



OFFSHORE ENERGIES

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The magazine for the UK offshore energy industry

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Aberdeen's NZTC creates new approaches

Welcome to *Offshore Energies UK* #54

Challenging though it now is to finance projects to produce oil and gas, our sector is doing good work to raise the nation's security of energy supply while continuing to lower its emissions. As this issue of *Offshore Energies UK* Magazine testifies, our members have been active across the board. But the war in Ukraine and unsustainably high energy prices have erected major obstacles in Europe's progress to net-zero emissions. Today's wholesale gas and power prices are simply not sustainable.

Downstream, high energy costs will compel major energy consumers to look at their business operations. Many have already cut manufacturing output while others may move abroad where feedstock is cheaper. Others may shut down, perhaps permanently.

Europe is part of a global gas market where not all buyers are equal: some are state-owned with captive or subsidised consumers; others are fighting for survival in the buy-sell margins. Many midstream companies have come to grief, notably the German giant, Uniper. The expected deliveries of Russian gas have not materialised.

Operations to provide the nation with clean oil and gas remain the bedrock for many of our members. We therefore welcome this year's licensing rounds for oil and gas production and the first of its kind for carbon capture and offshore storage.

However, unless it is modified, the Energy Profits Levy could jeopardise the outcome of both these rounds. It could become a serious investment deterrent, risking energy security and the country's net-zero ambitions, and the jobs that go with them. Maximising the economic recovery of UKCS hydrocarbons is also a goal of the upstream regulator. So it is vitally important that the government and Treasury work closely with the sector and restore the tripartite relationship which has worked well. It is surely better for government to have a healthy flow of tax income over decades than a short-term peak followed by an equally rapid decline as investors seek better returns elsewhere.

OEUK is working alongside its members to produce technical documents, the most recent additions to our collection -- free to members -- covering emissions, safety and wells. We know that the sector's licence to operate is conditional and that it must uphold its side of the North Sea Transition Deal.

Our members are tackling the many challenges in different ways: cutting emissions, boosting safety, promoting new technology and providing vital training and support services at home and abroad. Advanced technology is often key to raising efficiency and cutting costs by reducing downtime and anticipating problems before they occur. Research and project planning also contribute to the safe transport of dense-phase CO₂. And enabling workers to switch sector, as the energy transition makes necessary, will also oil the wheels of the machinery.

We also held three very well-attended conferences this autumn on exploration (London), energy law (Aberdeen) and decommissioning (St Andrews). These provided great networking opportunities as well as major updates in each area. OEUK has also published reports on decommissioning, exploration, the workforce and health & safety. Last, if you would like to see your business featured in the next issue, we welcome any positive news at editorial@oeuk.org.uk. For now, we wish you a happy festive season.

Editorial team

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Cover image
Boats in harbour
(see page 15)

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OEUK Awards: shortlists and winners

The shortlist for this year's prestigious OEUK Awards, sponsored by Shell UK, comprised 24 entrants. They emerged from a 70-strong list of nominees competing in eight categories, of which four are new. Winners (pictured left) were announced December 8 at P&J Live in Aberdeen.

And in late November, OEUK declared EnQuest the winner of its prestigious 'Excellence in Decommissioning' award. It beat the short-listed TAQA and Well-Safe Solutions.

OEUK's Mike Tholen, then the acting CEO, said the finalists reflected the "great talent and expertise of our energy communities" and that "both events are a great opportunity to celebrate the key role our companies and individuals are playing, and continue to play, across the offshore energy sector."

OEUK names safety award winners

The annual awards ceremony, jointly organised by OEUK and Step Change in Safety and sponsored by Harbour Energy, also marked the 25th anniversary of Step Change in Safety, the member-led organisation which aims to make working conditions in the UK offshore energy industry the safest in the world.

OEUK's Health, Safety & Environment Director Mark Wilson said: "Oil and gas will remain a vital resource to the UK for decades to come, so it's important that working conditions and operations remain safe."

Step Change in Safety executive director Steve Rae said that the awards helped to spread the word, not only globally but also in other industries.



Bids flood in for CCS offshore round

The North Sea Transition Authority expects to award licences for carbon storage offshore early next year, in the wake of its pioneering mid-June licence round. The first injection of CO₂ could come as early as four years after a licence is awarded, it said.

A total of 19 companies bid for the 13 areas which are offshore Aberdeen, Teesside, Liverpool and Lincolnshire. The selection of sites reflected a combination of geology, the environment, their proximity to existing infrastructure, commercial interest and links to industrial clusters. The NSTA also considered offshore wind projects and potential overlaps with petroleum licences.

In CCS, CO₂ is captured from industrial processes and then transported, via ship or pipeline, for storage in rocks deep beneath the seabed (see feature on page x).

The NSTA's head of exploration and new ventures Nick Richardson said the quantity and quality of applications was good and from a diverse range of applicants. "The clear appetite among companies to get involved shows that the UK is well-positioned to become a world-leader in the sector," he said.

Message from our CEO



Deirdre Michie
CEO,
Offshore Energies UK

We launched one of our landmark documents, the annual Economic Report, into unexpectedly choppy waters. It came out just after the installation of a new prime minister and cabinet and, since then, there has been yet another government. There has also been yet another windfall tax with both a higher take and a longer duration than the one introduced in April. Such are the perils of publishing reports on UK energy.

As expected, this fiscal instability has caused producers to question their future investments. The new level has the real potential to damage the UK's long-term security of energy supply. Our sector is strategically vital and, owing to the sums of money involved, it has to plan and invest in cycles that are much longer than the other 'here today, gone tomorrow' industrial matters that preoccupy media and politics. Unless there is a marked change in Treasury and wider government thinking, there could be long-lasting, even irreversible repercussions.

The offshore energy sector continues to feel the impact of inflation, both in industrial relations and through supply chain costs and availability of resources. As ever, the risk-reward balance is precarious. Navigating the coming few years will require the government of the day to exercise diplomacy, determination and long-term thinking.

For our members, these are familiar if unwelcome waters. OEUK is pleased that despite the challenges ahead, our members continue to play their part in both protecting energy security and unlocking the transition to net-zero.

A growing share of the UK energy supply-demand gap will be filled by wind power: it presents our members with significant opportunities to build on their skills and technology. At the other end of the lifecycle, as our Decommissioning Insight 2022 finds, long-term employment opportunities offshore will grow as the work of dismantling offshore platforms gathers pace. Both these areas are covered in more detail in our new 2022 Workforce Insight.

I am confident that the sector can turn the tide against some of the challenges – as it has done many times before. The resilience of this sector and its people is what makes it very special.

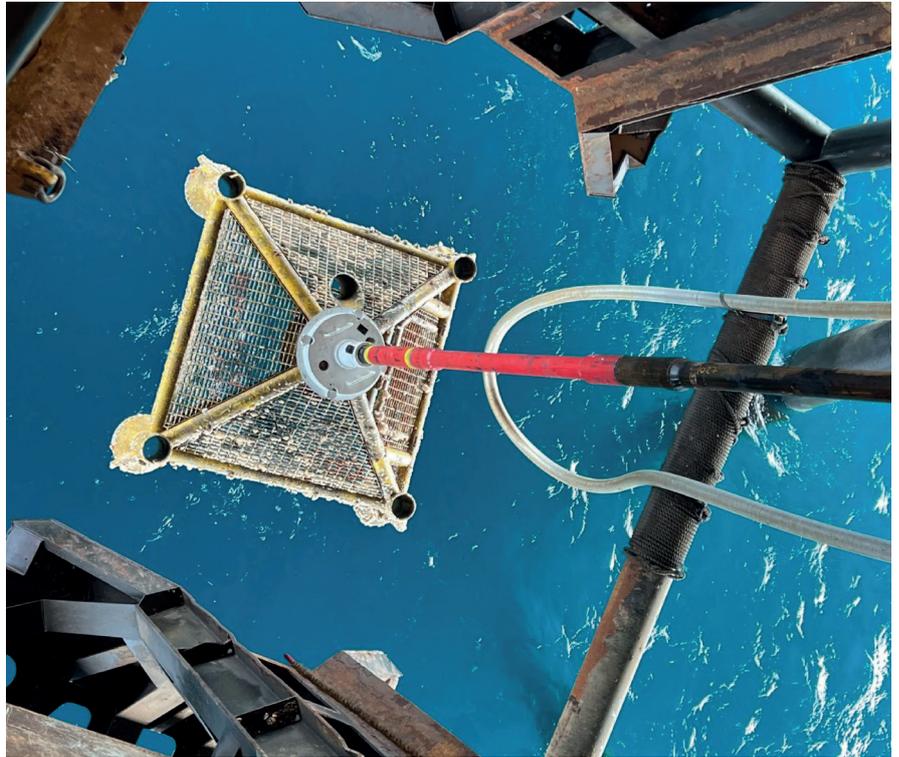
As my time as CEO of Offshore Energies UK comes to an end, I am very proud to have represented such an innovative and forward-thinking industry, and I wish it – and my successor – every success in the future.

Deirdre Michie

Decom costs fall

The North Sea Transition Authority (NSTA) has cut its forecast for the cost of offshore decommissioning by £1.5bn (2%) to £44.5bn – contributing to a total cut of £15bn (25%) since 2017. That is still a bigger cost than its target total of £39bn by the end of the year but NSTA said that the “highly ambitious 35% target was always intended to be challenging.” Savings mean that companies have more to invest in production and emissions reduction projects. Taxpayers also win when the cost of decommissioning falls. Industry made swift progress in the first two years of the target, cutting the estimate by 17%, and while that has slowed, progress has continued. The final costs of completed projects are on average 20-25% lower than initially predicted, over the five years.

The upstream regulator’s head of decommissioning Pauline Innes said that



“potential savings of £15bn during a short period marked by extremely turbulent economic conditions should give the sector confidence as it looks to the future.” That future includes opportunities overseas, she said.

Agencies swap experiences

The National Decommissioning Centre (NDC) and the Nuclear Decommissioning

Authority (NDA) have signed a three-year collaborative research agreement. It is the first of its kind between the two sectors and the aim is to identify mutual benefits. The strategic partnership, supporting research with a potential value of up to £900,000, will see researchers from the University of Aberdeen work with the NDA on areas such as decarbonisation, economic impacts, cost benchmarking and remote operations in hazardous environments.

The NDA, the NDC, the Net Zero Technology Centre and the North Sea Transition Authority have been seeking mutually beneficial opportunities from each sector’s experiences for the past few years.

Welcoming the agreement, Professor Richard Neilson, director of the NDC at the University of Aberdeen, said in the September 22 announcement that each could learn from the other’s experiences in remote operations, decarbonisation, cost benchmarking and potentially underwater laser cutting.

The head of Industry and Partner Networks at the Net Zero Technology Centre, Roger Esson, said that this kind of cross-sector learning would accelerate the energy transition.

GHG ‘on target’

Greenhouse gas emissions from offshore platforms fell by an estimated 14.6% to 14.3mn metric tons of CO₂e last year, according to the upstream regulator NSTA.



This adds up to an overall reduction of 21.5% since 2018 and is therefore on target, it said, announcing its new report and database September 21.

There were several contributing factors, including robust regulation; a reduction in offshore activity amid the Covid-19 pandemic; and the permanent shutdown of several platforms with high emissions. However, the large number of platform maintenance shutdowns, coinciding with pipeline outages, contributed to a substantial fall in production and associated emissions last year.

NSTA said the sector is on track to meet interim emissions reduction targets – 10% by 2025 and 25% by 2027 – which were agreed in the North Sea Transition Deal. However, bold measures will be needed to hit the 2030 goal of halving emissions. Offshore electrification of platforms is an essential ingredient, it said

delegates interested in how the land lay a few weeks before the 33rd licensing round (see *below*). Audience sentiment favoured responsible exploration to maintain production. Since the Russian invasion of Ukraine, the geopolitical landscape has undergone a fundamental shift from one of economic co-operation to one of rivalry. This implies a drive towards greater self-reliance and less import dependency.

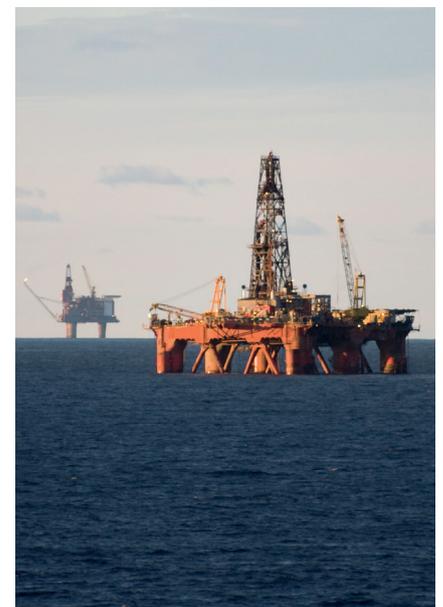
Closing the conference there was therefore strong support for UK exploration and its potential to assist the energy transition. We are very grateful to the following organisations for sponsoring the event: CNOOC International, Schlumberger, Capricorn and PESGB.

