Spring 2026

# SPE Review London

The official e-magazine of the SPE London branch

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## Enabling riserless subsea wireline interventions: A step change

- Industry insights for students
- A Decade of Modernization (following a 111-day blowout): SPE DL Lecture
- Bridging the classroom and the field at Expro Fluid Analysis Centre

Plus: News, SPE events, local and international

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# SPE Review London

The official e-magazine of the Society of Petroleum Engineers' London branch

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The Society of Petroleum Engineers (SPE) is a not-for-profit professional association whose members are engaged in energy resources, development and production. SPE is a non-profit professional society with more than 156,000 members in 154 countries, who participate in 203 sections and 383 student chapters. SPE's membership includes 72,000 student members. SPE is a key resource for technical knowledge related to the oil and gas exploration and production industry and provides services through its global events, publications, training courses and online resources at www.spe.org. SPE London section publishes SPE Review London, an online newsletter, 10 times a year, which is digitally sent to its 3000+ members. If you have read this issue and would like to join the SPE and receive your own copy of SPE Review London, as well as many other benefits – or you know a friend or colleague who would like to join – please visit www.spe.org for an application form.

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# In this issue



## FEATURES



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# Behind the Scenes: SPE Review Editorial Board

**Elizaveta Poliakova, Editor in Chief**

Elizaveta is a Senior Petroleum Engineer at Trident Energy, now in Operations after 5.5 years in Subsurface. She holds an M.Sc. (Imperial College London) and a B.Sc. (University of Leeds), and has served SPE for 9+ years - President at Imperial and Leeds, Board of SPE YPs, and Chair of SPE London in 2022/23.

**Ffion Llwyd-Jones**

Ffion is a senior business editor and writer, with a BA Honours in Environmental Studies / Language, and a Business/Corporate Communications degree from York University in Toronto, Canada. She is also edX certified for ChatGPT.

Ffion has extensive writing and editing experience in the technology, health, automotive and environmental sectors.

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# Letter from the Editor

Dear SPE London members,
Welcome to the Spring 2026 issue of SPE Review London. This edition brings together SPE London updates, student activities, and technical learning.

We start with a short look at **News Digest** (*page 6*) covering recent developments across the industry, including Equinor and Eneco's gas supply agreement, Serica Energy's management update, Canada and Alberta's pipeline-related carbon pricing deal, Santos' Pikka project on Alaska's North Slope, and TotalEnergies' Mediterranean exploration MoU in Egypt.

A strong part of this edition is focused on students and early-career development. We cover the **SPE London Pub Quiz**, which brought together around 25 participants from across the industry and gave members a chance to meet in a more informal setting (*page 7*). We also feature the **SPE London career talk and workshop at Coventry University**, delivered by Farid Hadiaman and Omer Khoshnaw, with practical sessions on recruitment, assessment centres, technical interviews and professional communication (*pages 8–9*).

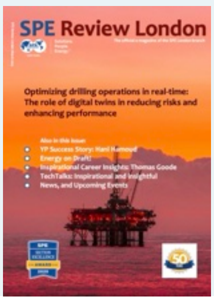
The student theme continues with the **Coventry University Student Chapter visit to Expro's Fluid Analysis Centre in Readin**g. The visit gave students direct exposure to fluid characterisation, CCE and CVD analysis, gas chromatography, CCUS applications and the link between laboratory work and production performance (*pages 11–12*).

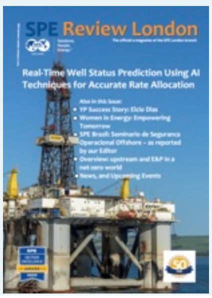
On the technical events side, we include a write-up of **Alan Walker's SPE Distinguished Lecture, A decade of modernization following a 111-day blowout**, focused on the Aliso Canyon incident, subsequent regulatory response and the importance of safety culture, root-cause analysis and management of change (*pages 13–14*).

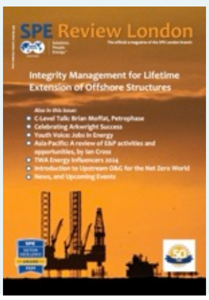
Our main technical feature is **Enabling riserless subsea wireline interventions: A step change** (*pages 15–28*). The article reviews the evolution of offshore drilling and subsea production, the challenges of subsea well access, limitations of conventional grease injection systems, and the development of a greaseless wireline subsea intervention system using polymer-locked cable technology. It is a detailed read, but a very relevant one for anyone interested in subsea well intervention and reducing the cost and risk of accessing subsea wells.

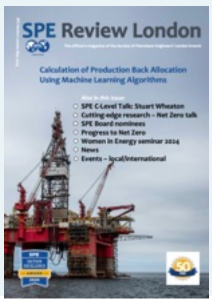
**Finally, thank you to everyone who contributed to this issue. If you have a technical article, event write-up, case study or practical lesson from the field, please send it through. We are always looking for content that is useful, grounded and relevant to SPE London members.**

Warm regards,
Elizaveta Poliakova




# NEWS DIGEST... NEWS DIGEST... NEWS DIGEST


## Second deal for Equinor and Eneco

Dutch energy firm Eneco and Norway's Equinor signed a five-year gas supply agreement in May.

The company says the the agreement to supply Eneco's German subsidiary, LichtBlick, covers an annual volume of 2.2 terawatt hours (TWh), or 0.2 billion cubic metres (bcm) per year, until 2030.

"As long as gas is still needed, we are taking targeted measures to reduce emissions as much as possible," said Jonas Beck, director of green energy markets at LichtBlick.

He added that the contract also strengthened the company's security of supply in geopolitically uncertain times.

Read more

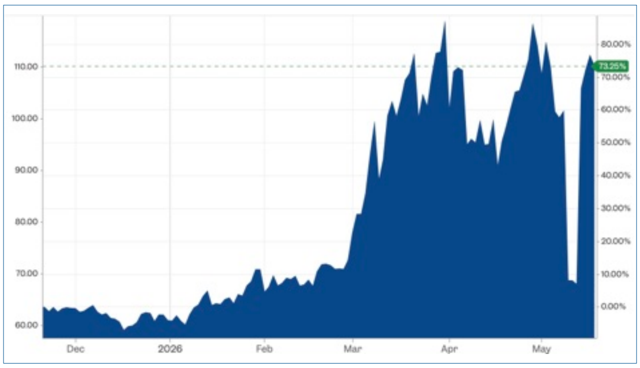
## New CEO at Serica Energy


Scott McGinigal

Serica Energy has appointed Scott McGinigal as chief operating officer.

Current COO Mike Killeen is taking on a new role as West of Shetland asset manager.

Read more




**Oil (Brent) 110.03 (+0.33) (+0.30%) on 19 May 2026**
[52-week low: 58.72/52-week high: 126.41]
(Credit: Business Insider)

## New oil pipeline in 2027

Canada and the province of Alberta recently agreed a carbon pricing deal that could result in construction of a new pipeline starting in 2027.

