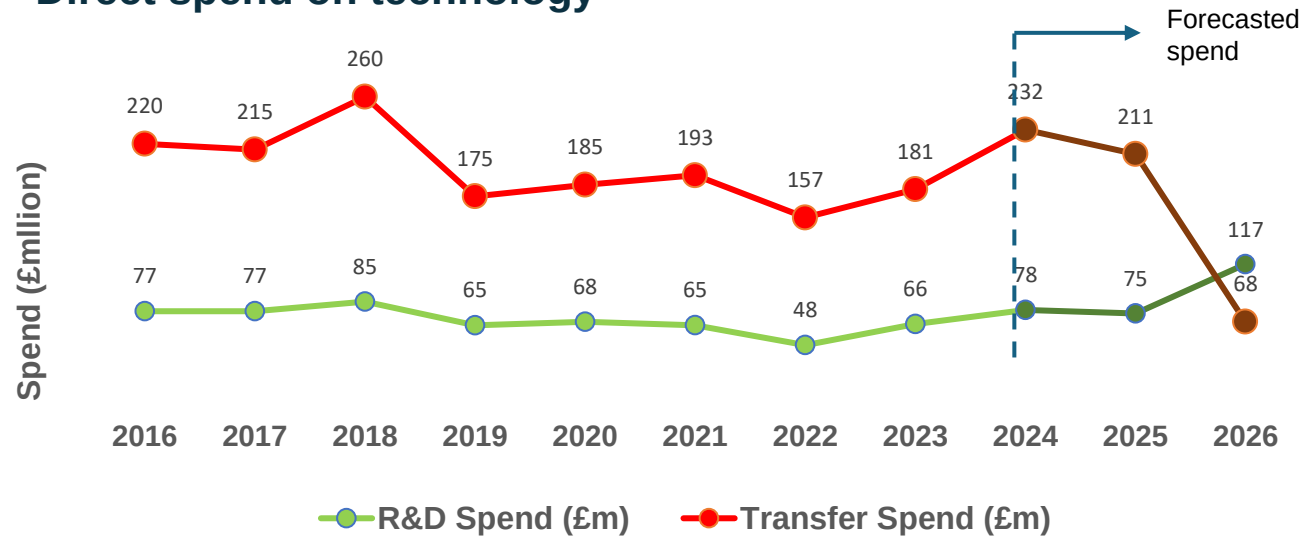
Nearly equal split between technologies for new asset developments and those for asset operations.

Installation & Topsides category remains steady due to focus on emission reduction.

Digital and Net zero categories, which cut across all these domains, are expanding rapidly.

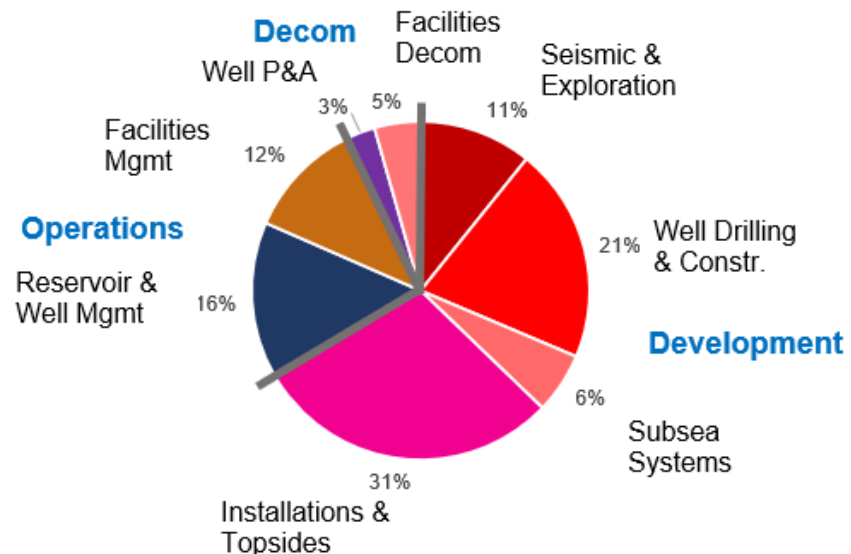
Operators' Technology Spend 2024

Direct spend on technology



Operators make a sizeable contribution to technology research and development (R&D) for UKCS needs.