NSTA launches 33rd round

UK energy security will be significantly boosted with the launch of the 33rd oil and gas licensing round, the North Sea Transition Authority (NSTA) said October 7. It offered 898 blocks and part-blocks and hopes to award over 100 licences.

To encourage early production, the NSTA has identified four priority cluster areas in the gas-rich southern North Sea with known

hydrocarbons, close to infrastructure and the potential to be developed quickly. Applicants will be encouraged to bid for these areas, the NSTA said. The round is the latest element in the NSTA's ongoing work with industry to ensure security of supply. Earlier this year leading operators were asked to supply details of their production and investment



Balancing E&P risks and rewards

OEUK's one-off exploration conference in London on September 1 drew some 70



plans and to look at how they might go further and faster wherever possible. The licensing of Rough to reopen as a storage facility in an accelerated process is another example of improved security of supply.

The opening of the licensing round follows the publication of the Climate Compatibility Checkpoint and the Strategic Environmental Assessment. It is expected that the first licences will be awarded from the second quarter of 2023.

The outgoing CEO of NSTA Andy Samuel said: “Security of supply and net zero should not be in conflict. The industry has committed to halving upstream emissions by 2030 and investing heavily in electrification, carbon storage and hydrogen.”

Legal conference breaks ground

The September legal conference – the seventh, not counting two webinars from the Covid lockdown period – drew some 140 delegates to Ardoe House, Aberdeen. It was the first under the OEUK brand and it welcomed two King’s Counsels. The return

to an in-person event was very welcome, after the steady stream of online events since 2019.

Financing energy transition and carbon capture and storage projects featured, along with more familiar topics: decommissioning, the new engineering contract and international arbitration, with some role-playing.

Professor Greg Gordon, speaking at the dinner, remarked on the concerns of younger lawyers about the longevity of traditional oil and gas practice in what is sometimes portrayed as a twilight industry.

OEUK would like to thank again the organising committee and all our speakers, and particularly our sponsors: Gilson Gray, CMS, Clyde & Co and Norton Rose Fulbright.

Grid warns of cuts

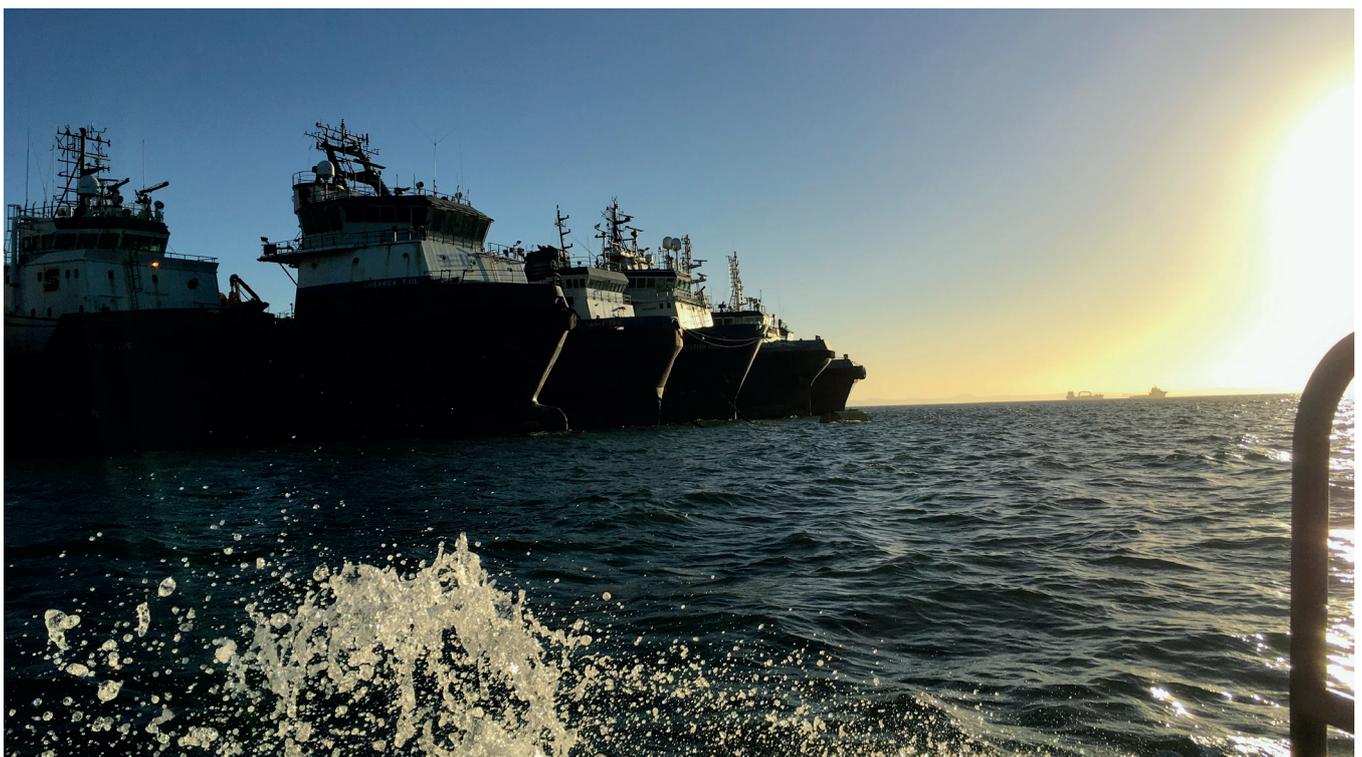
Preparing for a difficult six months ahead in its annual *Winter Outlook*, National Grid has saved about 2 GW of coal-fired generation capacity from closure to meet winter power demand. It has also introduced demand flexibility service to allow customers to bid in demand cuts when margins are tight. That

could save another 2 GW. But it warns that it is highly likely that the wholesale price of gas and electricity will remain very high.

It has planned for extreme cases when energy crises in Europe might mean no available power imports for the UK. This could result from nuclear outages in France, or gas supply failures either side of The Channel. But if the security situation in Europe worsens, both gas and power customers are at risk of losing supply.

National Grid sees gas demand destruction continuing to rise across all sectors in response to high prices, but mostly from industry where demand is elastic. LNG has been the primary source of supply flexibility this year supplementing UK and Norwegian supplies in the almost complete absence of the Dutch swing field, Groningen and very little underground storage.

UK and continental gas prices have disconnected this year, owing to bottlenecks in the interconnectors. The NBP day-ahead price even fell to 23 p/th October 18, as there was not enough capacity to take it out of the grid as fast as the gas was arriving. And it was 10 p/th on June 9. There was plenty of wind, the weather was mild and there is very little storage capacity in the UK.



Dirk Rhyn

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EMISSIONS REPORT 2022

Delivering on our commitment: scenarios for decarbonising oil and gas production

OEUK OFFSHORE ENERGIES UK

Since the launch of the emissions reduction targets, significant progress has been made by industry. However the future pathway for the sector is uncertain. Therefore, in this report, OEUK has adopted a scenario-based approach to identifying different routes to meet the reduction targets compared with a "business as usual" (BAU) approach (Figure 1).

This section of the report also sets out the likely outcomes for the 2022-25 period, which is common to all scenarios. It then provides a detailed review of the different pathways to meet the 50% reduction target.

UKCS maintains its emission intensity despite less mature basins

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2022 emissions progress and outlook at a glance

2021 Overall emissions performance

20% 20% down on base year

Emissions from the production of oil and gas were down 20% in 2021.

Five highly intensive installations taken offline

Industry is removing mature installation with high emission.

Emission intensity

UKCS maintains its emission intensity despite less mature basins

2021 methane emissions performance

36% 36% down from base year

Methane Action Plan has quickened the pace of emissions reduction.

Methane intensity

Basin intensity on track to meet OGI target.

Flaring and venting

Emissions forecasts

Industry on track to exceed 2025 emissions target

Effort across all operations enable the industry to outperform the trajectory for 2025.

Short term opportunities

lie in improved maintenance and reduced deferrals

Operations can be optimised for both production and

Policy priorities

- Timely grid connections
- INTOG business models
- Electricity market reforms

Essential next steps

Short cycle, operational improvements have mostly been delivered or will be delivered by 2027. Focus and

Reaching net zero: OEUK scenarios

Business as usual* emissions forecast

Source: OEUK, NSTA

Short-term outlook (2022 – 2025)

OEUK analysis and modelling suggest that from 2022 emissions are likely to increase slightly. However emissions will remain below the 2020 figure and are unlikely to return to pre-pandemic levels, sustaining around 15% reductions from the 2019 base year and therefore meeting the 2022 target. This increase largely results from higher oil and gas production in the first seven months of 2022, with gas supplies boosted by around 20% relative to the same period last year. This represents a rebound from the Covid-19 related declines of the last two years which have led to more pipeline and LNG imports, raising global emissions. While emissions are forecast to go up next year, the basin is likely to see a period of relatively stable performance out to 2025, since:

- There will be an underlying increase in emission intensity as assets mature.
- Around 8-12 installations are likely to reach cessation of operation, OEUK estimates, which will help to control emissions intensity.
- New fields coming online with a lower emissions intensity will dampen any rise.

Additionally, while also focusing on uptime and improving efficiency, operators are streamlining transportation and shuttles. While the key drivers for completing planned maintenance are safety and production efficiency, other benefits accrue such as avoiding process interruptions and the reality that well-maintained equipment will function at optimal energy efficiency. It is therefore reasonable to expect industry efforts to address maintenance backlogs will reduce emissions from unplanned safety related flaring and venting, plant start-ups and routine power generation.

Outlook to 2030

For the first time, OEUK analysis and modelling provide a scenario-based approach to the emissions reduction targets in the Decal. Consideration has been given to a range of factors such as oil and gas production investment, energy security, decarbonisation enablers and the role of government and policy (See Table 1).

Each scenario below meets the 50% reduction target but each pathway presents unique opportunities and barriers to energy security, the "just transition" and more important our ability and commitment to transition to a net zero basin by 2050.

Daylight: Investment status remains unfulfilled and all sanctioned and most unauthorised projects proceed. It is assumed that a reasonable level of decarbonisation enablers and abatement options are triggered.

Summit: Sanctioned developments come online, but it is assumed that those investments and production online today will be the final activities on UKCS. Abatement projects that have been triggered do progress but no new abatement takes place.

Clear blue sky: A full-scale investment scenario sees all operational production coming online; equally, full abatement options are triggered and all large-scale investments proceed as planned.

WORKFORCE INSIGHT 2022

The people powering the energy transition offshore

OEUK OFFSHORE ENERGIES UK

Total oil and gas employment

OEUK estimates that the offshore oil and gas industry supported 200,800 UK jobs last year, which is 22,300 more than in 2020. Direct, indirect and induced job numbers all rose, by 2,400, 2,200, and 17,500 respectively. However the total supported employment was almost a quarter lower than before the pandemic owing to cutbacks in industry spending.

The skills, knowledge, and expertise of people whose roles are supported by the oil and gas sector are crucial to the development of the UK's future, lower-carbon energy system. However, the transformation of the system will take place over decades. It is therefore more efficient to retain these skills through ongoing and new investment in the UK's oil and gas resources while projects in the new energy sector develop momentum.

This wide-ranging industry footprint means that oil and gas actively supports jobs across all regions of the UK, with some key hubs attracting the most investment. Scotland (in particular the northeast), London, the east of England, the northwest of England and the East Midlands contribute three quarters of the total employment that is supported by the offshore oil and gas industry, reflecting the clustering of

industrial and supply chain capabilities in these regions. The Decal committed industry and government to ensure that at least half of the work on energy transition projects is delivered by UK companies. If this target is met, domestic job opportunities will be substantial.

Table 1: Analysis of jobs by region

Region	2019	2020	2021	2019-2021 % chg	2020-2021 % chg
East Midlands	1,000	1,000	1,000	0%	0%
East of England	1,000	1,000	1,000	0%	0%
London	1,000	1,000	1,000	0%	0%
North East	1,000	1,000	1,000	0%	0%
North West	1,000	1,000	1,000	0%	0%
South East	1,000	1,000	1,000	0%	0%
South West	1,000	1,000	1,000	0%	0%
West Midlands	1,000	1,000	1,000	0%	0%
Yorkshire and the Humber	1,000	1,000	1,000	0%	0%
Total	200,800	178,500	198,500	-11%	+11%

Figure 1: Distribution of oil and gas sector jobs by region

Figure 2: Manufacturing of oil and gas equipment

Last year's rise was largely due to the easing of restrictions introduced during the pandemic, which allowed more people to travel offshore. Indus as many parts of the up for business again see further increase employment. This anticipated rise in it more and more people.