The deal builds on the memorandum of understanding they signed in November that outlined conditions for federal support of a crude pipeline to the west coast to serve Asian markets.

Read more

## First oil on Alaska's North Slope

The Santos Pikka project on Alaska's North Slope has begun oil production.

Initial output is set to plateau at 80,000 b/d by the third-quarter 2026.

Read more

## Expanded Mediterranean exploration

TotalEnergies has signed a memorandum of understanding (MoU) with state-owned Egyptian Natural Gas Holding Co for hydrocarbon exploration in the Mediterranean Sea.

In a statement, TotalEnergies said: "The MoU covers a large area located in the north-western offshore of Egypt. The MoU establishes a framework for technical cooperation including preliminary exploration and subsurface evaluation activities."

Nicola Mavilla, TotalEnergies senior vice president for exploration, said, "This agreement will support the assessment of Egypt's deep offshore exploration potential."

Read more

# Industry insights for students: Positive spirit at our fourth student event in London


The SPE London Pub Quiz, in March 2026, was a well-attended and successful event, bringing together approximately 25 participants from across the industry. The group was made up of a broad mix of both early-career and experienced professionals, contributing to an inclusive and engaging atmosphere.

Attendees were divided into five teams of varying sizes, fostering a relaxed yet competitive environment. The quiz consisted of 20 questions spanning a range of topics, encouraging both technical knowledge and general trivia.

The team 'You're a Quizard Harry' emerged as the winners with an impressive score of 14 correct answers. The team, made up of members from Ocean Wall, not only claimed the SPE London 2026 Pub Quiz trophy but also generously bought drinks for all attendees, adding to the positive spirit of the evening.

The event concluded with informal networking and conversation, with many attendees providing positive feedback on both the format and atmosphere. Overall, the pub quiz served as an effective and enjoyable platform for strengthening professional connections within the SPE London community.

# From graduates to professionals: The SPE London career talk and workshop

**SPE London Section recently continued its annual tradition of delivering the Career Talk and Workshop for its student chapters, hosting a new batch of ambitious talent at the SPE Coventry University Student Chapter on Friday, April 17, 2026. Delivered by SPE London's Farid Hadiaman (Performance Advisor, bp) and Omer Khoshnaw (Reservoir Engineer, INEOS), the workshop moved beyond theory into the real world of energy industry recruitment.**


## Mastering the recruitment landscape

The workshop started by showing how the recruitment application structure differs between companies, contrasting the structured assessment centres of the large supermajors with the CV-led technical interviews of independent operators.

It also emphasised the power of networking through professional events and LinkedIn.

Students were challenged to move beyond their CVs to sell their 'unique value proposition' (USP), with live role-playing using the STAR (Situation, Task, Action, and Result) method. They learned that an interview is about demonstrating leadership and integrity, rather than just providing a scripted 'correct' answer. The workshop also featured two assessment centre exercises, with Farid as lead assessor, providing the high-pressure, responsive feedback typical of formal recruitment settings.

The highlight was an export strategy simulation. Students were tasked with solving a commercial and environmental puzzle, with safety in mind. By the final exercise, students were presenting risk-weighted business cases as junior consultants.

## Building a professional foundation

The session emphasised that while technical knowledge is the foundation, the ability to articulate that expertise with confidence is what secures the role.

We saw an impressive ability among the students to absorb feedback and then pivot their professional delivery to meet industry standards.

We extend our sincere gratitude to **Dr Babatunde Anifowose**, the **Student Chapter Committee**, and the **students** for their incredible energy and coordination. If the adaptability we saw in that room is any indication, the future of our industry is in capable hands.

**NOTE: To our industry members: Help us shape the future of energy by connecting with the workforce of tomorrow.**

The SPE London Section is committed to maintaining this bridge between the classroom and the field. The talent entering our industry today is highly motivated and technically diverse, but they value the context that only experienced professionals can provide.

If you are interested in supporting our student community — whether by sharing your own career lessons, participating in a panel, or offering mentorship — we would welcome your involvement. It is a simple, but impactful, way to contribute to the professional development of those who will soon be our colleagues.

To get involved, please contact Omer Khoshnaw, the SPE London Student Liaison at khoshnaw.omer@me.com

# Women in Energy 2026: See you in September

**For many across the industry, June has become synonymous with the SPE London Women in Energy seminar at London South Bank University — a day that brings together professionals from across the energy sector for honest conversations, new connections and a reminder of the importance of inclusion, mentorship and leadership in our industry.**

This year, however, there will be a small change to tradition. The 2026 event had already been fully planned, with speakers confirmed and preparations well underway, when TfL announced London Underground strike action on the very same day: 17 June. As many attendees travel from across London and beyond, the organising committee felt it was important to avoid a situation where people might struggle to attend or spend the day navigating transport disruption instead of enjoying the event itself. Rather than compromise the experience, the decision was made to move Women in Energy 2026 to September. **The team is currently finalising the new venue and date, which will be announced shortly**.

For those unfamiliar with the seminar, **Women in Energy** has been running for more than 15 years and has grown into one of the UK energy sector's most recognised networking and inclusion events. Entirely volunteer-run and not-for-profit, it brings together engineers, geoscientists, managers, students and senior leaders to discuss career development, leadership, diversity and the evolving future of the energy industry. While the event focuses on improving gender balance across the sector, it has always aimed to create an open and collaborative environment, with strong support and participation from both women and men.

The continued success of the seminar is only possible thanks to the support of industry sponsors. This year's sponsors include: Platinum sponsor: **bp**; Gold sponsors: **London South Bank University**, **Harbour Energy**, and **Baker Hughes**; Silver sponsor: **tNavigator**; and Bronze sponsors: **Serica Energy**, **TRACS**, **Westwood**, **Boston Consulting Group**, **Perenco**, **ONE-Dyas**, **Shell**, and **CNOOC**.

We are also continuing to welcome additional sponsors. If your company would like to support Women in Energy 2026 and help us keep the event accessible to students and early-career professionals, please get in touch at spelondon.wie@gmail.com.

**Stay tuned — the new September date and venue will be announced very soon, and we look forward to welcoming the industry together again for another inspiring and memorable Women in Energy seminar.**

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# Bridging the classroom and the field

**For students, the transition from theoretical equations to physical fluid behaviour is a pivotal moment in professional development. Recently, the SPE Coventry University Student Chapter undertook an industry visit to Expro Fluid Analysis Centre (FAC) in Reading, bringing complex reservoir concepts to life in a tangible, high-tech environment.**

## The science of fluid behaviour

The day centred on the critical role of fluid characterisation in operational success. **Neil Winkworth**, Expro's Global Fluids Product Line Manager, shared insights from his career journey, moving from the lab bench to global leadership. He guided the students through the sophisticated parameters Expro analyses to support its industry partners, including Constant Composition Expansion (CCE) and Constant Volume Depletion (CVD).