In 2024, £78m of direct R&D spend is targeted, this is comparable to previous years, but less in real terms than a decade ago
Note: These are “money of the day” values (not factored for inflation).



Until 2025 the *Technology Transfer* spend (defined as the cost to deploy the technologies in the field) is higher than the direct R&D expenditure. In 2026 this trend reverses, indicating significantly lower overall spend.

Development categories attract the largest proportion of Operators' technology spend.

Technology Insights Report contents

Ctrl Click to follow links



North Sea Transition Authority

[Introduction](#)

[Technology Categories Sections](#)

[1. Seismic & Exploration](#)

[2. Well Drilling & Construction](#)

[3. Subsea Systems](#)

[4. Installations & Topsides](#)

[5. Reservoir & Well Management](#)

[6. Facilities Management](#)

[7. Well Plugging & Abandonment](#)

[8. Facilities Decommissioning](#)

[9. Digital & Data](#)

[10. Net Zero](#)

[Useful Links](#)

NSTA Categories & Sub-Categories

Eight Categories			
1.0 Seismic & Exploration 1.1 Geophysical Acquisition 1.2 Processing & Imaging 1.3 Subsurface Modelling	2.0 Well Drilling & Construction 2.1 Well Design & Planning 2.2 High Angle & ERD 2.3 Drilling Equipment 2.4 MWD,LWD & Geosteering 2.5 Drilling Casing & Cementing 2.6 Stimulation 2.7 Completions & Artificial Lift	3.0 Subsea Systems 3.1 Pipelines, Risers & Jumpers 3.2 Manifolds Umbilicals & Control Systems 3.3 Processing Boosting & Storage 3.4 Inspection & Intervention Systems	4.0 Installations & Topsides 4.1 Control Systems & Automation 4.2 Fluid Injection & Re-Injection 4.3 Fluid Separation, Treatment & Compression 4.4 FPSOs & FSOs 4.5 Manned Offshore Platforms 4.6 Metering & Monitoring 4.7 Power & Utilities 4.8 Unmanned Offshore Platforms
5.0 Reservoir & Well Management 5.1 Surveillance & Inspections 5.2 Improved & Enhanced Recovery 5.3 Intervention Equipment 5.4 Well Integrity Repairs 5.5 Waxing, Hydrates & Scaling Solutions 5.6 Liquid Loading & Water production 5.7 Sand & Solids Management	6.0 Facilities Management 6.1 Equipment Monitoring & Reliability 6.2 Integrity Monitoring & Inspection 6.3 Facility Integrity Repairs 6.4 Maintenance & Operations	7.0 Well Plugging & Abandonment 7.1 Well Inspection & Cement Condition 7.2 Conductor Removal 7.3 Barrier Placement & Verification 7.4 Tubing & Casing removal 7.5 Intervention Equipment	8.0 Decommissioning 8.1 Late Life Management & Equipment Readiness 8.2 Topsides/Jacket Decommissioning 8.3 Subsea Equipment Decommissioning 8.4 Site Inspection & Monitoring 8.5 Survey & Planning 8.6 Waste Management & Recycling
Two Cross - Cutting Categories			
9.0 Digital & Data 9.1 Connectivity 9.2 Data Acquisition 9.3 Data Systems 9.4 Modelling & Analytics 9.5 Productivity & Safety Enhancements 9.6 Visualisation & Interfacing		10.0 Net Zero 10.1 Flaring Venting Monitoring & Reduction 10.2 Low Carbon Power/Electrification 10.3 Energy Efficiency 10.4 CCUS	

Energy Production & Security

- Reservoir & Well Management
 - 5.2 Improved and Enhanced Recovery
 - 5.3 Intervention Equipment
 - 5.4 Well Integrity Repairs

Emission reduction

- Installations & Topsides
 - 4.3 Fluid separation, treatment and compression
 - 4.6 Metering and monitoring
 - 4.7 Power and utilities

Accelerating the energy transition

- Net Zero
 - 10.1 Flaring Venting Monitoring & Reduction
 - 10.2 Low Carbon Power/Electrification
 - 10.3 Energy Efficiency

5.2 Improved and Enhanced Recovery

- An increase in artificial lift technologies, with a focus on retrofit devices and alternatively conveyed methods and Advanced well modelling.
 - New technologies, or technologies reported for the first time this year are:
 - Inversion resistivity tools; intelligent well technology; and a slim pump safety valve.
 - Emerging technologies include:
 - Microgel water shut off; and jetted deep-penetrating perforation.