The employment for comes a wide array of oil and gas production industries, ranging fr and chemical plants, professional services and accommodation and food service providers. The spread of this indirect employment is defined by how

Table 2: The demographics of offshore travellers

	2019	2020	2021	2019-2021 % chg	2020-2021 % chg
Offshore travellers (total)	49,268	38,846	36,946	-26%	-5%
Non-core workers	26,346	22,630	19,201	-27%	-15%
Core workers	22,922	16,216	17,745	-23%	9%

36,946 workers

- 36,946 workers travelled offshore in 2021. This is 18.5, 15.9 and 15.2% less than 2019 and 2020 and 29% (13,745) less than in 2019.
- The pandemic continues to impact activity. Some restrictions, ranging fr and chemical plants, professional services and accommodation and food service providers. The spread of this indirect employment is defined by how
- 48% (17,745) spent more than 100 nights offshore in 2021, which was 2% more than in 2020 (up 1,529).
- However, this was also 23% fewer than in 2019 (down 5,717).

15%

- The reduction was mainly in travellers who spent more than 100 nights offshore (down 1,529 from 19,270 in 2020).
- Non-core workers fell by 19% last year (2,429 down) from 2019 (7,145).

48%

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3.4%

- Almost 90% of offshore work only from the UK in 2021 (33,866 of 37,800).
- The average offshore traveller worked 49 days in 2021.
- 12% - 16-24
- 40% - 30-45
- 30% - 45-59
- 7% - over 60
- 82% from Scotland
- 20% from the Aberdeen area
- 2% from England, 2% from the east of England
- 1% from Northern Ireland
- 1% from Northern Ireland
- EU countries, with a growing proportion from
- The proportion of workers from other areas of overseas has fallen to 4% down from 10% in 2019. Vis requirements and immigration policy limit the number of non-UK workers.
- Only 3.4% (1,274) of offshore travellers were from the rest of the world.
- This is 2% lower than 2020 and 52% lower than 2019.
- The proportion of females has been relatively consistent in recent years.

Maintenance workers saw the largest reduction in 2021: down 35%

- There was an average of 9,866 people offshore at any time last year, reaching an average of 10,391 throughout 2022.
- This was a rise on the average peak up after the pandemic and the effective management of those of those resources.
- Offshore levels were around 11,500 between August to October 2022.
- The largest proportion of people (49%, 18,866) travelled to the central North Sea, reaching the area of greatest infrastructure. The rest of the UK for other regions is:
- 2% - West of Shetlands
- 11% - Northern North Sea
- 10% - Southern North Sea
- 2% - Morcombe Bay
- 24% - More than one area

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- 2% - West of Shetlands
- 11% - Northern North Sea
- 10% - Southern North Sea
- 2% - Morcombe Bay
- 24% - More than one area

Decarbonisation

Neptune plans CCS for net zero

Neptune Energy signed a preliminary agreement with Horisont Energi to develop a carbon capture and storage (CCS) project in Norway. Known as Errai, it could hold 4-8mn tonnes/ year, with room to grow, they said August 30.

They have not yet decided on the coastal location for the terminal, which will take gas from Norway and the continent, but it will be in the south of the country. Neptune's Norway and UK boss Odin Estensen said: "Errai complements Neptune's strategy to store more carbon than is emitted from our operations and from the use of our sold products by 2030."

Neptune is investing in low-carbon production and has one of the lowest methane intensities in the industry at 0.02%. It says it is on track to achieve its target of zero methane emissions by 2030 and accordingly it has joined the Aiming for Zero Methane Emissions Initiative.

OGCI chairman and former BP CEO Bob Dudley added: "We are proud to welcome Neptune Energy to the Zero Methane Emissions Initiative." The OGCI was set up by upstream companies.

Cygnus contract awarded

Neptune has awarded a £10mn, three-year vessel services contract to Sentinel Marine. It will provide offshore support for the Cygnus gas field in the UK southern North Sea. The contract will see Sentinel Marine continue to deploy its multi-role emergency response & rescue vessel, *Cygnus Sentinel*.

The vessel is designed for both emergency response and platform supply services, thereby reducing costs and emissions and maximising efficiency. The contract includes two one-year extensions.

Aberdeen lands hydrogen funding

The University of Aberdeen's School of Engineering has been awarded £220,000 in government funding to find a way of obtaining hydrogen from organic waste.

This could then be used to heat homes and power businesses on a commercial scale, which would be a breakthrough.

Professor Davide Dionisi's team includes academics from Cranfield and Verona universities. The project will use a sequence of biological, thermochemical and electrochemical stages to maximise the conversion.

Professor Dionisi said: "Hydrogen is a key energy vector in the energy transition and generating hydrogen from organic waste would achieve the combined benefits of reducing environmental pollution and of generating green sustainable energy."

Kent to plan CCS for Stanlow

Engineering company Kent has won a pre-front end engineering design contract for a carbon capture plant at Essar's refinery in Stanlow, northwest England. It will capture emissions from the fluid catalytic cracker's flue gas exhaust, which could equal 1mn tonnes/year, it said November 30. The project supports Stanlow's position as the central pillar of the HyNet low-carbon energy project and Essar's UK decarbonisation strategy. HyNet envisages storing CO₂ emissions from industrial sites in Ellesmere Port in depleted gas fields licensed to Eni in Liverpool Bay. Kent said it had an "excellent relationship" with Essar and was "honoured" to continue supporting its aim to reduce energy-related CO₂ emissions.

FPSO prepares to receive electrons

The Hummingbird floating production, storage and offtake (FPSO) vessel, now berthed in the Port of Nigg, will be modified to facilitate electrification from an external, low-carbon power source, said Aberdeen-based Global E&C late July.

This will help meet the requirements of the North Sea Transition Deal to decarbonise oil and gas production, it said. The company conducted a preliminary front-end engineering and design for the FPSO earlier in 2022.

Global E&C's director of projects Derek Thomson said the company was "delighted"

to be supporting producer Ping, which will use the FPSO to develop the Avalon field in the central North Sea.

Ping also signed an agreement early August with Caerulean Winds for an offshore wind-generated power supply for the project.

Global E&C said its experience in the engineering, procurement and construction arena and its unique offering to support the oil and gas industry in energy transition put it in a strong position to execute the project.

Sodexo's targets get the green light

Science Based Targets initiative (SBTi) has validated Sodexo's science-based emissions reduction targets, the facilities management company said June 9.

The long-term target incorporates emissions created throughout Sodexo's value chain, including its supply chain and client sites: these are known as scopes 1-3.

SBTi, which includes representatives from the United Nations, WWF, environmental performance rating agency CDP and others, selected Sodexo to road-test its target validation criteria and guidance for its new net-zero standard.

Sodexo will reach net-zero emissions once it achieves its long-term science-based target, with any emissions being permanently neutralised.

Aker commits to emissions cut

Norwegian Aker Solutions has committed to halving its Scope 1 greenhouse gas emissions by 2030. CEO Kjetel Digre said: "The energy industry has a key role to play in reducing the effects of climate change, and Aker Solutions aims to lead positive and measurable reductions in greenhouse gas emissions in our industry."

The CEO of UN Global Compact Norway, Kim Gabrielli, welcomed Aker Solutions' commitment to the Science Based Targets initiative.

The plan includes using only renewable energy; electrifying mobile vehicles across sites; and certifying the enterprise to ISO 50001. Separately, Aker Solutions has been awarded an A+ for its ESG reporting. The influential annual ESG100 report, by the

Position Green Group (formerly known as The Governance Group), analyses the accuracy, clarity, and relevance of the ESG data from the largest companies on the Oslo stock exchange.

Ineos buys LNG for lower-carbon ops

European energy company Ineos agreed December 1 to offtake at least 1.4mn tonnes/yr for 20 years from Semptra's Port Arthur LNG project planned in Texas. In July it signed a long-term capacity agreement with German LNG Terminal at Brunsbüttel although the LNG will have flexible delivery. Ineos' first cargoes are due in 2027. Ineos chairman Brian Gilvary said the deals secured the key areas of the value chain across the Atlantic corridor. "Long term supply from Ineos will help alleviate the structural energy issues in Europe," the former BP CFO added. Ineos says it is a first-mover among European corporates as it secures competitive sources of energy to meet its own needs and those of its customers in Europe, as part of the energy transition. US LNG is typically priced off Henry Hub front month, plus a few dollars/mn Btu to cover construction costs, plus the cost of liquefaction -- a small percentage of the Henry Hub price. Given its big cost advantage, US has become a major LNG exporter.

Corporate

Proserv buys stake in Synaptec

Global controls technology company Proserv has acquired a minority stake in Glasgow-based power system monitoring expert, Synaptec. The deal, announced September 28, builds on their strategic alliance, formed in October 2020.

Proserv led the consortium that included Synaptec and subsea power cable engineering and consultancy specialists BPP Cable Solutions to innovate the pioneering holistic cable monitoring system, ECG™, for the offshore wind segment (see *OEUK Magazine #53*).

The potential capabilities of ECG helped it to win £1mn development funding from Innovate UK in 2021, alongside subsequent industrial sponsorship from ScottishPower Renewables and Equinor, operators of the Dogger Bank offshore wind-power project. Proserv's VP, Renewables, Paul Cook, said the close working relationship with Synaptec had led to disruptive new solutions to support the offshore wind space. "We look forward to further collaboration as we seek to identify more opportunities where we can deploy our know-how right across the energy sector."

Proserv, Ortomation tie up

Proserv has signed a memorandum of understanding (MoU) with UK start-up Ortomation, it said August 11. The tie-up is intended to fund the development and marketing of real-time optimisation (RTO) software. Effective RTO can improve performance by up to 5%.

Ortomation's CEO Paul Oram said: "We are extremely excited to be working with Proserv and truly believe our partnership will deliver a game-changing technology for all across the process industry."

Proserv pivots towards green

Proserv has announced a corporate realignment. CEO David Currie has become the chairman of both Proserv and sister business Gilmore Valves, the Houston-based flow control specialists. He will focus on customer relationships, strategic alignment and the energy transition. David Nemetz will continue as CEO of Gilmore.

Hugh McNeal, formerly CEO of RenewableUK and with senior level experience in government, joins the Proserv board. And Davis Larssen, CEO of Proserv Controls, will also join the board.

David Currie said the strategic changes would help shape the business and future-proof its portfolio.

Drilling Systems sells lab to US

Simulation technology provider Drilling Systems has delivered a bespoke well-control training lab to Western Texas College (WTC) with the installation of its cutting-edge simulators, owner 3T Group

said August 23. Training will cover drilling, workover, intervention, and operational procedures.

Drilling Systems' Americas director Euan Kennedy said: "In high-risk sectors like oil and gas, the consequences of human error or equipment malfunction can be catastrophic, and simulators help prepare workers for the field like nothing else.

"Our simulators allow students to experience the movement, sounds, and operations of a real rig so that they can practice everyday operations and specific emergency scenarios in a risk-free environment. This means that when working in the field, they feel prepared and confident with whatever task they face."

WTC president Barb Beebe added: "We're excited to be able to offer in-demand well control training in Snyder that enhances the education of our Petroleum Technology students and provides continuing education opportunities for our oil and gas industry employees."

Italmatch buys Aubin Group

Process chemicals maker Italmatch Chemicals has acquired Scotland's Aubin Group, which also develops and supplies innovative chemicals to the oil, gas and renewables industry.

The acquisition brings sustainable solutions that are consistent with Italmatch's environmental, social and governance strategy, Italmatch said on June 27.

"This is a testament to the group's continued commitment to research and development projects dedicated to developing and delivering sustainable solutions for various sectors, including products for renewable energy market as well as decommissioning activities," Italmatch said.

Aubin Group also has offices in the Middle East and the US, an area of interest for Italmatch. Aubin "has a world-class well services business and many highly qualified professionals," said Italmatch.

Stena Drilling sets up well subsidiary

Stena Drilling has set up a wells subsidiary,

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and appointed veteran Dillan Perras to run it, it said August 25.

Mr Perras will lead the new company as it delivers fully managed well construction and decommissioning campaigns on behalf of the operator community.

He formerly worked at Talisman and successor companies Repsol and Sinopec Resources where he was manager for drilling & completions.

His work has covered all aspects of well operations from engineering and planning through to intervention, drilling, completions and decommissioning. He is a member of Offshore Energies UK Well Decommissioning Group.

He said: “Stena Wells is an extremely exciting prospect bringing something new to the market...[it] will be the only company offering a fully managed service for well construction in the North Sea and the second to provide full mobile offshore drilling unit well decommissioning.”