A key takeaway for the students was Winkworth's emphasis on the dynamic nature of fluid properties: "There's no such thing as a set GOR of a fluid; in reality, it's entirely dependent on the conditions, the intended operating environment, and the inherent reservoir conditions." This statement underscored why rigorous lab analysis is inseparable from production performance.

## Innovation and the energy transition

The visit also showcased Expro's forward-looking commitment to sustainability. **Michael Langford** delivered an exposition on Carbon Capture, Utilization, and Storage (CCUS), covering $CO_2$ capture, treatment, and quality assurance. The students engaged in stimulating discussions regarding CCUS feasibility and the pivotal role fluid analysis plays in making these solutions genuinely implementable at scale.

The technical discourse was further enriched by **Gemma Jones** (SPE London Section YP Committee), who provided a vital perspective on reservoir flow simulation. Her contribution highlighted how fundamental fluid characterisation is, whether for traditional production or modern injection scenarios to ensure accurate modelling and safe operations.

## Collaborative milestone

The tour of the facility operations provided the students with a unique view of gas chromatography and chromatographic processes in action. It served as a powerful reminder of how the industry remains resilient and relevant by grounding innovation in fundamental science.

The SPE Coventry Student Chapter would like to express its sincere gratitude to the entire **team at**

**Expro's Reading laboratory** for offering their hospitality and sharing their expertise so generously. We also extend our thanks to the outstanding lecturers, Dr Babatunde Anifowose, Dr Enobong Bassey, and Dr Sally Funmi Olasogba for their tireless guidance and oversight in planning this trip.

Finally, this transformative experience was made possible through the support of the SPE London Section, with special thanks to **Yasir Mumtaz** (Chair of Young Professionals) and **Omer Khoshnaw** (Student Chapter Liaison) for their essential work in coordinating and facilitating the visit.


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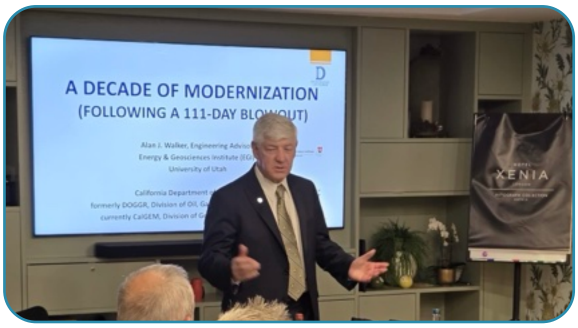
To get involved, please contact Omer Khoshnaw, the SPE London Student Liaison at khoshnaw.omer@me.com

# SPE Distinguished Lecture: A decade of modernization (following a 111-day blowout)


**The SPE Distinguished Lecturer (DL) Program is a prestigious SPE initiative that selects top industry experts to share their knowledge on energy trends, challenges, and technical innovations with SPE members globally through presentations at local section meetings.**

On May 6, the SPE London Section hosted **Alan Walker** from the Energy & Geoscience Institute (University of Utah) to talk about the incident at Aliso Canyon in October 2015.




The largest methane leak from a natural gas storage facility in US history was discovered by Southern California Gas Company (SoCal Gas) at the SS-25 well in its Aliso Canyon Storage Facility near Los Angeles. The date was October 23, 2015.

The blowout continued for 111 days and the well was permanently plugged and abandoned after emitting approximately 5 BCf of natural gas and extracting the failed casing to approximately 890 feet subsurface. The failure was the topic of lengthy reports by US DOE and DOT, and root-cause analyses by Blade Energy and California state agencies.

Alan Walker was in his first week as a Supervising Petroleum Engineer of the Californian Division of Oil, Gas, and Geothermal Resources (DOGGR) when the leak was discovered. He was selected to be DOGGR's emergency response technical lead.

In that role, he provided regulatory oversight for seven kill attempts, relief well drilling, the control-cement-confirm operation, requirements to return the facility to service, and the development of storage operation regulations.

Alan gave a frank discussion of the blowout and the five-year effort to improve integrity of underground storage. He motivated the audience to develop a safety culture, including management of change, root-cause analysis – and to 'Never Waste a Crisis'.

**Alan Walker** is an Engineering Advisor at the Energy & Geoscience Institute (EGI), University of Utah. He counsels staff supporting geothermal, hydrocarbon, and carbon research. Alan's career spans 40 years of E&P engineering, regulatory affairs, and natural gas supply and storage throughout western North America. He served nine years in the US Army and is a retired Army Reserve Special Forces colonel with over thirty years' service. He served three combat tours in Afghanistan, the Philippines, and Iraq. Alan has a B.S. in military engineering from West Point, an MBA from Rensselaer, and an M.S. in Petroleum Engineering from Utah.

# Enabling riserless subsea wireline interventions: A step change

**All wells will likely require some form of well intervention during their lifecycle to optimize and maintain their production output. To be able to perform an intervention, well access itself is a critical element to the planning and safe execution of operations. Perhaps sometimes regarded as mundane, this can quickly be complicated by being in a remote location, lack of access to appropriate equipment to be able to rig up over the well, the length and diameter of the intervention string itself, the well state and more. Nowhere has this become more apparent than when intervening on subsea wells, whereby the wellhead is submerged on the surface of the seabed, which brings significant additional cost and risk to operators.**

**This paper will cover the global growth of subsea well stock and discuss the importance this has in today's energy mix. The complexity of subsea well access will be discussed and a brief history of enabling technologies will be provided. The paper will then specifically explain the issues with wireline open watersubsea interventions and how they bring specific challenges to this environment. A new greaseless wireline subsea intervention system will be described and how it can overcome such issues. The system comprises of already existing polymer locked wireline cable technology and its integration in a new subsea intervention pack off that can then be incorporated into subsea intervention lubricators. A successful field test of the system will be presented and the results of the campaign provided. The paper will conclude why such systems should become the default methodology for performing such operations, bringing new levels of operational confidence and certainty for all stakeholders.**

Authors: Matt Billingham, John Paterson, Daniel Steen Haase Soarensen, and Alhadi Zahmuhl, SLB, Aberdeen, Scotland;Ian McDaniel, SLB, Houston, Texas, USA; Gregory Orih, TotalEnergies, Aberdeen
 DOI 10.2118/231398-MS
This paper was prepared for presentation at the SPE/ICoTA Well Intervention Conference and Exhibition held in The Woodlands, Texas, USA, 24 - 25 March 2026

## Evolution of offshore drilling technology

Throughout history, whenever access to easily recoverable oil has become constrained by depleting reserves or other limiting factors, the oil and gas industry has responded by pursuing more challenging and remote resources. As onshore reserves became less economical or viable, it was a natural progression for the industry to target nearshore reserves that extended beneath water bodies from known land fields.