5.3 Intervention Equipment

- Operators are adopting technologies for improving well access for interventions and low-cost workover rigs to reduce the costs, puncher/cutter multifunction wireline tools; and real time coiled tubing.
 - New technologies, or technologies reported for the first time this year this year:
 - Ultra-high expansion plug for zonal isolation
 - Real time slickline removing the need for e-line wireline equipment
 - Lightweight coil hose circulation system.

5.4 Well Integrity Repairs

- Well integrity repairs continue to show strong innovation.
 - New technologies, or technologies reported for the first time this year this year:
 - Providing solutions for wellhead leakages; tracking well leak paths
 - Tubing retrievable/retrofit SSSVs; storm chokes for HPHT wells
 - Water shutoff annular isolation technologies and slim pump safety valves
 - Emerging technology includes
 - Heated flushing and re-greasing of tree valves and gas ingress isolation valves; DHSV control line remediation by nano coil

5.2 Improved & Enhanced Recovery

- An increase in artificial lift technologies including ESPs and gas lift, with a focus on retrofit devices and alternatively conveyed methods, advanced well modelling, ensemble-based reservoir modelling & downhole compression.
- New this year are inversion resistivity tools; intelligent well technology; and a slim pump safety valve.
- Emerging technologies include; microgel water shut off; and jetted deep-penetrating perforation.

- **Slim Pump Safety Valve (SPSV)** - Can be incorporated into cable deployed ESPs or jet pump systems providing an API qualified valve with minimal additional system complexity.
 - [TRL 9 Proven Technologies](#)
- **Alternate Conveyed ESPs/Slimline ESPs** – Remedial ESPs deployed by coil/cable; alternate motors (e.g. permanent magnetic)
 - [TRL 9 Proven Technologies](#)



Technology Example :

The thru-tubing ESP is deployed through a surface lubricator and lowered inside the existing production tubing. Easily retrieved using only the cable.

[Link: TI 22 - 6. Technology Example - Retrofit Wireline deployed slimline ESP.pdf](#)

5.3 Intervention Equipment

- Operators are adopting technologies for improving well access for interventions and low-cost workover rigs to reduce the costs; puncher/cutter multifunction wireline tools; and real time coiled tubing.
- New this year is the ultra-high expansion plug for zonal isolation; real time slickline removing the need for e-line wireline equipment; and a lightweight coil hose circulation system.

- **Ultra-High Expansion Plug** - Flexible zonal isolation solution which can be run in flowing wells and set as a platform for cement to be deposited once pressure and flow have abated.
 - [TRL 9 Proven Technologies](#)
- **Altus** - Use of real time slickline to save both time and cost by removing the need for e-line wireline equipment
 - [TRL 9 Proven Technologies](#)



Technology Example:

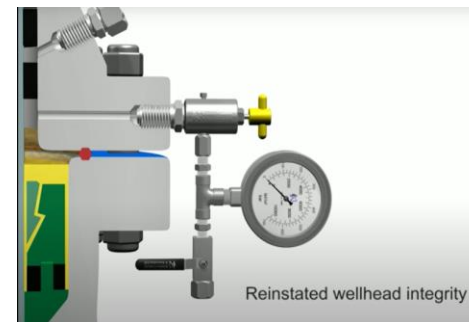
Digital slickline was selected for a pre-abandonment phase of nine wells (versus a sequential slickline and electric line operation). Provided real-time quality control and data driven decisions across the entire operation.
[Link: TI 24 – 09 Technology Example – Baker Hughes Realtime Slickline System \(Altus\).docx](#)



5.4 Well Integrity Repairs

- Well integrity repairs continue to show strong innovation in providing solutions for wellhead leakages; tracking well leak paths; tubing retrievable/retrofit SSSVs; storm chokes for HPHT wells; water shutoff annular isolation technologies; swellable seals; and slim pump safety valves.
- New this year are heated flushing and re-greasing of tree valves and gas ingress isolation valves.
- Emerging technology includes DHSV control line remediation by nano coil.