Liberty shortlisted for prize

Liberty Industrial’s Port Kembla gas terminal early works project in Australia was shortlisted in the Civils Demolition category at the 2022 World Demolition Awards in Vienna, late November.

Australian Industrial Energy (AIE) engaged Liberty to undertake the demolition, remediation and earthworks at the terminal in the Illawarra region of New South Wales (NSW).

The work paved the way for the development of Australia’s first liquefied natural gas (LNG) import terminal – a landmark project to supply more than three quarters of NSW’s energy requirements.

Exceptional outcomes included the cutting of 499 piles, using innovative wire-sawing techniques developed by the demolition team; and the removal of a 220-m deck with carefully sequenced crane lifts. Some sections of the wharf deck were over 1.2m thick, resulting in lifts over 60 metric tons (mt) with a swing radius of up to 26m using a 300-mt crawler crane.

The overwhelming force of the ICE1412 Pile Clamp – the largest single pile clamp and vibration unit available in Australia – extracted the piles.

Upstream

Wells to test southern basin

Deltic Energy and UK major Shell hired the *Maersk Resilient*, a high efficiency jack-up rig already under contract to Shell, to drill the Pensacola exploration well in late 2022. Deltic said the *Maersk Resilient* should bring significant operational efficiencies.

Pensacola could unlock a significant new source of cost-competitive gas. This would show that the UK still has a significant level of previously unrecognised exploration upside, Deltic said.

Pensacola is a Zechstein Reef prospect northwest of the Breagh gas field in the southern North Sea. Deltic estimates its gross P50 prospective resources at 309bn ft³ with a 55% geological chance of success. This makes it one of the highest impact exploration targets in the gas basin to be drilled in recent years. The Zechstein Reef play has been successful across Europe, from Poland to the Netherlands.

Deltic and Shell have also taken a positive decision to drill the Selene gas prospect, also in the southern North Sea. Deltic holds a 50% working interest in the licence but will be carried for 75% of the costs of drilling and testing the well up to a maximum of \$25mn. Shell will be the operator.

Selene is one of the largest unappraised structures in the Leman Sandstone fairway of the southern gas basin and Deltic estimates it holds gross P50 prospective resources of 318bn ft³ of gas with an even higher geological chance of success than Pensacola: 70%.

Ofelia well meets commercial goals

Neptune Energy has confirmed that its Ofelia exploration well (PL 929) has made a commercial discovery 15 km north of its Gjøa field in the Norwegian North Sea. It found between 16mn and 39mn barrels of oil equivalent (boe) in the Agat formation, at a water depth of some 344 m, it said August 26.

In addition to Agat, north of the well there is an upside of around 10mn boe recoverable

gas in the shallower Kyrre formation, which brings the total recoverable volume to 26mn and 49mn boe.

Along with earlier discoveries Duva and Hamlet, Neptune says it has opened a new geological play in Norway. Gjøa is powered by electricity from onshore to reduce the carbon intensity.

Neptune Energy’s Norwegian exploration head Steinar Meland said: “The Ofelia discovery underlines the strength of our exploration strategy and confirms the high prospectivity potential of the area around Gjøa.”

Training

Learn digitally to dodge war, Covid

The energy industry is benefiting from digital learning as it wrestles with the pandemic and war in Ukraine, says eCom Learning Solutions’ senior energy specialist Susan Gearing.

“It’s difficult to talk about energy recovery from the pandemic in isolation from the climate emergency and transition plans, as well as national energy security in a tumultuous world,” she said August 5.

“All the key players in the energy sector publish, on their websites, an energy transition document and an energy transition target.

“There is a huge amount of work going on in the background, working on strategic and operational plans to achieve that target,” she said.

eCom is also working on company-specific learning materials to help oil and gas workers parlay their skills into the renewable energy sector.

AIS Survivex in lifeboat training

Training company AIS Survivex has invested almost \$1mn in lifeboat simulator technology at its training facility in Aberdeen Harbour, it said July 12.

The company is the first in the world to offer OPITO-approved lifeboat training for coxswains both practically in the harbour and virtually via a simulator for free fall and twin fall escape scenarios.

It can mimic all weather and natural light conditions. Training for all eventualities like this builds competency and improves safety standards, it said.

AIS Survivex centre manager in Aberdeen, Jamie Purves, described the technology as a “major investment in our Aberdeen facility and underlines our continuing commitment to both the oil and gas and marine sectors to provide innovative training solutions, which build a competent and safe workforce.”

Maersk in Japanese link-up

Danish Maersk Training has signed a memorandum of understanding with Japanese ClassNK on training offshore wind farm operators in the Asia-Pacific region. It will also educate crews on how to handle alternative fuels for ships, such as ammonia. Based on its expertise and experience in ships’ survey and certification, ClassNK will work with Maersk Training to develop a set of guidelines including the safety of boat transfer, which is one of the most frequent health and safety risks across the offshore wind sector.

Part of the AP Moller Maersk Group, Maersk Training is an international industry leader in developing competencies and increasing skills.

Clyde opens Glasgow centre

Clyde Training Solutions (CTS) has opened a new International Well Control Forum-accredited drilling and well control training centre in Glasgow. And a second is due to follow in Aberdeen.

It has appointed Jamie McHattie as senior technical instructor to head up the new facilities, which will provide IWCF Drilling and Well Control Level 2 and IWCF Drilling and Well Control Levels 3 and 4 in-person and virtually. The Clydebank facility is already receiving bookings.

The new training infrastructure includes drilling and well control computer simulators provided by Houston-based Endeavor Technologies, with CTS becoming the first company in the UK to use its globally renowned equipment.

CTS general manager Kris McDonald said:

“Ensuring workers are competent beyond compliance is key to everything we do. Bringing Jamie on board is an indication of the quality of training we are able to offer delegates to help prepare them for working offshore, and this investment is an indication of our intention to grow further.”

Anniversaries

Sage marks 30 yrs' gas deliveries

Ancala Midstream, the operator of one of the country’s biggest energy infrastructure items, the Scottish Area Gas Evacuation (Sage) terminal in St Fergus, Scotland, has celebrated 30 years of safe and reliable domestic gas supply. It provides up to 15% of the country’s domestic supply on any day, it said, receiving gas from UK and Norwegian fields.

The company is now looking ahead to the delivery of net-zero carbon emissions targets.

CEO Jim Halliday said: “We strongly believe in the future potential of Sage and will continue to provide secure services to its current and future customer base for the next 20 years.”

Sage is involved in the Acorn project to help decarbonise the national energy supply: the UK government has decided the plan to remove the CO₂ from the gas delivered to the terminal is eligible for future support. “While these options develop, Ancala Midstream will continue to provide the UK with vital gas supplies and continue to seek ways to further reduce our environmental footprint,” he said, thanking the staff and contractors who have worked on the system over the last three decades

Asset55 marks first decade

Since it was set up in 2012, Asset55 has grown to be an industry leader by creating tangible value in the operational and capital project space. With continuous innovation of their technology solutions, Asset55 provides industry-changing software supported by subject-matter experts in the field of engineering, software development, and site development.

To celebrate this milestone, Asset55 is delighted to announce it has officially rebranded with a new company logo, website and software names.

Additionally, Asset55 is delighted to announce continued growth with loyal clients.

Two major contracts have been signed with the North American companies Cenovus Energy and Cameron LNG respectively providing operational software and assurance to their global operations.

Asset55 is solving the root cause challenge of poor data integrity that has led many projects to fail on schedule and/or budget. Validate is creating value for end users beyond expectations, which has created a real buzz amongst project leaders and information managers globally.

People

Cognite appoints Grenet as CRO

Cognite has announced that Paul Grenet will join the company as Chief Revenue Officer (CRO). It said he brings “extensive experience in driving sales organisations and go-to-market strategies for global technology companies and is poised to lead Cognite towards ambitious revenue goals.” Grenet, formerly global head of sales at PTC, will be responsible for all aspects of Cognite’s revenue performance.

Cognite CEO Girish Rishi said: “Paul brings deep domain expertise in energy and industrial markets and has lived and worked on both sides of the Atlantic, installing scalable systems in data management, applications, and in the internet of things.” “Cognite’s data contextualisation platform is fast becoming the bedrock for leading customers in energy and industrial sectors to deliver on sustainability goals and leverage operational efficiencies,” said Grenet.

3t names Corp Dev director

Training, technology and simulation solutions provider 3t Energy Group (3t) has appointed Martin Hottass as its corporate

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development director. It said his expertise would help it expand its offering, helping 3t to deliver a safer, smarter, more efficient workforce (see feature on AIS Survivex). Formerly the director of technical training at City&Guilds Group and with international experience, Hottass joins 3t at a time of growth as the team supports its domestic and global client base with world-leading training and competency solutions, 3t said. His industry experience, gained from work with the Institute for Apprenticeships, National Skills Academy for Rail and the Energy Efficiency Industrial Partnership, will enhance 3t's delivery of developing a safer and more efficient work-place, it said. Hottass said he was "excited to use my experience to help shape the future of training for the sectors we operate in."

Additional role for CEO of NZTC

Colette Cohen is to become the chair of unmanned aerial vehicle company Flylogix. She remains the CEO of the Net Zero Technology Centre in Aberdeen. Flylogix CEO Charles Tavner said Flylogix would have remained an idea on paper, but for a conversation he had held with Colette seven years earlier. He said she was one of the most experienced and inspiring executives in the energy industry. She was also "incredibly encouraging to us at the inception, not just of the company, but of the idea behind it." Colette started working in the energy industry in 1991 and she has worked for major international oil companies in the North Sea, the US and Kazakhstan. Before joining the NZTC in 2016 she had been senior vice-president for Centrica Energy's upstream business, now the bigger partner in the joint venture Spirit Energy. She has also served on the board of OEUK and the NSTA's Decommissioning Board and has a number of non-executive directorships in the oil and gas sector.

Oilfield services

Valaris, Survitex extend deal

Offshore driller Valaris has renewed the service agreement with survival appliances provider Survitex for another three years. Explaining its decision in a November 30 announcement, Valaris referred to Survitex's more than 400 service stations globally and its streamlined lifesaving appliance maintenance. The master service and supply contract, originally signed in 2016, covers the annual and five-year inspection, servicing, and maintenance of lifeboats, davits and fast rescue crafts. Valaris has a global fleet of 11 drill ships, five semi-submersibles and 36 jack-up rigs.

"Ultimately, offshore oil and gas operators benefit from a single service provider without the administrative burden and costs associated with contracting multiple service partners," Survitex said

Shell signs up Don with Stena

Stena Drilling has signed a contract with Shell UK for the mobile offshore drilling unit *Stena Don*, the Swedish company said late July.

The work had a firm scope of 365 days with an option to extend for up to an additional year, in direct continuation from the firm scope.

Work will take place in the UKCS and activities will include a combination of plugging & abandonment work and drilling development wells. Shell has farmed into some gas projects licensed to Deltic in the southern basin.

Stena Drilling said it was "delighted to secure work with Shell UK in the UKCS."

"The contract award with Shell UK is fantastic news for Stena Drilling, securing long-term work for the *Stena Don* on an exciting collection of projects with Shell UK in the North Sea," said Stena Drilling CEO Erik Rønsberg.

Well-Safe to P&A 14 wells

Well decommissioning specialists Well-Safe Solutions has signed an agreement to plug and abandon (P&A) 14 wells on the UKCS. The deal is the first scope agreed for the *Well-Safe Defender* semi-submersible rig, which Well-Safe Solutions purchased in June 2022.

The project, for an undisclosed value, will see the *Well-Safe Defender* mobilising in March 2023 for about 250 days of work.

The company's operations director Neil Ferguson said: "This is a very exciting time for our teams, with a little over a month between Well-Safe taking ownership of the *Well-Safe Defender* and the signing of this contract with our latest client."

The *Well-Safe Defender* is undergoing a host of efficiency enhancements as part of its integration into the business. It will also be recertified.

Commercial manager Gavin Robinson added: "We are delighted to assist our client, a leading European operator, with meeting their decommissioning obligations on these historic fields."

The announcement is the latest in a summer of growth for Well-Safe Solutions which included a deal with Ithaca Energy and a capital boost exceeding £50mn.

Well-safe Guardian gets upgrade

Trendsetter Engineering is to upgrade the *Well-Safe Guardian* semi-submersible rig with the Trident Intervention System.

Its main application will be in open water intervention riser mode, providing secure mechanical access for wireline or coiled tubing operations.

The partnership gives Well-Safe exclusive UK access to the system for well plug and abandonment (P&A).

OWM wins Well-Safe contract

Water management and risk prevention specialists OWM Group has been awarded a two-year framework agreement to provide drinking water management products and

services to decom-missioning specialists Well-Safe Solutions.