The initial steps toward offshore exploration were modest. The first ventures occurred in shallow lakes adjacent to existing land-based production facilities. In 1897, the Summerland Oilfield in California marked a significant milestone when drilling commenced offshore from a 300-ft pier equipped with a cable-tool drilling system (American Oil & Gas Historical Society 2025). The first well produced the following year, prompting the construction of an additional 14 piers in response to this success.

By 1911, the industry advanced beyond pier-based operations. Ferry Lake #1, drilled on Caddo Lake in Louisiana, represented the first well without a direct land connection (American Oil & Gas Historical Society 2025). Floating pile drivers, supported by tugs and barges, enabled the construction of offshore platforms, and the well achieved a production rate of 450 barrels per day.

The 1940s saw exploration extend farther offshore in the Gulf of Mexico, though early efforts were hindered by hurricane damage. A breakthrough occurred in 1947 when Kerr-McGee commissioned Brown & Root to build a freestanding platform 10 miles offshore, the first structure out of sight from land. Sixteen 24-inch piles were driven over 100 ft into the seabed, which was approximately 20 ft deep. As a result of this, during this period, the Kermac #16 well produced 480 barrels per day and ultimately yielded 1.4 million barrels by 1984 (American Oil & Gas Historical Society 2025).

Post-war demand for oil accelerated the need for deeper offshore wells, driving technological innovation. In 1954, the industry introduced Mr. Charlie, the world's first mobile offshore, semi-submersible, self-sufficient drilling platform, capable of operating in water depths up to 40 ft. Another notable advancement was the DeLong-McDermott No. 1 jackup rig, designed for Humble Oil, which incorporated spud cans beneath its legs for enhanced stability.

By the late 1950s, jackup rigs evolved to operate in water depths of up to 100 m. The 1960s and 1970s ushered in deepwater semi-submersibles and dynamic positioning systems, exemplified by CUSS I, a vessel equipped with four azimuth thrusters and designed to drill surface cores for the Mohole Project (Guertin, Doyle and Peixoto 2024). By the end of the 1970s, drilling in water depths of 1,000 ft was achievable, and by the 1990s, operations extended into deepwater environments ranging from 3,000 to 5,000 ft.

Technological advancements have continued, enabling drilling in water depths exceeding 10,000 ft. Although such operations are costly, they are justified by the prolific production achieved from these wells.

## From drilling to producing

Drilling a well offshore is inherently complex, but producing hydrocarbons from that well introduces even greater challenges. Production must be transported to shore, and the associated infrastructure must be robust enough to endure throughout the entire life of the field.

Early offshore facilities relied on wooden pilings and superstructures, but their limitations quickly became apparent. From the 1930s through the 1970s, steel jackets became the foundation of offshore platforms. By 1953, approximately 70 platforms operated in water depths of up to 70 ft. The Bullwinkle platform later set a record with a depth of 1,353 ft, effectively pushing the limits of steel jacket technology, even after the development of compliant towers (Mayfield, et al. 1989).

As water depths increased, new technologies emerged. The introduction of tension leg platforms (TLPs) in the 1980s marked a significant advancement, with the first being the Hutton TLP in the North Sea (Stokes, Koon and Thompson 1996). As an aside, one author recalls there being a fish tank in the Hutton recreation room on which had been drawn two pen markers indicating if the rig heave movement was too high to rig up wireline. TLPs extended the water depth envelope to approximately 5,000 ft, replacing the steel jacket with tension lines anchored to the seafloor and to the platform at surface. Deballasting the platform put the lines under tension and holds the platform in place. Production was primarily transported to shore via pipelines, while spars facilitated tanker loading, reducing transportation costs once infrastructure was established. Spar platforms themselves further expanded operational depth to over 7,000 ft, eventually leading to Floating Production Storage and Offloading (FPSO) facilities, which significantly reduced the capital cost of building fixed platforms.

However, as exploration moved into deeper waters, the cost of surface-based infrastructure escalated dramatically. Fixed platforms resting on the seabed were generally limited to depths of around 400 m, accommodating surface-mounted Christmas trees. While TLPs extended this limit, the concept of placing the

Christmas tree on the seabed, a “wet tree”, gained traction. In the 1960s, subsea trees were considered niche, driven more so by innovation and necessity. Although water depths were shallow and installation was diver-enabled, the ability to tie back a subsea well to a nearby platform soon presented a compelling business case.

A Shell 1961 California project is widely regarded as the first subsea tieback, enabling development of a field too small to justify a platform and demonstrated the operators pioneering subsea engineering capabilities. Additional drivers accelerated subsea adoption, including harsh environments where locating equipment below wave action provided stability. By the 1980s, remotely operated vehicles (ROVs) began replacing divers in deeper waters, improving safety and enabling more complex subsea operations, a major step forward.

Standardization of hardware and cost reductions made subsea tiebacks increasingly attractive, particularly during periods of oil price volatility when capital expenditure control was limited. Subsea technology evolved from a niche solution to a mainstream development option. Advances such as electro-mechanical multiplexed control systems enabled longer tiebacks, while the introduction of horizontal trees, though sometimes associated with challenges such as crown plug interventions, coincided with the growth of TLPs, spars, and FPSOs.

Today, subsea systems are a cornerstone of offshore development. Offshore discoveries continue to occur in deeper and more complex environments, reinforcing the importance of subsea technology as a key enabler for modern offshore production.

## Subsea production challenges

*Figure 1*, below, illustrates the global number of subsea wells and associated production (Rystad, WellCube, Subsea Cube 2025). In 2000, approximately 1,900 subsea wells contributed around 6,000 kbbl/d of production. Today, this figure has risen to roughly 5,800 wells producing 15,000 kbbl/d, a seemingly impressive growth trajectory. With global oil production at approximately 102 mbbl/d, subsea operations account for about 15.3% of total output.

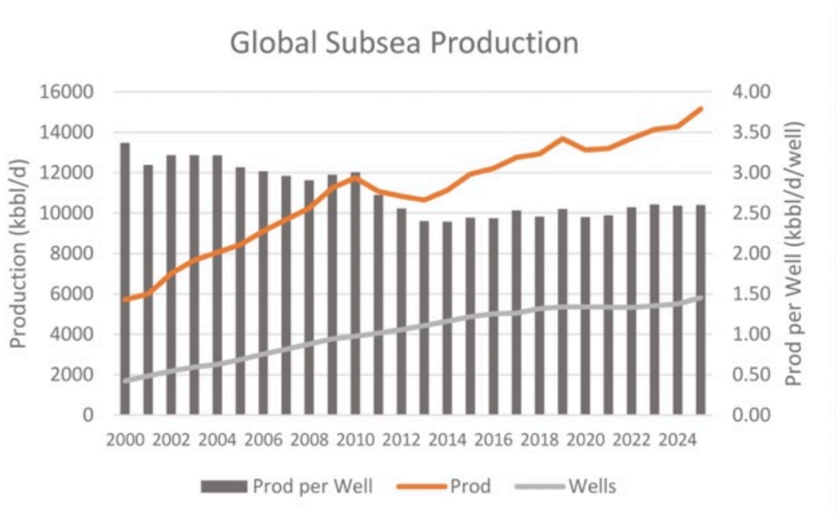



*Figure 1: Global subsea production*

To provide context, the prevailing narrative of modern oil and gas production often emphasizes growth driven by tight oil and unconventional resources, due to their relatively recent arrival and impact on global production. These many tens of thousands of wells collectively represent about 10% of global production, underscoring not only the significance of subsea and deepwater developments but also the prolific nature of these wells. Operators are increasingly driven to deeper waters as conventional resources decline, and while these ventures entail complexity and risk, they often deliver substantial production rates.