- **Novel wellhead sealing for production wells** for integrity issues - a time activated sealant to re-establish full well integrity.
 - [TRL 9 Proven Technologies](#)
- **HPHT Storm Choke** - Pressure dependent valve to replace failed SSSV operation
 - [TRL 9 Proven Technologies](#)



Technology Example: A time activated sealant is deployed in its liquid phase into the voids of wellhead sealing areas, the sealant converts to a resilient, self-bonding and pressure-energised solid material that acts to re-establish full well integrity of the wellhead.

[Link: TI 24 – 07 Technology Example – KCI wellhead sealing technology.docx](#)

Emission Reduction: Installations & Topsides

4.3 Fluid separation, treatment and compression

- Operators' technology plans show a greater uptake of flare gas and flash gas recovery technologies including membrane and compact separation systems.
 - New technologies, or technologies reported for the first time this year are:
 - Microbubble injection.
 - More efficient valve technologies.
 - Liquid ring compressors for flare gas recovery,
 - Technology to decelerate scaling/fouling of topsides process equipment.

4.6 Metering and monitoring

- Operators' technology plans for 2024 continue to show operator focus is on more sophisticated methods of emissions monitoring, including use of AI, and improved detection methods.
 - New technologies, or technologies reported for the first time this year are
 - 3 phase virtual metering.
 - Autonomous methane measurement using fixed FLIR cameras.

4.7 Power and utilities

- Growing adoption of low carbon power technologies including waste heat recovery, wave energy generation, and lean direct injection for gas turbines.
 - New technologies, or technologies reported for the first time this year are
 - Fuel cell power generation.
 - Solar power systems.
 - Hydrogen ion splitting.
 - Battery storage.
 - Capacitive transfer cable systems.
 - e-methanol low carbon fuel.

4.3 Fluid Separation, Treatment & Compression

- Operators' technology plans show a greater uptake of flare gas and flash gas recovery technologies including membrane and compact separation systems. More efficient valve technologies, liquid ring compressors for flare gas recovery, and technology to decelerate scaling/fouling of topsides process equipment are also reported.
- New for 2024 is microbubble injection.

- **Brownfield flare gas recovery** - to meet zero routine flaring commitments
 - [TRL9 Proven Technologies](#)
- **Flare gas recovery to achieve zero flare gas emission** - a safe flare recovery system to recover flare gas, minimise CO₂ emission and reduce import gas usage.
 - [TRL9 Proven Technologies](#)



Technology Example: A flare gas recovery unit (FGRU) is a system that captures flare gases and redirects them back into production workflows for reuse as fuel gas. This process helps to reduce routine flaring and emissions while saving operators on long-term production costs.

Link: [TI 24 – 11 Technology Example – Flare Gas Recovery Unit \(Zeeco\).docx](#)

4.6 Metering & Monitoring

- Operators' technology plans for 2024 continue to show Operators' focus is on more sophisticated methods of emissions monitoring including use of AI and improved detection methods.
- New this year are 3 phase virtual metering and autonomous methane measurement using fixed FLIR cameras.

- **Autonomous Methane Measurement** - Measurement of methane emissions from unburnt fuel gas, unburnt flare gas, venting and fugitives.
Use of ATEX rated autonomous measurement device to detect and quantify baseline methane emissions and abnormal events using TDLAS measurement technique.
 - [TRL 5-7 Late Development/Pilot](#)



Technology Example :

FLIR Camera The FLIR G300 a optical gas imaging (OGI) camera visualizes gas, so you can monitor installations in remote or hazardous areas for gas leaks. hydrocarbon or volatile organic compound (VOC) leaks cameras are widely used in industrial settings, such as offshore platforms.