The agreement kicked off in May of this year and it will cover all three of Well-Safe Solutions assets: *Well-Safe Guardian*, *Well-Safe Protector* and – the latest addition to its fleet – *Well-Safe Defender*.

Well-Safe Solutions' operations director Neil Ferguson said: "The support of OWM has played a considerable role in ensuring we continue to deliver operational excellence across our assets. Their commitment to market-leading technologies, as well as their team of knowledgeable technicians, has made OWM the right choice for this agreement."

Tendeka extends Equinor contract

Global completions specialist Tendeka has signed an exclusive multi-year contract extension with Norwegian producer Equinor for its operations on the Norwegian continental shelf (NCS). In a September 14 statement it said it would manage the complete supply chain of sand and inflow control equipment through standardisation. Tendeka CEO Brad Baker said: "This is real recognition for the work our team has delivered to Equinor for more than a decade.... It's significant that our technology will now be available for deployment across all Equinor's NCS assets and further cements our position as the global industry leader in sand and inflow control technology."

Karianne Amundsen, Tendeka's Scandinavia Area Manager added: "We are extremely proud to be implementing an efficient supply model for sand and inflow deliveries across the continental shelf. This award is a result of a wider standardisation initiative which will enable improved logistics, reduced waste and shorter lead times."

In addition to sand and inflow technologies that will be supplied under this contract, Tendeka provides advanced completions and production optimisation.

Petrofac extends Serica contract

Oilfield services provider Petrofac has secured a three-year contract extension for maintenance services from Serica Energy, it said September 15.

Petrofac will continue with the provision of maintenance execution, maintenance consultancy and metering services to Serica Energy's Northern North Sea asset, the Bruce platform complex which additionally processes production from Keith and Rhum. Petrofac's Asset Solutions business COO Nick Shorten commented: "For more than four years, our team has been supporting Serica Energy to enhance production and extend the field life of its assets." He said Petrofac looked forward to "adding additional value through the delivery of predictable, efficient operations."

Archer extends drilling contract

Bermuda-registered Archer has secured a five-year contract to supply platform drilling operations and maintenance services on seven installations with a UK North Sea operator, it said September 24.

The contract extends an existing contract and comes with a four-year option.

The contract includes platform drilling operations and maintenance services, intervention support activities, well services, facilities engineering support and equipment rental.

Vice-president Kenny Dey said: "This long-term commitment reflects our client's confidence in our ability to maintain safe operations whilst delivering improvements to both the drilling facilities and to the platform.... We firmly believe this contract win is a result of Archer's continued commitment to provide our clients with high service quality and to deliver solutions which improve well delivery, integrity and performance."

Front-cover pic scoops award

'Boats in harbour', on this issue's cover, was taken by Darren McAllister. It won AIS Survivex's 2022 photography competition, in the 'maritime/others' category. Head of marketing Linzi Ryan said: "Some of the images we received were absolutely jaw-dropping and it was an extremely difficult job deciding on the winners. Our customers are clearly extremely talented!... The winning images, and some of our other favourites, will be displayed within our training centres for hundreds of people to enjoy every day."

Liam Wright won the 'oil and gas' class and Nick Baker Haste won the 'wind' class of the competition, which drew 350 entries. The prize is a free AIS Survivex training course.

An invitation to submit your member news

Members are invited to submit their news to our editorial team, via email to us at:

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Selected stories will be published in this magazine and/or the member news section of the Offshore Energies UK website

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Member news is subject to editorial review and no guarantees of publication are given.

For more information please contact our Editorial team.

Energy, politics and consensus

The key actors in Britain's political world come and go but today's biggest problems are imported and could last years. The technology to solve them will be complementary and need compromise, says OEUK's Energy Policy Manager, Will Webster.

The time when complex issues were discussed logically in public forums with a view to striking a compromise is giving way to binary opinions. Social media posts can quickly turn hostile. And the possibility of discussing the peaceful co-existence of molecules and electrons is no exception. Little or no credit has been given to the hundreds of companies who produce, refine or market oil and gas, and the vital products made from them. Yet they have held steady and continue to support the country. Consumers also suffer as protesters block motorways, delay trains, force the cancellation of some art sponsorship and so on.

And while Putin's invasion of Ukraine has caused a dire humanitarian crisis, it has also highlighted the UK's need of affordable and dispatchable energy.

It is therefore unfortunate that what should be a nuanced and thoughtful conversation on decarbonising our energy system and progressing the energy transition is becoming a question of who should be the winners and losers in the energy debate. Rather we ought to work together to solve the energy trilemma and rebalance energy security, affordability and sustainability. As in the famous optical illusions by Escher, it seems one of the three pillars is always illusory.

Working with, not against

In fact, I was recently engaged in a similar conversation at the Conservative Party conference in Birmingham that had some very reasonable panellists. This was a constructive discussion although some of the standard lines about our industry were indeed raised.

In order to address these challenges, there is one thing we cannot stress enough. That is, the fact that renewables and fossil fuels are not competitors: quite the reverse, as they in fact do very different jobs in the energy system. Without gas in particular there is little chance of connecting renewables to

a transmission system that has to be in balance at all times.

The second item that needs mentioning is the long-term storage properties of oil and gas and the resilience this gives the overall energy system. Although battery storage is growing, it is nowhere near large enough to meet this need. In addition, we also need seasonal storage as the country uses twice as much gas in winter than in summer. Batteries might be fine for a few hours' duration but are not yet ready for August injection, January withdrawal – unlike the Rough gas storage asset, for example.

Last, have an open mind – your assumptions may be wrong! People want to debate the properties of various technologies as they are today. But by 2040 or 2050 they will probably be totally different. So we might find there is a new technology which will make some of what we offer today obsolete. This is not something that our industry, with its record for innovation, should be afraid of.

Generally speaking it is better not to throw stones at other technologies. Offshore wind is a key example: in about 15 years, it has evolved from an eccentric idea into a fast-growing technology. It will also help the offshore oil and gas producers to decarbonise.

We also have to move the discussion on from previously held ideas. When it comes to energy, societal needs and goals are intrinsically linked to the upstream sector. For example the energy price cap and windfall tax have shown that it is not possible to isolate the “upstream” business from wider societal goals.

A situation where people cannot afford to turn their heating on for fear of being unable to pay their bills is not only very unfair: it is also not in our sector's interests.

Industry has also tended to push a market-driven but agnostic approach to technology such as carbon capture, while other segments rely on an interventionist approach led by government. A key



Brian Payne

Union makes demands

OEUK has been working closely with the trade union GMB. It is a key influencer of policy development. It posed five key questions to the Labour Party during its conference, including what would be the percentage requirement for local content in renewable energy generating plant; and whether it was opposing new licences for drilling in the North Sea.

The union's general secretary Gary Smith said: "Labour's energy policy needs to deliver for working people or it won't deliver at the ballot box. It's all well and good talking about the shift to green industries, but where's the plan for the tens of thousands of energy workers who will be affected?"

"So far, the supposed jobs bonanza in renewables manufacturing has been a sick joke at the expense of UK workers, with authoritarian regimes across the world hoovering up contracts that should be completed here at home. We need a plan that understands the value that energy workers bring to their communities and our country. This plan must live in the real world, or it is doomed to fail."

**"Great British Energy will be a new company that takes advantage of opportunities in clean British power because it's right for jobs, right for growth, right for energy independence from tyrants like Putin."
– Labour leader Keir Starmer**



Gareth Taws

**"So far, the supposed jobs bonanza in renewables manufacturing has been a sick joke at the expense of UK workers, with authoritarian regimes across the world hoovering up contracts that should be completed here at home."
– GMB general secretary Gary Smith**

Labour Party Conference: key energy elements

OEUK also attended the Labour Party Conference in Liverpool and hosted a closed-door roundtable event in partnership with New Statesman. Present were sector representatives and Labour's Shadow Net Zero Minister Bill Esterson MP.

That part of the northwest was once a big gas producer (Liverpool Bay) and it is also a major industrial gas consumer. OEUK members' work on carbon capture and storage offshore and hydrogen combustion onshore through the Hynet project, is further evidence of the transition in action.

If elected, Labour will implement its new industrial strategy for a fairer, greener future, offering certainty to businesses and investors.

Labour pledged to "build British industry" through the use of a state-owned investment fund. In her speech, shadow chancellor Rachel Reeves set out plans including a promise to invest in national projects from battery factories to clean steel plants, thanks to a National Wealth Fund.

The policy would mean that when money is spent on projects, British people would own a share of that wealth. The party said projects will include eight new battery factories, six clean steel plants, nine renewable-ready ports, the world's biggest hydrogen electrolyser plant and net-zero industrial clusters in every region of the UK.

The strategy will be underpinned by a new statutory body, the Industrial Strategy Council (ISC) which like the Climate Change Committee will ensure a future Labour government meets its commitments.

Labour leader Sir Keir Starmer has also said the UK needs to double onshore wind, triple solar and quadruple offshore wind to achieve the party's ambition of generating purely renewable electricity.

Starmer also committed to creating Great British Energy, a publicly owned energy company run on clean British power, in his first year of government. "Great British Energy will be a new company that takes advantage of opportunities in clean British power because it's right for jobs, right for growth, right for energy independence from tyrants like Putin."

The idea is that it would work with independent companies to help drive an expansion in green energy. Labour sources have said the plan will start small, then grow. The goal is to turn the UK into a "clean energy super-power."

statistic is that investment in energy across the board needs to double from around £25-30bn/year today.

So discussions with reasonable people like politicians and academics are usually productive.

Some of the NGOs can also be constructive. At our recent Legal Conference in Aberdeen we invited Adam Woodhall (Lawyers for Net Zero) to talk about the role of a general counsel in advising on future climate related litigation. While we were looking up his Extinction Rebellion credentials, he was reasonably opining on how to influence directors to take better investment decisions and avoid trouble coming down the line. This is useful as whatever solutions industry puts forward to contribute to net zero, they need to be designed to make a proper contribution.

Last, going back to the Conservative Party conference, there is clearly still a body of opinion which would happily give up on the net-zero objective on the grounds of affordability, security of supply or both. You might think that OEUK would find this helpful, but the opposite is the case. First, because they are wrong: although gas and oil prices go up and down, renewables are now competitive.

They also deliver a contribution to energy security as they are domestic resources just like the UKCS. Abandoning net zero is also bad for our members' businesses since they are making strategic decisions about how to adjust to this long-term direction.

Uncertainty is bad for business and so maintaining the cross-party consensus around the future of the energy sector is important.

We do however need to communicate that the energy system has to work: right now, during and after the transition. Too many commentators blithely assume that all the hard work has already been done, even though there is a compelling body of evidence that discrimination against financing oil and gas has contributed to today's energy supply problems.

In reality the UK will have to effectively maintain parallel energy systems for many years and both have to provide the same level of reliability if the country is to function as a leading global economy. Reports this winter of consumers turning back to coal and wood fires and diesel generators in the absence of cleaner energy carriers demonstrate that the wrong set of policies will frustrate the ambition of net-zero carbon emissions.

At time of press, northwest Europe was experiencing the kind of climatic conditions -- sub-zero day-time temperatures, no wind and very little sun -- that place a heavy burden on gas: and these are typical in winter. Surges in power demand during the World Cup and other random and not always quite so foreseeable events on top of that point to the albeit cliched wisdom of an "all of the above" approach.

OPITO's passport to switchable employment

Industry meets key milestone in the creation of the North Sea all-energy workforce

Scotland's offshore energy industry has hailed the impressive progress made towards delivering the innovative skills 'passport' that will transform workforce mobility across all sectors.

The ambition for a net-zero offshore energy industry is accelerating at pace, and a key factor to enable a just and managed transition is securing a skilled, diverse and agile workforce.

Putting its people front and centre to achieve this goal, Scotland's offshore energy industry is working towards delivering an innovative skills passport that will transform workforce mobility across all sectors.

The industry steering group driving the ambitious industry-wide collaboration is well on track to meet its milestones. Led by OPITO, the Aberdeen-based global skills organisation for the energy industry, it is confident that the full skills passport solution will be ready for deployment across the entire offshore energy workforce in the third quarter of 2023.

That positive forecast reflects the successful achievement of the objectives of the first action plan to emerge from the Integrated People and Skills Strategy (PSS), launched in May to support the North Sea Transition Deal.

The purpose of the plan, Aligning Offshore Energy Standards, is the mapping and recognition of training and standards right across the offshore energy sector, identifying gaps and removing duplication. A first tranche of mapping and alignment has now been completed, accounting for about 70% of core roles which support an offshore installation; a second tranche of role mapping is in progress.