While aggregate data suggests strong growth in subsea production, a closer examination reveals concerning trends. Analysis of production per well indicates a significant decline: in 2000, average output was approximately 3.36 kbbl/d per well, whereas by 2025 this figure has fallen to 2.60 kbbl/d, despite an increase of roughly 9,000 wells globally. Deepwater wells exhibit a natural decline rate of about 16%, meaning that without continued drilling activity, deepwater production could fall to just 9% of current levels by 2050.

This decline is strongly influenced by aging assets, particularly in mature subsea regions. When isolating data for the UK, Norway, and West Africa—areas with long-established subsea developments—the trend becomes even more pronounced, as illustrated in the following figure (*Figure 2*).

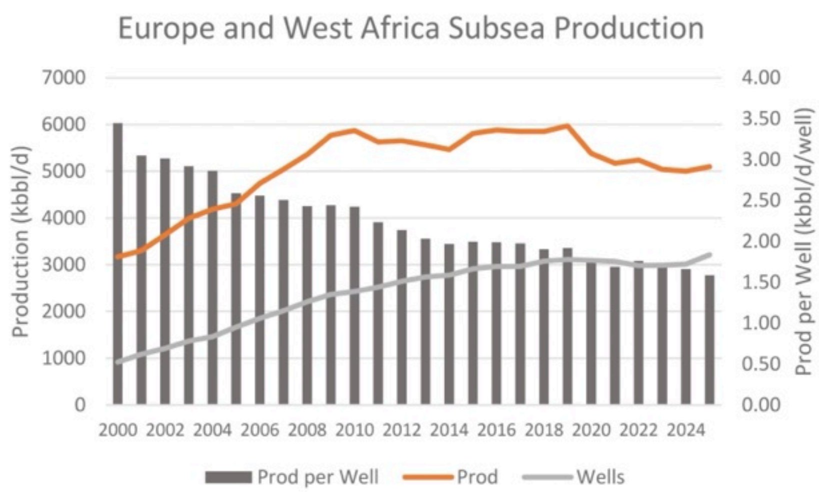



***Figure 2: Europe and West Africa production***

Analysis of these mature subsea regions reveals a clear trend: production levels plateaued around 2010 and began declining after 2019. Well counts stabilized in 2020, experienced a slight reduction, and may show a modest increase by 2025. The most concerning indicator is production per well, which has fallen by more than 50%—from 3.5 kbbl/d in 2000 to approximately 1.6 kbbl/d today. While these figures reflect regional data, the underlying challenge is global.

One approach to offset declining output is drilling additional wells; however, increasing water depths significantly raise complexity, cost, and operational risk. According to the International Energy Agency (IEA, 2025), the time from license award to discovery has lengthened from 4–5 years (1990–2020) to more than 7 years today, as exploration shifts toward frontier and remote areas. Annual oil and gas discoveries have fallen to roughly 9 mboe per year, a 60% decrease compared to the 2010s, and average field size has declined from 150 mboe in 1970 to just 40 mboe post-2010 (IEA 2025). Although these figures represent global trends, they underscore the growing reliance on deepwater resources.

Capital discipline further compounds the challenge. Global upstream expenditure has dropped from a peak of $850 billion in 2016 to approximately $600 billion today, reinforcing the need for operators to maximize existing assets. The case for well interventions is compelling (Billingham, 2023), and subsea interventions are no exception. Previous analysis demonstrated intervention costs of less than £5 ($6.75) per incremental barrel for dry-tree wells. In the UK, a typical dry-tree intervention costs around $1.35 million, compared to $5.2 million for a subsea equivalent. These economics create significant hurdles. For example, identifying a candidate well may require five production logs, costing $26 million before any incremental production is realized through an intervention, assuming it is successful.

Well access costs—primarily vessel mobilization for deploying intervention packages—account for approximately 75% of total intervention expenses. Operations are also considered high-risk, contributing to operator reluctance. This risk aversion, driven by concerns over jeopardizing existing production, is particularly acute for high-cost assets. Addressing these challenges requires a proactive industry response, with technology playing a critical role in reducing costs, mitigating risks, and enabling safe, efficient interventions.

## The evolution of subsea intervention systems

As discussed, the high cost of subsea well interventions remains a significant challenge. A reliable means of well access is essential, and historically, the standard solution involved deploying a drilling riser with a subsea landing string or a dedicated workover riser, both requiring a rig and incurring substantial expense. Concerns regarding intervention feasibility date back to the 1970s, when BP performed an intervention in the Upper Zakum field in 65 ft of water using a Flopetrol-designed subsea lubricator (OTC 5726).

Further developments occurred in the early 1980s, as documented in SPE 13975, which references an advancement of a system stated to have been deployed in the Congo, now using the Diver Support Vessel (DSV) Beryl Argyle and an OTIS lubricator. A cost comparison between a semi-submersible rig and a DSV highlighted significant savings: while operational time was similar once on location, the semi-sub required four days for mobilization and demobilization plus three days of operations, totaling $830,000. In contrast, the DSV completed the work in five days at a cost of $325,000, representing a $500,000 saving for a single well (Huber 1985).

In 1984, a subsea lubricator evolved from BP's earlier work and was successfully deployed beneath the Buchan Alpha production platform in 375 ft of water (OTC 5726). Building on this success, BP collaborated with Camco to further develop the equipment, which was deployed from the monohull DSV Stena Seawell in July 1987 at 600 ft water depth for safety valve maintenance. This operation included 10 slickline runs and an electric-line production log. Later that year, the Otis system was deployed in the Highlander field for Texaco, completing 32 runs, followed by consecutive operations on the rig Benverackie for Texaco.

By 1989, industry interest in subsea intervention was evident, as illustrated in the Advances in Underwater Technology journal, which described a conceptual system for deploying wireline tools from a submarine docked to a wellhead, though this concept never progressed beyond paper. In 1990, tests in the Gulf of Mexico involved running a small completion section from a platform to evaluate jarring capabilities (OTC 6460), though the absence of a subsea intervention lubricator (SIL) limited the validity of these trials.