[Link TI 23 – 05 Technology Example – FLIR Emissions Monitoring Camera - Copy.docx](#)

- Growing adoption of low carbon power technologies including waste heat recovery, wave energy generation, and lean direct injection for gas turbines.
- New this year are fuel cell power generation, solar power systems, hydrogen ion splitting, battery storage, capacitive transfer cable systems and e-methanol low carbon fuel.

- **Fuel Cell power generation** – installation of 600kW fuel cell technology to produce electricity from imported gas with minimal emissions and high efficiency.
 - [TRL 9 Proven Technologies](#)
- **EODev – Hydrogen** - power is generated from a process of splitting pressurised hydrogen into positive ions and electrons – flow of electrons is used as power.
 - [TRL 9 Proven Technologies](#)



Technology Example: The R&D carried out by the EODev and Toyota teams has enabled the REXH2 to be adapted to the extreme conditions of the marine environment, reaching power levels of 70 kW per unit and up to MW when stacked.

[Link: TI 24 – 12 Technology Example – EO Dev Hydrogen Fuel Cell for Offshore Applications.docx](#)



10.1 Flaring Venting Monitoring & Reduction

- Flaring & venting monitoring and reduction technologies are showing an increased focus as Operators align with achieving net zero.
 - New technologies, or technologies reported for the first time this year are:
 - Intelligent wireline formation testing programme.
 - Improved data search and classification of well information.
 - Online flare combustion efficiency measurement.
 - Liquid ring compressors for flare gas recovery.

10.2 Low Carbon Power / Electrification

- Net zero technologies for low carbon power / electrification are focussed on substituting / reducing the dependency on fuelling gas turbine on-platform power.
 - New technologies, or technologies reported for the first time this year are:
 - Energy pod, photovoltaics and fuel cell power generation.
 - Platform electrification from grid or from local floating offshore wind.
 - Hybrid power systems, topsides and subsea power packs for short-term energy storage.
 - Alternative low carbon fuels for turbines / engines.
 - Wave energy for subsea power systems and further renewable power sources from floating wind and power from shore.

10.3 Energy Efficiency

- Energy Efficiency technologies are maintaining focus amongst Operators as a cost-effective way of reducing emissions which also reduces fuel consumption and boosts exported production over the remaining asset life.
 - New technologies, or technologies reported for the first time this year are:
 - Turbine power management system obsolescence upgrades.
 - Optimised power management and integrated operations centre.
 - Remote operations centres for survey by Autonomous Support Vessels (ASVs).
 - Emerging technologies are
 - Capacitive transfer system cable design requiring smaller cable diameters with reduced losses.

- Flaring & venting monitoring and reduction technologies are showing an increased focus as Operators align with achieving zero routine flaring, open reporting aligned with the principles of OGMP 2.0, and anticipating methane's inclusion in UK ETS proving strong combined drivers.
- Liquid ring compressors for flare gas recovery is noted.
- New this year are intelligent wireline formation testing programme, improved data search and classification of well information, and online flare combustion efficiency measurement.

- **Intelligent wireline formation testing platform** – To enable real time data interpretation in a collaborative environment. Built-in deep transient testing capabilities eliminate flaring and reduce carbon emissions. Deployment on wireline with standard crew.
 - [TRL 9 Proven Technologies](#)
- **Flare combustion efficiency measurement** – An online, live measurement of combustion efficiency providing control feedback to improve the combustion efficiency of flaring operations and thereby reduce overall emission rates of CO₂ and methane
 - [TRL 8 Early commercialisation](#)

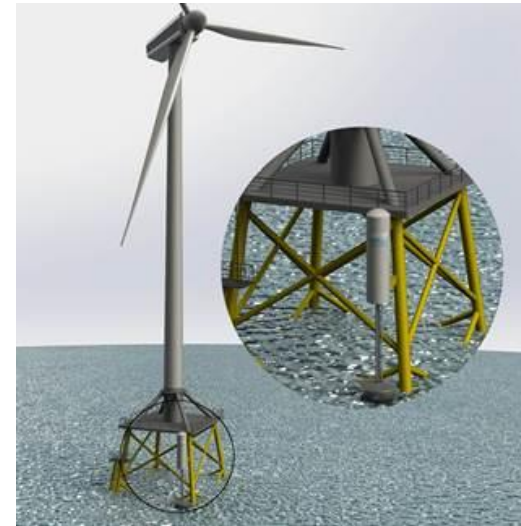


Technology Example: The Ora™ intelligent wireline formation testing platform delivers dynamic reservoir characterisation by combining new digital hardware with cloud-native collaborative.