Growth = more offshore jobs

The overall offshore energy workforce is set to grow significantly in the coming years with more than 211,000 jobs across the offshore energy industry expected by 2030. This creates huge opportunities for people and communities across the country.

The good news is that the opportunity to create jobs and new skills in the rapidly changing North Sea is significant and there is a high degree of skills transferability between the oil and gas sector and other emerging offshore energy sectors.

The proof-of-concept for the skills passport is on target for delivery by the end of this year. This follows the securing of almost £5mn in development funding from the Scottish government's Just Transition Fund, on top of the initial £2mn investment commitment made by the industry itself via OPITO.

The passport is a digital solution that will streamline the transfer of skills and address the lack of recognition of cross-sector skills. It focuses on technical qualifications and training; safety and survival training; and specialist emergency response training to support the transition of the workforce between sectors.

"The overall offshore energy workforce is set to grow significantly in the coming years with more than 211,000 jobs across the offshore energy industry expected by 2030."



Specifically, the skills passport will display an individual worker's current qualifications and the required qualifications to transition into another energy sector. It will allow users to prove that they have the recognised qualifications and training needed to access worksites.

In addition, by displaying which qualifications and certificates are recognised and required for roles in each sector of the industry – hydrocarbon, renewable, carbon capture, use and storage and hydrogen – it will help the workforce identify and plan future career pathways and skills needs.

The passport addresses the major problem of unclear and fragmented pathways for skilled workers trying to move between the different sectors of the offshore energy industry. The current lack of an integrated framework leads to huge frustration, delays, costs and alienation as workers encounter barriers to a smooth transition such as the repetition and duplication of training.

Streamlined operations

Workers are regularly obliged to repeat training when moving between sectors, incurring substantial financial costs, often at personal expense, and having to make a considerable time commitment. For the employer, financial costs and lost work days are also a burden that streamlining could counteract.

But such frustrations should vanish into the past. OPITO and Renewables UK have worked together to cross-recognise training programmes. The cross-industry recognition of different Sea Survival and Basic Firefighting units alone will reduce re-training requirements by an estimated day and a half.

OPITO has also worked closely with other training providers including Cogent Skills, ECITB, IMCA and Renewables UK to map technical qualifications for key technical roles.

Together, the Integrated People and Skills Strategy (PSS), and the North Sea Transition Deal which it supports, aim to ensure that the UK government and the offshore oil and gas sector can meet emissions



Craig Angus

reduction targets. The PSS sets out the blueprint for developing the multi-disciplined, all-energy workforce needed to deliver that just transition while maintaining the nation's energy security.

Crucially the notion of a passport emerged from close collaboration with the energy industry's operating and contracting companies; its workforce; governments and their agencies; trade unions; trade bodies; skills bodies; and education/training providers. Everyone has a stake and a keen interest in making it work.

Five action-plans

The strategy is supported by a series of five action plans which translate into tangible, timebound actions to create the right focus and drive results that the industry needs to deliver the managed transition for the workforce. The first is 'aligning offshore energy standards.'

Buoyed by the advances made so far, there are high expectations for the next three. They cover the vital areas of improving skills data intelligence; meeting future skills demand; and defining workforce skills. The fifth and final action plan, championing diversity and inclusion, is in development.

Together the five action plans will maximise the opportunity and optimise the efficiency of the offshore industry's net zero carbon future. They address the major challenges for the industry during a period of disruption and dynamic change: attracting enough people to meet demand from growing sectors; sustaining critical ongoing oil and gas activities; and ensuring that the skilled workforce is retained in the sector until there are sufficient new low-carbon energy projects to employ them.

The transition affects technicians, skilled craftspeople and administrators working across the whole supply chain – onshore, offshore, and in the subsurface

"The strategy is supported by a series of five action plans which translate into tangible, timebound actions to create the right focus and drive results that the industry needs to deliver the managed transition for the workforce. The first is 'aligning offshore energy standards.'"



environment – in areas such as project management, engineering, construction, manufacturing and business support.

The shrewd use of technologies will be key to future success.

The creation of a future talent marketplace, transcending current organisational boundaries to span the whole energy ecosystem, will be vital in changing organisational cultures.

The strategy and the five action-plans emerge from a recognition that the UK's offshore energy sector is rightly proud of its heritage in the oil and gas industry but that its future is in accelerating energy transition to net zero.

A long tradition of adaptability

Half a century ago, companies working on the UKCS helped pioneer the frontier technologies for extracting hydrocarbons from the world's most hostile environments. In doing so a world-class offshore workforce developed, many of whom transferred their skills from other industries including mining, shipbuilding, construction and automotive engineering.

That noble legacy provides incredible competitive advantages today in terms of the world-leading expertise and technological know-how needed to adapt to the integrated energy future. Offshore wind generation, carbon capture and storage and hydrogen production, as well as ongoing low carbon oil and gas recovery, will all benefit each other.

Encouragingly, as many as nine out of ten people working in the UK offshore oil and gas industry have skills that can transfer to the emerging low-carbon offshore energy alternatives, which is why the passport, and the standards alignment, are not only highly desirable but also mission-critical. They are the keys to unleashing a

reinvigorated offshore energy workforce of more than 200,000 by the end of the decade, expanding to as many as 350,000 people by 2050.

Those transferable workforce skills are vital to support a UKCS offshore energy system that will have changed rapidly by 2030. According to industry forecasts, it will continue to produce some 200mn barrels of oil equivalent/year, but this will be complemented by 50 GW of installed offshore wind capacity – sufficient to power the UK's 30mn homes while leaving 20 GW of remaining capacity for business, industrial and civic use.

Over the same timeframe, carbon capture and storage capacity is expected to grow to 20-30mn metric tons/yr and hydrogen production is set to increase to 10 GW. And technologies will integrate, so that offshore wind developments support the electrification of oil and gas facilities.

Moving rapidly to that secure, sustainable, and safe integrated energy system requires the input and skills of a workforce which is diverse, agile, and adaptable across sectors. The skills passport is the first key to delivering that exciting future of opportunities right across the supply chain.

OPITO is a global, not-for-profit, skills body for the energy industry. More than 375,000 people are trained to OPITO Standards every year in more than 50 countries through 230 accredited Centres.

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Finding a quality standard for CO₂ in pipelines

At the dawn of the carbon capture and storage era, OGC Energy is researching the risk to infrastructure posed by impurities in the CO₂ stream. Its researchers have come up with a pragmatic solution.

All hope of achieving the Paris Agreement of 2015 – according to the various scenarios mapped by the International Energy Agency among others – depends to a large extent on the presence of a global thriving carbon capture and storage (CCS) industry.

Oil and gas will remain the lynchpin of most of the world's economies for decades to come. There is therefore no doubt about the importance of the role that CCS will have to play in the energy transition. A net-zero emission economy implies CO₂ will continue to be produced, but that none will be allowed to find its way into the atmosphere.

The future of strategically important, energy-intensive industries such as steelmaking, concrete and fertiliser production will require CCS, either as part of the blue hydrogen production process or as an alternative to paying the rising price of emissions allowances.

For these and other reasons, CCS is a part of the UK's commitment to net zero too. And unlike some of its neighbours, the country has the geology, the infrastructure and the supply chain to enable it.

While commercial third-party CCS is only theoretical in the UK, there are several decarbonisation projects moving forward that will depend on it within a few years. But experts at materials and corrosion consultancy OGC Energy warn of a potentially catastrophic knowledge gap in our understanding of CCS: the risk posed by impurities in the gas. Too small sometimes to measure, they are still liable to form corrosive compounds when in the dense phase of transport.

The enemy inside the pipe

The team says that the oil and gas industry must change its mindset, in order to protect pipelines used for carbon capture. Localised corrosion cannot be mitigated by a corrosion allowance and regular inspections, which is the industry's conventional approach, OGC Energy told OEUK. The industry assumes a gradual, measurable degradation in the carbon steel over a few decades, whereas the damage done by corrosive acids can be rapid, catastrophic and unpredictable.

Pitting can reach corrosion rates as high as 2 mm/

year when highly acidic aqueous phases are present. Solid formation from impurities such as ammonia could lead to carbamate, salt and other damaging substances building up in the pipeline, further affecting the long-term integrity of pipelines and equipment.

Academic research shows that aqueous phases containing sulphuric and nitric acid can form when SO_x and NO_x are present, leading to highly dangerous events of localised corrosion. This is a major threat to third-party carbon transport, whose exact chemical composition is likely to be highly variable. The UK government, in its business models, recognises that the cheapest pipeline material, carbon steel, is the only affordable one, but it is vulnerable to corrosion. That is one unalterable fact: funds for new transportation materials are limited.

Another unalterable fact is that CCS project operators are unlikely to have the luxury of cherry-picking their clients. A large number of different industrial emitters at a given site will be needed in the initial stages to provide

"OGC Energy hopes that the ongoing efforts to decarbonise vital industry using carbon capture continues, and that its work enables greater adoption of the technology."



(Left to right): Dr Kyra Sedransk Campbell (Royal Society and EPSRC Dorothy Hodgkin Research Fellow at the University of Sheffield); Brad Healey (process engineer); Mark McLeod (mechanical engineer); Dr Ivan Gutierrez (CEO and founder of OGC Energy); Epameinondas Skountzos (research assistant at the University of Sheffield); and Matthew Kitchen (research assistant at Materials and Engineering Research Institute).

sufficient CO₂ to make a CCS project viable and so open up the market. Some industrial processes inevitably produce some of these toxic or potentially corrosion-inducing substances in their waste gas streams – even seemingly innocuous substances such as the amino acids found in multivitamin supplements.

Counting the cost

Depending on the composition of the aggregated waste gas, the break-even cost of purifying will vary from site to site, OGC Energy notes. But the emitters need an incentive to invest in removing the impurities. At the moment, the carbon emissions allowances, although on an upward price trajectory, are too cheap, being only £75/tonne at time of press.

Another obstacle is that industry cannot rely on sufficient quantities of acceptable CO₂ to lower the concentration of harmful impurities in the export pipeline, as the operating periods of the different emitters cannot be synchronised. Some of them work round the clock, while others, such as gas-fired power plants, turn on and off to compensate for renewable energy production variations.

So if there is no economic way to limit the input of acids or to strengthen the pipeline, what remains are regulatory levers, such as a widening of the tolerances for

"As energy engineers, it is vital we all play our part to reduce the climate impact of our industry and continue to innovate and solve the problems facing the energy transition."

impurities. This is the domain of the offshore regulator North Sea Transition Authority (NSTA) and the onshore Health & Safety Executive. But with regard to pipeline integrity, there are only guidelines, not regulations. It will be up to the NSTA to make the operators responsible for identifying any risk to pipelines and the best practice, says OGC Energy.

OGC Energy hopes to foster more confidence in engineering solutions used for CCS. But it also hopes that prohibitive impurity limits, almost impossible to monitor, are relaxed. This will result in more industries seeing carbon capture as a viable solution to reducing their emissions. Using its links to the ISO work groups, OGC Energy hopes this work can help bolster efforts to create a meaningful carbon capture pipeline standard, reducing uncertainty and reassuring health and safety authorities that pipeline integrity is managed effectively.

Acid test: DECIDE

OGC Energy envisaged DECIDE – DEFINE CO₂ Impurities: Decrease Emissions – as a way to address the corrosion concerns in the industry. Taking the form of a lab-based experimental study, DECIDE has designed a novel flow apparatus and design of experiments, supported by two UK universities: Sheffield and Sheffield Hallam University. A fractional factorial design focusing on key impurities such as NO_x, SO_x, H₂O and O₂ will form the initial experiments, with flexibility in the system allowing for specific impurity mixes to be tested in later experiments. The flow apparatus will monitor the flow and give detailed information to the researchers for analytical study.

Using this data, OGC Energy expects to produce a list of “red-card” impurities: those which have an excessive effect on the behaviour of corrosive activity in pipelines. One example of this may be NO_x which has a severe oxidising effect, driving the production of harmful acids.

The purpose of the project is to identify these impurities and their limits as well as allow for the relaxation of limits for those impurities which will not cause catastrophic corrosion events. Alongside this, a greater understanding of corrosive events taking place could allow for relaxation of material requirements and increase confidence when repurposing pipelines for carbon capture.

Current understanding may lead the reader to ask why the gas cannot be dehydrated: dry carbon dioxide is benign in pipelines. But research performed below the water saturation point of CO₂ still shows corrosion taking place, and the carry-over of certain impurities may lead to greater likelihood of aqueous phase formation.

This research work is also necessary because of the wide range of impurities expected from different emitters and industries where carbon capture is essential; or the chances that off-specification gas will enter into the

OGC ties up with Gas Liquids Engineering

OGC Energy has allied with Gas Liquids Engineering (GLE), an industry leader in the area of CO₂ processing and sequestration. In a September 16 statement they said the direct connection between GLE’s expertise in process modelling of CCS systems, and OGC Energy’s unrivalled experience in the assessment of corrosion risks associated with CCS projects, will provide the industry with integrated, expert solutions to carbon capture challenges.