*Figure 3* (overleaf) compares early SIL systems, such as those deployed beneath Buchan Alpha, with modern designs. In all configurations, the primary longitudinal length is occupied by the lubricator riser, which houses the wireline bottom-hole assembly above the wellhead while the valves below remain closed to secure the well. After the toolstring is guided into the lubricator by an ROV, the pressure-control head, designed to seal between the well and the wireline or slickline cable, is lowered through the water column and latched onto the lubricator. Once pressure integrity is confirmed through testing, the well valves are opened, and wireline operations commence.

## SIL challenges with electric line

This paper focuses on the upper end of the subsea intervention lubricator (SIL)—specifically, the point where the wireline or slickline cable enters the system. For clarity, the term wireline in this context collectively refers to electric line, braided line, slickline, and emerging technologies such as digital slickline and fiber-optic slickline.

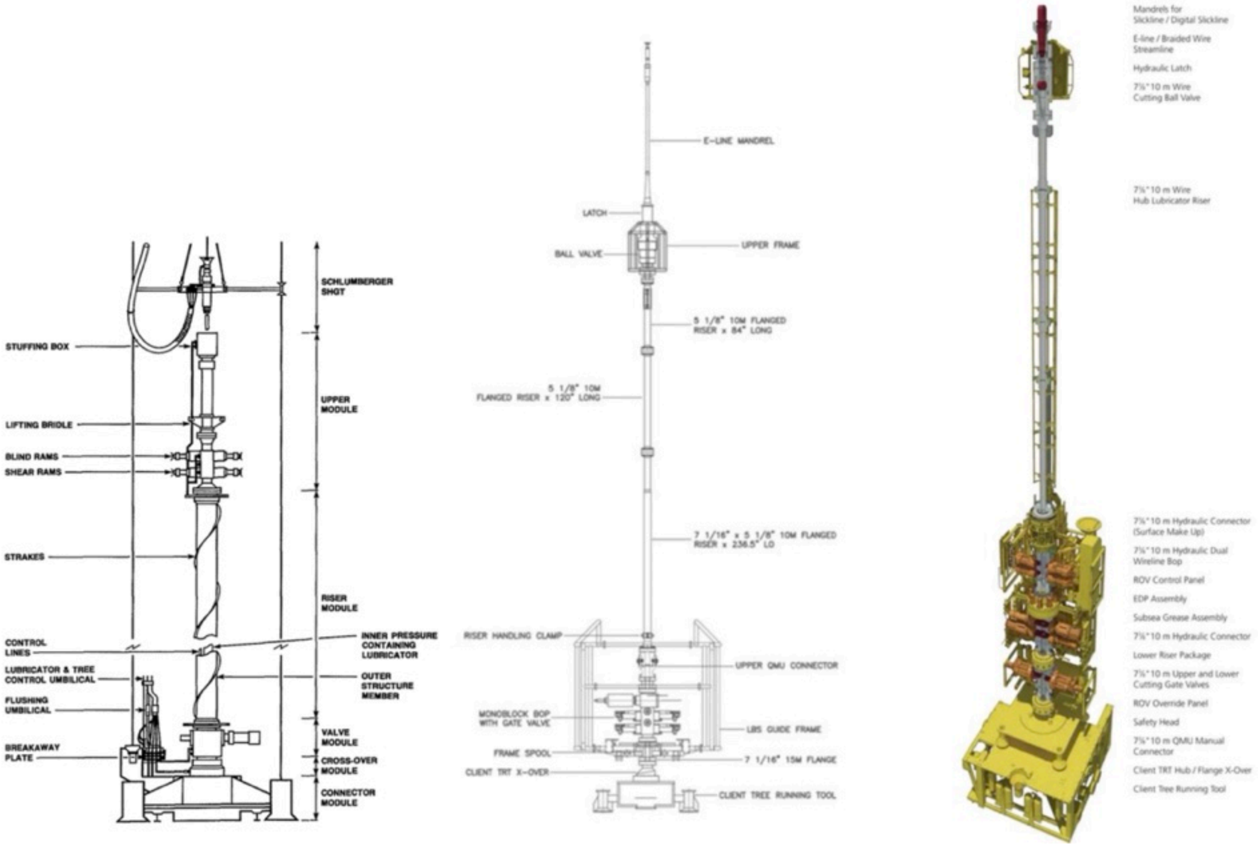



*Figure 3: Wireline subsea lubricator evolution*

The sealing interface for electric-line cables has seen minimal innovation over the past four decades and remains largely unchanged. This area is of significant concern for operators due to the risk of a stranded armor section on a standard electric line packing off below the sealing element, potentially necessitating cutting the wireline to resolve the issue.

The likelihood of such an event during slickline operations is considerably lower because slickline consists of a single solid strand, unlike wireline cables that incorporate multiple load-bearing metallic members. In braided line configurations, these members form the entire cable structure, whereas in electric lines they serve both as strength elements and circumferential armoring. This distinction is illustrated in *Figure 4*.

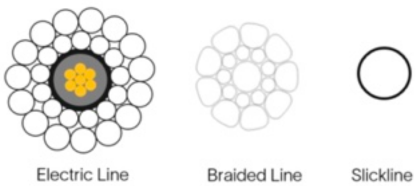



*Figure 4: Cross-section of various wirelines*

It is important to understand why electric lines can suffer from issues that can impact their use in all pressure equipment but are especially impactful when using a SIL system. To do this it is necessary to gain an understanding of the construction of an electric line and how that impacts its field use. An understanding is granted by looking at the different layers within the electric line and shown in *Figure 5*, overleaf.

A typical electric-line cable consists of a central copper conductor, which is coated with an electrical insulator designed to withstand downhole environments, including exposure to production fluids, gases, and brines. Surrounding this is an extruded mechanical protective layer, after which the armoring process begins. The first


***Figure 5: Electric line construction***

layer of metallic strands is helically wrapped around the cable core, followed by a second layer wound in the opposite direction. This counter-wound configuration is critical to cable integrity under tension.

Several parameters influence cable performance and suitability for wireline operations, including the diameter of individual armor wires, their material composition, and the lay angle of each layer. The opposing winding directions provide a locking effect when axial load is applied, preventing the cable from unwinding under tension. If both layers were wound in the same direction, the cable would simply unravel under load. Research conducted in the 1980s demonstrated that rope sockets were more robust during perforating operations when both inner and outer armors were engaged, reinforcing the importance of this design principle.

However, this opposing winding arrangement introduces a potential failure mode that can have serious consequences if not properly managed—a topic addressed later in this paper.