[Link: TI 24 – 10 Technology Example – SLB Intelligent Wireline Formation Testing Platform \(ORA\).docx](#)

- Net zero technologies targeting low carbon power / electrification are focussed on substituting / reducing the dependency on fuelling gas turbine on-platform power. This includes platform electrification from grid or from local floating offshore wind, hybrid power systems, topsides and subsea power packs for short-term energy storage, and alternative low carbon fuels for turbines / engines, wave energy for subsea power systems and further renewable power sources from floating wind and power from shore.
- New this year are an energy pod, photovoltaics and fuel cell power generation.

- **Energy pod** - Transportable, autonomous energy container combining wind turbine, solar panels and battery storage for use on platforms in lighthouse mode.
 - [TRL 9 Proven Technologies](#)
- **Wave Energy Converter (WEC)** - Comprising ocean WEC, subsea battery storage, subsea control system topside, subsea equipment, residential Hybrid AUV (HAUV) and a docking station.
 - [TRL 8 Early Commercialisation](#)



Technology Example: PowerPod is combined with a float and support structure to provide clean, autonomous power to offshore oil and gas structures. Such structures include Normally Unmanned Installations (NUIs) and Minimal Facility Platforms (MFPs)

[Link: TI 24 - 05 Technology Example - Trident Energy - Power Pod.docx](#)

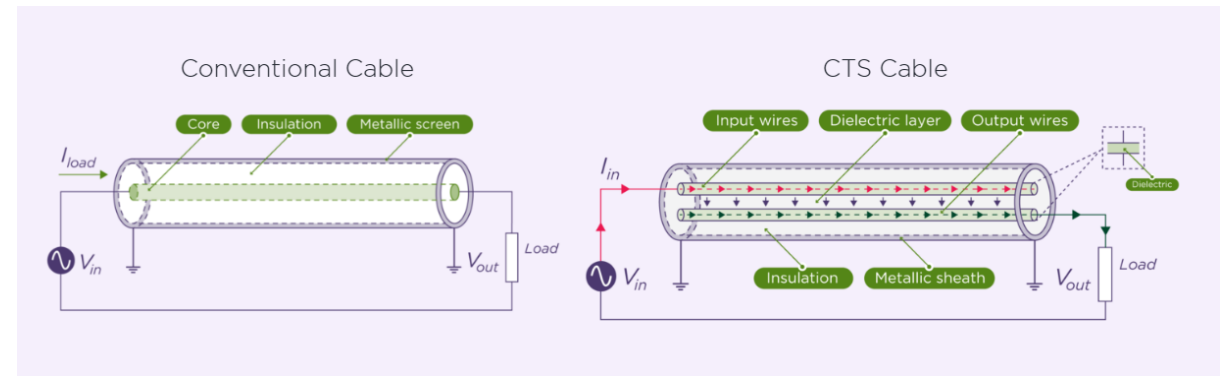
10.3 Energy Efficiency

- Energy Efficiency technologies are maintaining focus amongst Operators as a cost-effective way of reducing emissions which also reduces fuel consumption and boosts exported production over the remaining asset life.
- New this year are turbine power management system obsolescence upgrades, an optimised power management and integrated operations centre, and remote operations centres for offshore surveys by ASV.
- Emerging technologies are capacitive transfer system cable design requiring smaller cable diameters with reduced losses, and a remote operations project.

- **Enertechnos Capacitive Transfer System (CTS)** - new capacitive cable system design enables use of smaller cables for the same power capacity.
 - [TRL 5-7 Late Development/Pilot](#)
- **Advanced remote operation centres** - remote operations enable safer, more efficient and lower carbon operations.
 - [TRL 8 Early Commercialisation](#)

Technology Example: Capacitive Transfer System (CTS) is an innovative concept for power cable design leading to lower losses and facilitating more power delivery than equivalent legacy cable systems.