CCS projects need to manage complex engineering risks in order to broaden their processing capabilities, provide cost-effective solutions such as repurposing of old pipelines, as well as meet strict regulatory requirements.

OGC Energy’s CEO Ivan Gutierrez said that combining their collective 60-odd years’ experience would “fill the global existing gap by offering a full package of engineering services relating to CCUS projects requirements.... We have proven our companies’ capabilities to the industry and our eagerness to undertake unique projects and this alliance is the key for us to explore new opportunities.”

GLE CEO Stuart MacKenzie said that CCUS systems typically contain water, CO₂, and flue gas contaminants having unique thermodynamics and special corrosion considerations, for which “we have a combined body of knowledge that will reduce system costs, and improve systems operations and longevity.”

system during upsets. By having a system available to test the effect of impurity mixes, operators and emitters alike can feel confident in the integrity of their assets.

International collaboration

OGC Energy has approached this project with collaboration at the forefront, speaking with researchers in Sheffield, Leeds, and Norway. Reaching out to industry leaders across the North Sea, Europe and Canada, they aim to continue this collaboration.

It is also working on producing a standard with the International Association of Oil & Gas Producers, who, by virtue of its members’ expertise and reach, can work collaboratively with transmission system operators and governments.

Academic researchers and industry project leaders will play a major role ensuring the flow apparatus is



The OGC team at work.

"Solid formation from impurities such as ammonia could lead to carbamate, salt and other damaging substances building up in the pipeline, further affecting the long-term integrity of pipelines and equipment."

constructed, calibrated, and validated to a high standard, keeping experimental results repeatable and meeting scientifically rigorous standards. OGC Energy is also reaching out to organisations which would have space suitable to house the experimental set-up in the long term, allowing experiments to continue uninterrupted and continue to serve CCS operators long after the initial experiments finish.

Global efforts to reduce climate change are underway, and work needs to continue if we are to meet targets, OGC Energy says. It hopes that the ongoing efforts to decarbonise vital industry using carbon capture continues, and that its work enables greater adoption of the technology. "As energy engineers, it is vital we all play our part to reduce the climate impact of our industry and continue to innovate and solve the problems facing the energy transition," it says.

OGC Energy is a technical authority on corrosion and material selection for sour service, founded in 2014 by Ivan Gutierrez to give simple and straightforward materials advice to the energy industry. Questions about DECIDE can be directed to Mark McLeod:

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Fennex: nothing succeeds like success

Digital solutions company, Aberdeen-based Fennex, is preparing for a period of significant growth after seeing the energy sector's interest in its technology increase steeply this year.

Since being named Most Innovative SME at the OEUK Awards in 2021, has gone on to secure new contracts, enter new international markets and increase its headcount by more than 40%. Most recently, it relocated to the city's centre for digital excellence, ONE Tech Hub, to facilitate its further expansion.

Its game-changing digital technology Behaviour Based Safety Solution (BBSSM) went on to secure further numerous prestigious innovation awards and industry recognitions, cementing its reputation as a trailblazer in digital transformation technologies for the offshore energy sector.

"Digital technology is the fastest growing business in the UK and Fennex is playing a key role in enabling the energy sector to accelerate its digital transformation," said Nassima Brown, the strategy director at the company.

She told OEUK that winning its award last December was a catalyst for the growth and attention that it is now attracting.

"Things changed almost overnight for us after we won the award. Fennex's CEO, Adrian Brown, has held senior roles in global engineering and energy firms and worked internationally in the industry with a strong connection to the sector. But winning the award was the springboard we needed to get people to sit up and pay attention to the results that we're delivering for big players in the industry.

Spotting the gap in the market

"We came in to bridge that gap between the old world of files and the new world of digitisation."

"Having worked for larger corporates, we have seen just how complex processes can become across enterprises. And, while organisations often know they have an issue, it can be difficult for them to articulate just what it is or what they need to solve it. That's where our team comes in. By combining our knowledge of the industry and smart, cloud-enabled technology, we use the latest coding techniques to enable companies to make the most of their digital technology – helping them solve their problems faster.

"We came in to bridge that gap between the old world of files and the new world of digitisation. We are successful at combining industry knowledge: the digital solutions that existed were ill-fitted to the different legacies such as HR and policies. And operational and business processes differ from country to country. Our customers see us as very quick to assess their needs and to provide scalable and easy-to-use solutions."

The company was launched six years ago by Adrian Brown who has worked in the energy sector for over two decades – holding international leadership positions with major energy services companies and a drilling operator. He was joined in 2022 by Nassima who has also held senior engineering, sales and marketing roles for a global services company.

One of the company's first projects was digitising offshore rigs' start-up processes. From there it expanded to support the digitisation of asset integrity and on to the streamlining and digital transformation of broader business processes. Other projects have included project-managing the first of a series of new-build deep-water drill ships for Transocean.

It was the exposure to asset operations that led the company to develop a ground-breaking digital solution to behaviour safety which has now been implemented across Noble Corporation's teams.



BBSS gains traction through ease of use

BBSS is Fennex's intellectual property and is a good example of machine learning, digitisation and contextualisation. Workers both on and offshore can identify a potential hazard and log it in real-time using any device such as a tablet or a mobile by simply scanning a QR code or sending a voice message.

"In hazardous environments, multinational teams need to be able to communicate and share data quickly and effectively but it's something many companies struggle with. We provide the tools for organisations to break down barriers, better collaborate, bring their teams together and enable them to participate in one of the most critical processes of any hazardous industry.

"BBSS digitises what remains to this day a largely paper-based exercise of safety report cards. These are not only cumbersome to complete but are hugely time-consuming for the data to be recorded and analysed. With our tool, an executive in Houston can log on to the BBSS page and see all the risks inputted across an asset, region, or enterprise, in various languages, and contextualised in English," added Nassima.

The solution was developed in partnership with Noble, which was already a client, and saw workforce engagement with health and safety initiatives increase by 30%, cut the hours required to collate the data by 15,000 hours and reduce overall costs by 70%.

Data submitted from one rig in one country could reveal a bigger pattern of failure only in combination with other data about other rigs. The software works in 30 languages - and anyone who has used Google Translate professionally over the past few decades will have noticed the dramatic improvement in the fluency of the target language and the almost complete elimination of blanks.

"Rigs move around the globe and so the composition of the workforce also changes. There could be 20 nationalities on a rig in the North Sea but then it moves elsewhere with a different crew speaking a different mix of languages. BBSS helps to break down barriers by making it easier and quicker for risks to be reported and that information to be collated. The earlier the message is delivered, the sooner it can be assessed, and any necessary action can be taken," said Nassima.

"In hazardous environments, multinational teams need to be able to communicate and share data quickly and effectively but it's something many companies struggle with."



Following the success of the BBSS, Noble is continuing its collaboration with Fennex as part of the drilling company's planned merger with Maersk which will see it expand its digitisation capability to integrate Maersk's assets. The merger will create the biggest drilling contractor in the world.

Transferability to the energy transition

As well as its obvious benefits to the oil and gas sector, Fennex sees potential within other high-risk environments including offshore wind and carbon capture and storage (CCS). Both these sectors rely on HSE and asset integrity compliance and the platform has been developed to address these. In relation to that, Nassima has been appointed an executive director of the Aberdeen Renewable Energy Group (AREG), which is focused on positioning the northeast as a world-leading centre of excellence for the production and use of renewable energy.

"We're not talking about the energy transition for fun: we make work more effective, saving on resources, and reducing the carbon footprint. Our ambition is very real. We want to create a place for Fennex and my role in AREG is proof of that. We are part of the conversation

about the energy transition and net zero. We know digital will have to play a critical role in that. We are positioning ourselves to play that role.

"As a drilling engineer, I can sit down with a company's CCS team and draw on decades of oil and gas experience. The way for the renewable industry to survive and drive the transition is for it to be extremely lean and cost effective. Digital technology will be a cornerstone," says Nassima.

Weather monitoring platform

As an ambitious and innovative company, Fennex is constantly exploring new ways that it can use technology to provide the energy sector with insights to drive performance. Its newest solution, EWM™ (Extreme Weather Monitoring), integrates cutting-edge metocean forecasts and models, operational constraints and live risk-analysis data into a cloud-based digital solution for each offshore asset, to support fast decision-making where time is in very short supply.

The platform is in development and is expected to attract demand from international markets – specifically those where operators face the threat of forced sudden platform closure during hurricanes and cyclones.

Noble Corp's HSE director Barry Quinn holds the 2021 OEUK Business Innovation award, with Nassima Brown (right) and other members of the Fennex team.



Fennex says its technologies could be applied to the entire offshore energy sector, including fixed and mobile production facilities, CO₂ injection into underground structures offshore and offshore wind assets.

The digital transformation of the energy industry will play a central role in driving performance and Fennex is ideally placed to support that journey, explains Nassima, “Prior to the pandemic, the energy sector was lagging behind other industries in terms of its digital maturity but, over the last two years there has been a major acceleration of digitisation in all aspects of operations.

“Organisations are increasingly understanding that cloud technology not only provides a much more flexible way to scale technology and break down silos but provides the ability to enhance how they access actionable insights through the use of machine learning and artificial intelligence – it’s only through cloud-hosted solutions that they can achieve that. We see that as the future. And today, if you are not in the cloud wagon, you will be left behind. These things only exist in the cloud,” she concludes.

“Today, if you are not on the cloud wagon, you will be left behind. These things only exist on the cloud.”

Founded in 2016 by oil and gas international professionals with over 25 years global industry experience, Fennex is an innovative tech company, a trailblazer with a passion to speed-up the digital transformation within the energy sector.

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AIS Survivex expands its training reach and scope

AIS Survivex has grown to become the UK's largest energy sector training provider, delivering skills and competency training to more than 125,000 delegates annually.

The company AIS Survivex, has seen business increase as training opportunities in the renewable energy, construction and marine sectors have added to revenues from its traditional oil and gas business.

It has been expanding quite significantly and more growth is coming, the company's vice-president for global sales, Gavin Taylor, told OEUK in an interview. This year alone in the UK, AIS Survivex has committed to several projects, most recently a new offshore emergency fire-fighting training centre in a joint venture with Vital Fire Solutions (VFS) and County Durham and Darlington Fire and Rescue Service (CDDFRS), as well as expanding internationally with new facilities in Guyana and Qatar, through the 3t EnerMech joint venture.

The energy transition needs to happen, he said in an interview with OEUK, "but the pace needs to be considered, in terms of jobs, costs and energy security. It is a complicated picture and people need to be better educated about it."

The son of a Sunderland collieryman, he appreciates that cutting out one major source of strategically vital energy supply can only be done when there is a reliable back-up from another. Back then, it was coal to gas. This makes the just transition a critical balancing act, where there is sufficient dispatchable energy available to meet demand, while other technologies achieve the necessary reliability and capacity.

**"The energy transition needs to happen, but the pace needs to be considered, in terms of jobs, costs and energy security. It is a complicated picture and people need to be better educated about it."
– Gavin Taylor**

"Aberdeen needs to manage the transition carefully and find alternative jobs," he says. As renewable energy growth forces more flexibility and puts more pressure on distribution networks, more opportunities will open up. He sees this as a potential new area for growth.

AIS Survivex takes an innovative and technology-driven approach to training - evident in a recent training project for global energy giant BP on the Greater Tortue Ahmeyim gas production and export project offshore Senegal and Mauritania.

Using immersive virtual reality and digital twins, BP operations and maintenance personnel spent up to three weeks in AIS Survivex's Aberdeen centre as part of a project induction, familiarising themselves with the safety-critical features, operating systems, and asset infrastructure for the offshore facilities. So, when they eventually deploy to the project, they will be able to quickly navigate their way around the asset, know where all the critical control systems are and be fully familiar with the operating parameters of key equipment.

"The feedback has been overwhelming. As a result of all this groundwork, they will be much better prepared for first gas," he said. It is not possible to put a value on the savings that this work entails but the equipment aboard the FPSO is expensive to run and to maintain so having a high level of preparedness will support efficient operations.

The operation is also important for the host countries who will share in the revenues from gas exports and domestic market development.

What has been particularly satisfying to see, is after the initial trepidation at the new learning technology being used in the programme, the candidates have become experts in using it and have really embraced the blended learning style.

"Across our business, technology-led solutions like this allow trainers to assess the trainee's competence to deal with the kinds of difficult operations that are part and parcel of energy production such as fire-fighting, lifting operations, well control and well intervention. Training programmes using virtual reality and simulators enable trainees to react to incorrect procedures so that they learn from mistakes too, in a safe environment.