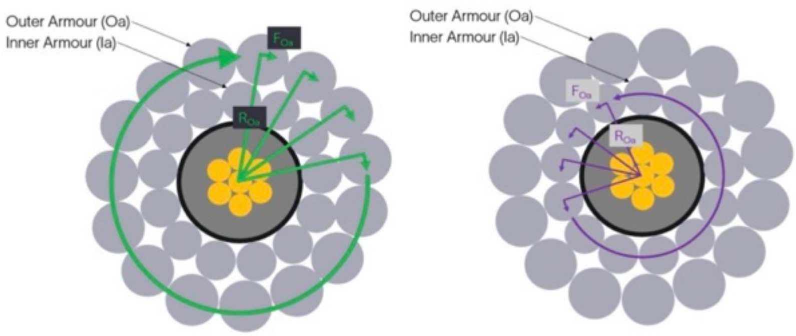



***Figure 6: Electric line armor torques***

When a wireline cable is placed under tension, each layer of armor experiences radial forces in opposing directions due to the counter-wound configuration. This results in torque moments around the cable's centerline that are inherently imbalanced. Because torque is a function of the radial distance from the center, the inner armor layer—being closer to the core—experiences less torque than the outer layer. Consequently, the outer armors bear a greater torque load, creating what is commonly referred to in the field simply as 'torque'. Experienced wireline operators are well aware of the operational challenges this can cause.

To mitigate these effects, new cables undergo a 'seasoning' process, during which they are run at reduced speeds to allow initial torque imbalances from manufacturing to normalize. Manufacturers strive to minimize torque during production, but practical field conditioning, such as running a new cable in a vertical well and performing proper pick-ups, remains the most effective method for stabilizing torque.

Seasoning also occurs during electric-line operations when the cable passes through a grease seal (discussed later in this paper). Over time, residual grease accumulates between armor strands, providing slight frictional resistance that helps alleviate torque. However, corrosion-resistant alloy (CRA) cables present additional challenges: their smoother surface compared to galvanized steel makes grease adhesion more difficult, reducing this mitigating effect. As a result, CRA cables require slower running speeds and are more susceptible to torque-related issues.

For all such cables, torque will start to become an issue as torque builds in the cable, a function of running speeds, cycling of the cable and the load on the cable. *Figure 7* shows a cable that was run too fast during a SIL operation in 2002 in the North Sea where torque has built up severely and high armors can be clearly seen.

Over time, torque can build and create what is known as high armors where, typically, one armor stands proud of the wireline package and can become an issue when running through the sealing mechanism used on pressure control equipment. As the armor is high it will see more wear during operations, to the point where it may part. It may also part as a function of wear but also especially when an attempt is made to pull it through the sealing mechanism. The issue at hand here is that the wireline operator will not know if this has occurred and only suspect it when the wireline tension starts to build too fast and is erratic. A whole 'bird's nest' of wire can occur below the sealing system, which is an issue enough on a dry tree but more complex when subsea, whereby the wireline crew can no longer start their normal stranded wireline recovery procedures. In this case, the only option is likely to cut the wireline with the SIL package, clear the well and come back to fish with a high-pressure riser. SIL lengths are typically restricted to 20m+ length and, hence, fishing is not an option most of the time.

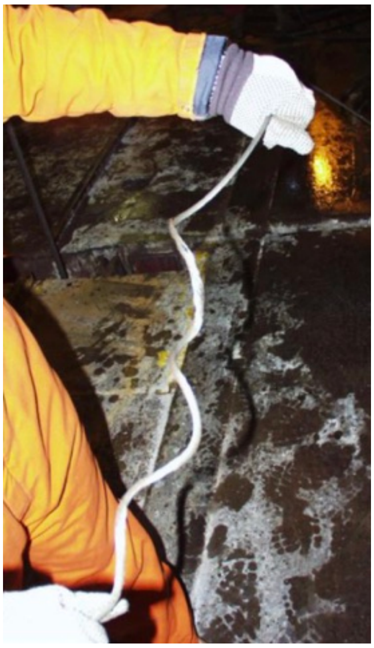


***Figure 7: Example of a torqued cable***

## SIL challenges with grease seal systems

Electric lines (and braided lines) require a more specialized seal system than for a simple one strand slickline. *Figure 8*, overleaf, shows a basic slickline system that would sit on top of a lubricator system, referred to as a stuffing box. Tightening up the retainer nut compresses the rubber packings against both the slickline cable and the stuffing box body. This prevents wellbore pressure from escaping from the system and maintains a dynamic seal against the wire. Section AA shows how there are no void spaces for pressure to escape through. The presentation is a little different from what would be seen on a SIL as there is no requirement for the sheave wheel and pressure to the packings will be controlled by a hydraulic piston, allowing for a variable

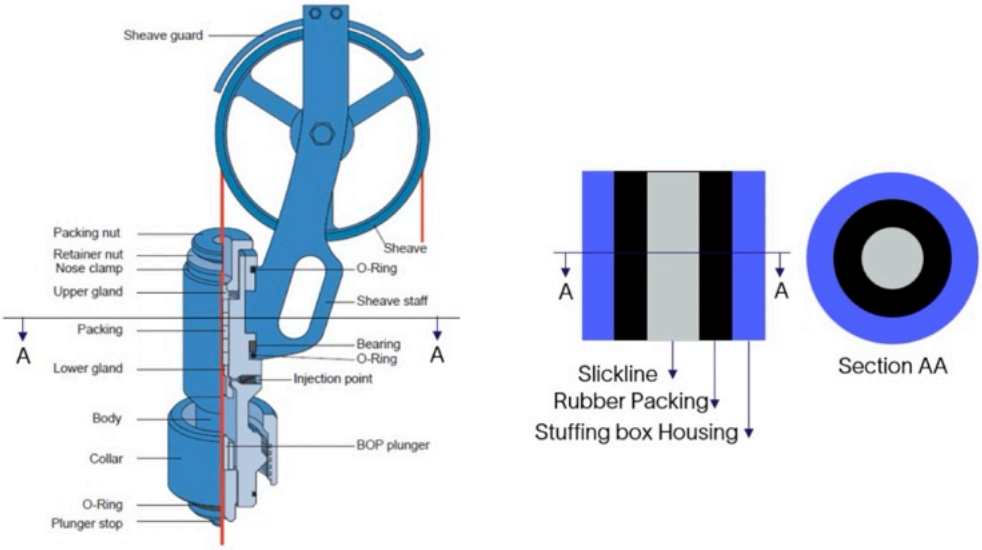



*Figure 8: Slickline pressure seal*

squeeze to be applied on demand. For instance, as the slickline runs through the packoff it will wear the packing and, hence, the activation pressure will need to be increased.

Such a system is simple and easy to use. Unfortunately, it cannot be used for electric line as there are interstitial gaps between the armors (as can be seen in *Figure 4* and *Figure 6*), which can provide a passage for wellbore fluids to egress from the SIL system. Gas finds it particularly easy to escape due to having near-zero viscosity. For this reason, electric lines require a completely different type of seal referred to as a grease injection head (GIH) as illustrated in *Figure 9*.