[Link: TI 24 – 06 Technology Example – Enertechnos CTS cable system.docx](#)



Technology Insights: Two new features for 2024

Comprehensive Technology Listing – Searchable

- Distilled from the Survey and Technology Plans submitted

Consolidated – Technology Needs Listing

- Amalgamated listing of every technology included in the survey

Comprehensive Technology Listing - Searchable

Field	Digital	Digital Sub Category	Net Zero	Net Zero Sub-Category	Unique Code	Technology Name	Description	Technology Category	Technology Sub-Category	Deployment Status
NNS					1	Oil Finger printing PLT	Use of geochemical fluid typing from producers compared against type samples 1 Reservoir and Well Management		SURVEILLANCE_AND_INSPECTION	CC
NNS	y	Modelling & Analytics			1	Overlooked pay	Big data/AI evaluation of petrophysical dataset from across the Northern North Sea Reservoir and Well Management		IMPROVED_AND_ENHANCED_RECOVERY	IN
NNS	y	Connectivity			1	Remote Operations	Remote operations through wellsite WIFI to allow real time video streaming to mini Well Drilling and Completions		DRILLING_CASING_AND_CEMENTING	CC
NNS					1	Whole oil gas chromatography	Use of geochemical fluid typing from producers compared against type samples 1 Reservoir and Well Management		IMPROVED_AND_ENHANCED_RECOVERY	UN
NNS	y	Visualisation & Interfacing			1	3D Model Digital Twins	Develop a fully integrated 3D model based Asset Management system/platform th Installations and Topsides		MANNED_OFFSHORE_PLATFORMS	CC
NNS					1	Single lift jacket lift system	single lift jacket lift system	Facilities Decommissioning	PREPARATION_AND_REMOVAL_TOPSIDE_JACKET	CC
NNS					1	ATEX rated cutter/grinder	Ability to cut without habitat	Facilities Management	FACILITY_INTEGRITY_REPAIRS	CC
NNS	y	Visualisation & Interfacing			1	Data Visualisation	Improved data manipulation and analysis allowing better decision making (PowerE Facilities Management		MAINTENANCE_AND_OPERATIONS	IN
NNS					1	Deep water UK quayside	Ensure relevant stakeholders are informed of the benefits of deep water quaysid Facilities Decommissioning		SURVEY_AND_PLANNING	UN
NNS					1	Explosive collapse of structures	Using explosive technology to reduce the height of structures delivered onshore Facilities Decommissioning		WASTE_MANAGEMENT_AND_RECYCLING	CC
NNS	y	Modelling & Analytics			1	Fracking	Modelling of frack opportunities using in-house software and expertise	Well Drilling and Completions	STIMULATION	CC
NNS	y	Data Acquisition			1	Fully integrated 3D model based Asset Management	Develop a fully integrated 3D model based Asset Management system/platform th Facilities Management		MAINTENANCE_AND_OPERATIONS	CC
NNS	y	Data Acquisition			1	Improved behind pipe saturation logging.	Ability to detect unswept or recharged zones in existing producers and increase Well Drilling and Completions		MWD_LWD_GEOSTEERING	UN
NNS					1	Laser Surface Preparation	current methods of pipe preparation is too slow	Facilities Management	FACILITY_INTEGRITY_REPAIRS	PA
NNS					1	Mobile Camera Streams	Improve efficiency and safety	Facilities Management	INTEGRITY_MONITORING_INSPECTIONS	CC
NNS	y	Modelling & Analytics			1	Multistage propped fractures	Modelling of frack opportunities using in-house software and expertise.	Seismic and Exploration	SUBSURFACE_MODELING	CC
NNS	y	Connectivity			1	Onshore/Offshore Control Room linkage	Set up onshore Operations Rooms where key onshore asset support staff can p Facilities Management		MAINTENANCE_AND_OPERATIONS	CC
NNS	y	Modelling & Analytics			1	Project Management Governance Tool - PRISM	Risk Management and Action Tracking	Facilities Decommissioning	PREPARATION_AND_REMOVAL_TOPSIDE_JACKET	CC
NNS	y	Data Acquisition			1	Remotely operated iron roughneck	Remotely operated iron roughneck with data capture	Facilities Management	EQUIPMENT_MONITORING_RELIABILITY	PA
							Single lift for platform topsides; ?Innovative horseshoe lifting arrangement on jacket legs to minimise topsides preparation for removal work to ~ 10,000 manhours			
NNS					1	Single Lift	Under development by for use with Pioneering Spirit; when developed different sized horseshoe inserts will enable lifting of different diameter jacket legs	Facilities Decommissioning	PREPARATION_AND_REMOVAL_TOPSIDE_JACKET	CC
NNS					1	Structural in place code for progressively decommissioning	Operator is leading OGUK workgroup to develop new code or guidance - current Facilities Decommissioning		LATE_LIFE_MANAGEMENT_AND_EQUIPMENT_READINESS	IN
NNS					1	Subsea Welding for Jacket Integrity	Development of technologies to provide a). more efficient and cost effective cold Installations and Topsides		MANNED_OFFSHORE_PLATFORMS	CC
NNS					1	Topside Pigging ILI	Develop requirements for access, launching and recovering PIGS on topside pipe Facilities Management		INTEGRITY_MONITORING_INSPECTIONS	CC
NNS					1	Walk to work	SMST modular gangway technology delivered ~ 90% uptime of fully connected g Facilities Decommissioning		LATE_LIFE_MANAGEMENT_AND_EQUIPMENT_READINESS	CC