"The more people are able to practice for real operations in realistic and immersive, yet safe environments, the more we can reduce downtime, increase efficiency and experience fewer safety-related incidents," Gavin continues.

In addition to its work with BP, AIS Survivex has been involved in several other high-profile projects this year alone.

Investing in life-saving training

AIS Survivex has invested almost \$1mn in lifeboat simulator technology at its training facility in Aberdeen Harbour.

The company is the first in the world to offer OPITO-approved lifeboat training for coxswains both practically in the harbour and virtually via a simulator



**“Across our business, technology-led solutions like this allow trainers to assess the trainee’s competence to deal with the kinds of difficult operations that are part and parcel of energy production”
– Gavin Taylor**

Transforming training with technology

AIS Survivex is part of the 3t Energy Group, which also includes Bournemouth-based simulator manufacturer, Drilling Systems and technology company, 3t Transform.

Formed in 2018, the Group's aim is to transform the global training landscape through technology to help the energy sector work smarter, safer and more efficiently.

There are three pillars to its approach:

- In-person training in how to deal with conventional hazards, technical training and offshore survival;
- Technology solutions, covering training management, competency management
- Blended learning techniques; and immersive simulation, using a range of high-tech simulation technology, the sort of apparatus common in the aviation sector.

3t Energy Group is active globally, with operations in the USA, UAE, Saudi Arabia, Qatar and Guyana – where it recently opened the first OPITO approved training centre as part of its joint venture with Enermech – 3t Enermech.

Established in 2021, 3t EnerMech delivers world-leading training and competency solutions encompassing a blend of traditional training, digital learning technologies and training compliance management platforms.

The South American country of Guyana is home to the giant Starbroek, Liza and other recent offshore oil finds and it is 3t Enermech's first major replication of its infrastructure in another country. It is a big statement of intent, Gavin Taylor said. While the centre underlines the company's commitment to oil and gas, it will also provide support in training engineers in operating and maintaining future renewable energy infrastructure, chiefly wind.

3t Enermech is looking for other opportunities for expansion: not only geographically but also in the kinds of skills it offers.

**“We are delighted to become the partner of choice for military personnel looking to successfully transition their skills into the global energy sector”
– Linzy Ryan**

for free fall and twin fall escape scenarios. It can mimic all weather and natural light conditions. Training for all eventualities like this builds competency and improves safety standards, it said.

AIS Survivex centre manager in Aberdeen, Jamie Purves, described the technology as a “major investment in our Aberdeen facility and underlines our continuing commitment to both the oil and gas and marine sectors to provide innovative training solutions, which build a competent and safe workforce.”

Jobs for ex-military

AIS Survivex has sealed a deal with the British Forces Resettlement Service (BFRS) to support those looking to work in the global energy sector after leaving military life. Set up by the Armed Forces, BFRS works with companies across the UK looking to hire, retrain and offer career advice to the armed forces community leaving service (see box).

AIS Survivex is now BFRS' partner of choice, helping former military personnel retrain for new careers, particularly in the renewables sector.

Ex-forces personnel with a Level 3 qualification, particularly those with an electrical or mechanical



engineering background, are often well suited to offshore life: military training has prepared them for a hazardous and stressful career, sometimes with nobody immediate to hand to chat to.

But it is one that also offers rewarding friendships with the colleagues on whom they have to rely when the going gets tough. “Army experience is exactly what is needed when you are working on a wind turbine,” Gavin said.

BFRS director of operations Neil Dean said the two entities wanted to “lead the market in transitioning ex-military into new and meaningful energy sector careers through the launch of Military2Energy, which is specifically designed to filter people from the military to careers in energy.”

AIS Survivex’ head of marketing Linzi Ryan said: “We are delighted to become the partner of choice for military personnel looking to successfully transition their skills into the global energy sector.”

Well-control training centre

AIS Survivex has opened a well-control Centre of Excellence in Newcastle. This is to give delegates an alternative venue, recognising that delegates come from all over the British Isles.

The Newcastle site will deliver scheduled level 3 and level 4 International Well Control Forum-approved courses. It will help meet strong local demand for training, which has so far meant a special trip to Aberdeen. On any given day, the split between the two centres is 250 in Aberdeen and 150 in Newcastle, Taylor says.

Well control certificates are mandatory for drilling and associated personnel working in the oil and gas industry. Every two years they need to be renewed to show well-control competency skills are up to date.

In a June 7 statement, the company’s general manager for England Emma Howorth said: “We are delighted to add well control training to the extensive course portfolio at our Newcastle site to give our customers even more choice of where to train.”

She added: “This investment demonstrates our

continued commitment to the oil and gas sector and will help to cement AIS Survivex’s world-class reputation as a key one-stop destination for energy sector training.”

Ex-Army engineer switches to wind

Former British Army mechanic Jack Taylor has scooped a full-time renewable energy job with Correll Group four weeks after completing the AIS Survivex ‘Military to Wind’ training programme. He will work on fibre-optic cable installation.

“I feel incredibly lucky. It’s all been a bit of a whirlwind – within just two months I’ve completely changed careers and am now looking forward to setting foot on my first wind turbine,” he said.

“Army life doesn’t work well with family life – especially with us both serving. We agreed the best option was for one of us to leave and pursue a different career,” he said. The wind sector sparked his interest as it is growing fast and needs mechanical engineers. “It seemed like a great option,” he said in a November 22 announcement.

And so after a decade’s service, Jack spent three weeks at AIS Survivex, where most of the course was funded. He is now waiting to mobilise to a wind project. “I can’t thank AIS Survivex and Correll Group enough for helping me to make this exciting life change,” he said.

Correll Group said former military personnel were perfect employees. “They are renowned for being proactive, hard-working and able to think on their feet in often remote areas,” it said.





It's a jungle out there - but the Net Zero Technology Centre has a very reliable map

Luca Corradi, the head of Aberdeen's Net Zero Technology Centre's new division, talks *OEUK* through the complexities of decarbonising production on an industrial scale and how two new business units can help clients to achieve their goals

The world is on a mission to decarbonise and the sectors responsible for greenhouse gas emissions are starting to diversify. Some oil and gas companies, or the countries where they operate, are routinely building in carbon capture into their field development plans, for example. But there are many ways to approach even that technology and cost-effective improvements are often possible. But which ones?

And for the rest, the global shift towards alternative renewable and net-zero emissions energy requires more than pledges. Organisations must embrace new and emerging technologies and embed them into their operations as a matter of routine, if they are to achieve net zero emissions. This is the view of the director of the Net Zero Technology Centre (NZTC)'s newly created Services division, Luca Corradi.

"There is often a fear of new technology. A fear of being an early adopter, flanked by unknown risks on one side and higher costs on the other. This was evident when early wind and solar technologies were being touted: sceptics were quick to point out the wind doesn't always blow and the sun doesn't always shine," he said, on the eve of his presentation at COP27.

"The technology landscape is vast and continually evolving. However, that evolution isn't moving fast enough. In its *Net Zero by 2050* report, the International Energy Agency stated that 'in 2050, almost half the reductions [will] come from technologies that are currently at the demonstration or prototype phase.'"

Corradi continues: "We know what needs to happen, but we need to put the mechanisms in place and take action so that it does.

"It may seem that every other day the UK government is announcing a multi-million-pound investment to accelerate the development of green technologies. There's no denying investment in clean energy technology is increasing. The IEA's *World Energy Investment 2022* report shows that investment around the world, mainly in clean energy, is set to rise.

However, the report also states that this projected capital spending is falling significantly short of solving the climate crisis and making our energy systems more sustainable and secure.

"Increased investment in clean energy technologies, economies of scale and regulatory certainty help to de-risk technology and bring down costs. But organisations are faced with a balancing act, with one eye on decarbonising and the other on revenue generation and growth."

With this in mind, NZTC this autumn launched Net Zero Technology Services (NZTS). Two new solutions accompanied the launch: Technology Roadmapping and Technology Due Diligence, both powered by the Net Zero Technology Services proprietary NetZeroTS™ database.

The Technology Roadmapping solution provides organisations with assets that emit a lot of carbon with

Offshore renewables plus storage may help decarbonise a platform's power generation. Other technologies address venting, flaring and fugitive emissions.

"As energy engineers, it is vital we all play our part to reduce the climate impact of our industry and continue to innovate and solve the problems facing the energy transition."

unmatched insight and foresight into proven, emerging and future technologies across zero-emissions power and zero routine flaring venting and fugitive emissions. It determines which innovative technologies can be adopted and deployed – and when – across assets to help achieve decarbonisation goals.

Technology Due Diligence provides the insight that investors need if they are to make better technology investment decisions. It ascertains the legitimacy of a technology, its true technology readiness level, any gaps in its readiness and scalability and how investable it is.

Corradi says: "This is an exciting time for NZTC as we expand our offering and capability with the launch of Net Zero Technology Services and its associated solutions. We're responding to market demand with organisations asking for specific and bespoke insight on innovative technology."

Over the last six years the NZTC has assessed thousands of new technologies and supported hundreds of projects to develop and test technology. "We can see what is missing and what is working, what is scalable and whether the developers' plans will be enough to bring an idea to market in five years or ten," he says. "And we know what is available and what is on the horizon, not just here in the UK but worldwide. We have a unique perspective, scanning thousands of technology prototypes. So we have a good idea of what is likely to proceed to market and when it might be available.

"Once we have identified the technology and considered whether it could be adopted for a client's asset, we work on the approach to take. The roadmapping exercise tells the client what technology would work best, and what percentage of emissions it could expect to cut and over what timeframe. It also gives an indication of its likely cost.

"The Technology Roadmap is also an instrument to show financial, regulatory institutions and other stakeholders that the net zero plan is 'roadworthy'. For the organisations that have their own in-house teams producing their own roadmap, we provide them with

validation. For example, with one client we reviewed a number of their own roadmaps and we advised them what could be done to improve them. We identified some emerging technological innovation that was missing from their plans.

"Every asset is different, so what might be the best solution for one offshore asset will not necessarily be the best for all. Assets off the west of Shetland will have different geography, subsea conditions, weather and infrastructure from those in the southern North Sea, for example.

What the UK pavilions can learn from COP27

Corradi had been at Sharm El Sheikh in Egypt to present the latest Net Zero Technology Centre's international report on the technologies and the innovations needed to decarbonise oil and gas basins. He was struck in particular by the way that non-state actors are driving private-sector initiatives. Japan's pavilion for example combined the discussion agenda with a show-case of net zero emissions technology innovations. These included carbon capture and use, hydrogen production, solar energy and so on. Corradi would like to see this template adopted by the Scottish and the UK pavilions at COP28 next year, showcasing some of the technologies that NZTC has supported through their development and testing stages.

The words of UN Secretary-General António Guterres, calling for a choice between a "Climate Solidarity Pact or a Collective Suicide Pact", helped to drive home a breakthrough Loss & Damage fund, but a lot more needs to be done to accelerate the transition. The endorsement of "low carbon energy" in the final text makes for even more and faster adoption of decarbonisation technologies by the industry, and that is an area where NZTC's Technology Roadmap can help.



“Offshore renewables combined with storage solutions might help with decarbonising a platform’s power generation, while other technologies address venting, flaring and fugitive emissions. Some of these emissions will be very hard to eliminate, particularly in legacy assets. But these could eventually be offset, perhaps by direct air capture or some other carbon-removal activity,” he says.

“For industry, decarbonising operations and understanding the viability and readiness of technology is complex. We break that complexity down helping asset owners leverage technology and investors take the guess work and risk out of their next technology investment.”

"Once we have identified the technology and considered whether it could be adopted for a client's asset, we work on the approach to take."

NZTC recruits experts for well decom tech

Harbour Energy, ConocoPhillips, Spirit Energy and Repsol Sinopec have joined the Aberdeen-based Net Zero Technology Centre’s well decommissioning collaboration initiative.

Actively supported by the Technology Leadership Board (TLB), the North Sea Transition Authority (NSTA) and Offshore Energies UK (OEUK), the initiative will enable multi-operator collaboration field trials of new technology – both offshore in the UK and onshore in some international locations. The result will be faster, lower-cost trials and wider industry adoption in the UK and beyond. They are committed to funding five technologies each year, each having at least three trials in the field, the NZTC said in its November 29 announcement.

Wells represent almost half (46%) of UKCS decommissioning costs, or an estimated £20bn spend over the life of the basin. Technology best practice and innovation has a key role in helping operators reduce the cost and the associated emissions.

The goal is to have a minimum of six technologies successfully qualified and adopted by year four of the collaboration.

NZTC develop and deploy technologies that reduce emissions, unlock the full potential of an integrated energy system and propel the energy industry towards a digital, automated and decarbonised future.

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