Consolidated – Technology Needs Listing



North Sea Transition Authority

No. of Assets	*UKCS Area	Tech Need Name	Tech Needs Description	*NSTA Category	*NSTA Sub Category	Sub-Category -Notes where "Other" selected	*Technology Aims	Notes where "Other" selected	Specific Technology Name
7	NNS,CNS	Bird Deterrent Systems	For unmanned installations	Facilities Decommissioning	Site Inspection & Monitoring		Enhanced Probability of Success		Unknown
3	CNS	Methane emissions field surveys	Use of UAVs or handheld devices to quantify methane emissions from a platform.	Clean Energy	Site Inspection & Monitoring		Emmissions Reduction		Unknown
1	CNS	Platform Removal	Innovative solutions to support the removal of the jack-up type platform structure	Facilities Decommissioning	Topsides/Jacket Decommissioning		Enhanced Probability of Success		Unknown
1	NNS	GBS Decommissioning	Sampling and clean up of Gravity Based Concrete substructure storage cells	Facilities Decommissioning	Subsea Equipment Decommissioning		Enhanced Probability of Success		Unknown
7	NNS,CNS	De-energisation and Cleaning Solutions	De-energisation and cleaning of topside equipment to leave in a safe condition prior to platform disembarkation	Facilities Decommissioning	Topsides/Jacket Decommissioning		Safety Enhancements		Unknown
7	NNS,CNS	Removal of Subsea Wellheads	Safe and efficient subsea wellhead decommissioning	Facilities Decommissioning	Subsea Equipment Decommissioning		Enhanced Probability of Success		Unknown
8	NNS,CNS	AUV subsea monitoring	Subsea survey and environmental monitoring of pipelines and subsea infrastructure left on the seabed using autonomous vehicles	Facilities Decommissioning	Site Inspection & Monitoring		Abex Efficiency		Unknown
7	NNS,CNS	UI Monitoring	Monitoring of integrity of Unattended Installations prior to removal using UAVs, robotic tools etc	Facilities Decommissioning	Site Inspection & Monitoring		Abex Efficiency		Unknown

Useful Links

NSTA Website

[North Sea Transition Authority \(nstaauthority.co.uk\)](https://nstaauthority.co.uk)

Previous 2023 Technology Insights Survey

[NSTA Technology Survey & Insights \(nstaauthority.co.uk\)](https://nstaauthority.co.uk)

UK Energy Technology Platform website

[TechnologyCatalogue.com \(energytechnologyplatform.com\)](https://energytechnologyplatform.com)

Technology Leadership Board (TLB)

[Home - The Technology Leadership Board \(the-tlb.com\)](https://the-tlb.com)



North Sea
Transition
Authority

Thank you

Alan.Ransom@nstaauthority.co.uk

Ernie.Lamza@nstaauthority.co.uk