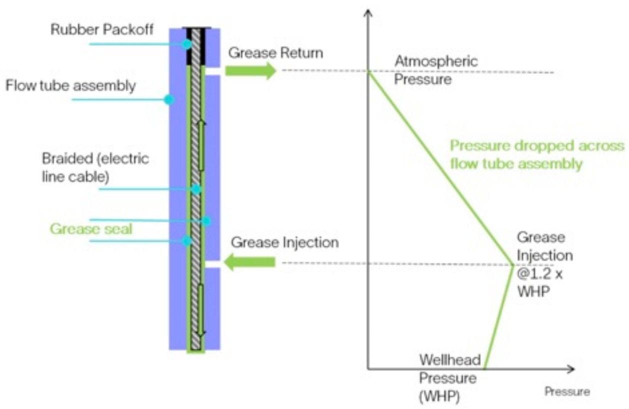



*Figure 9: Wireline grease injection head representation and principle*

In principle the electric line cable is fed through a series of close tolerance flow tubes. There is a typical clearance of 0.003" to 0.008" and, to put this into perspective, the thickness of a piece of paper is roughly 0.004", hence high wires due to cable torque issues can quickly lead to issues. Flow tubes must be precisely matched to the cable to be used and cable wear along the cable needs to be within the requirements of the desired clearance. Flow tubes are modular and can drop a certain pressure per tube, so for instance, if a tube can drop 2000 psi then 3 tubes would be required to handle 5000 psi well head pressure. One more flow tube is also required also to drop pressure to well head pressure, which is illustrated in *Figure 9,* above.

Wireline grease is injected into the flow tubes near the bottom at 1.2 times the well head pressure. This grease will flow both to the well and to a grease return point where pressure should have been reduced to atmospheric. A rubber line wiper will be used to remove any excess grease as the cable exits the system.

This can be represented by Couette's equation as provided below (*Equation 1*), and it can be seen that flow tube length, grease viscosity, and the quality of grease injected are important factors.

COUETTE'S EQUATION

$$P2 - P1 \; (\Delta P) = \frac{6 L u Q}{Rc\, h^3}$$

P2 = grease injection pressure @ flow tube
P1 = grease outlet pressure @ flow tube
**L = Length of flow tube**
**u = grease viscosity**
h = clearance between Flowtube & cable
Rc = cable radius
**Q = quantity of grease injected**

***Equation 1: Couette's equation***

Management of this grease control system is largely manual and reasonably challenging for routine surface based operations. In a SIL system this is compounded by the delivery of grease to the system which, for shallower depth (<600m), will be pumped from the surface vessel through hoses to the GIH. As the water depth gets deeper, friction losses pumping the grease through the hose, means higher and higher surface pressures are required, to the point where grease delivery is compromised. This is further exacerbated by subsea temperatures at the well head being near zero (or very low), meaning that the grease viscosity will be high. It is for this reason that, when we get to deepwater, grease is often supplied from vessels on the seabed but, on jobs where multiple wireline runs are required, their volume might not be sufficient. They can be refilled by ROVs but this operation is complex and takes time. The industry has managed this situation for 40 years and largely developed the expertise to be able to manage it. However, issues do still occur, which can prove very expensive and risky.

A light well intervention (LWIV) campaign in the Gulf of Mexico from 2022 to 2024 completed on 13 wells with 140 runs, of which 59 were electric line (Ramnath 2025). Three major issue areas were described, including loss of grease seal, dropped tools and stranded line. The paper is an excellent resource for planning deepwater SIL activities but, no doubt, elimination of the GIH, with the use of something more akin to a slickline system, would make the situation easier to manage.

## Existing cable systems to simplify pressure control

The issues seen with standard armored cables have been addressed some time ago and their benefits are well documented (Sarian 2019). Polymer-locked cable brings enormous advantages in risk reduction since all of the cable armors have been locked in place by a polymer filler and represented in *Figure 10*, below.

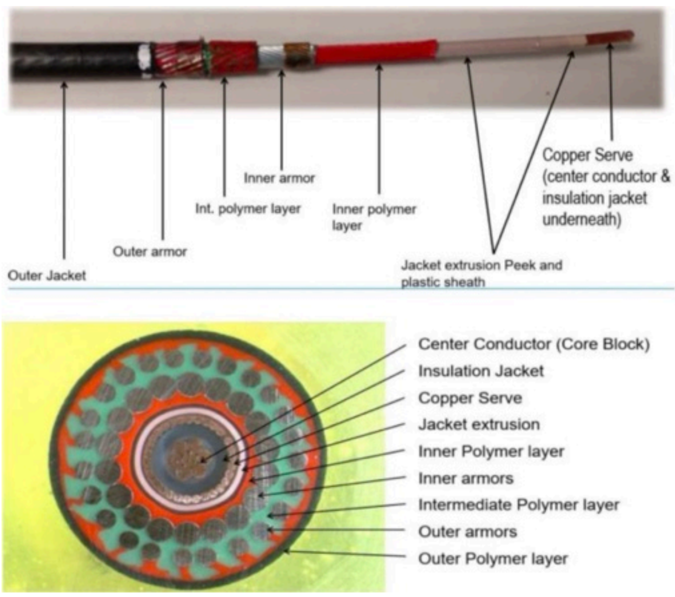



***Figure 10: Polymer locked cable***

Examination will show that the cable construction is quite different but the key benefits can be summarized as the following:

- No interstitial voids between the armors, no leak paths and the elimination of the need for a GIH.
- The armors are locked in place resulting in a 'zero' torque issue cable, eliminating conventional high wires.
- The cable has a better strength-to-weight ratio than conventional cables.
- The cable friction factor is approximately 30 per cent less than that of a standard galvanized cable, meaning a better overpull capability as more tension is transmitted to the cable head.

One could dig deeper into all the benefits of such a cable, but the two primary benefits in the SIL world are the possibility to eliminate the GIH with a simpler pack off system, and the elimination of torque issues meaning a much lower chance of a stranded wire. With such polymer locked cables in common use over many years, their application in SIL operations would seem obvious. A prototype pack off system was made in 2010 and trialed briefly in the North Sea. In this trial the system was used on a LWIV but the cable was never run into the well itself, with trials run only in the SIL on the wellhead. Some polymer-coated cable surface damage was seen but this was attributed to surface handling through the splash zone. The program was restarted in 2020 as the industry saw more focus on subsea interventions and the requirement for a more robust SIL offering.

## Subsea packoff design

The problem of sealing a polymer cable in motion has been addressed for years in jobs around the world with surface intervention pressure control equipment. Typically, this is done by deploying a cylindrical polymer piece with a central hole through which the cable runs. By squeezing or relaxing this packoff the contact pressure between it and the cable can be varied and a seal can be formed. A small amount of lubricating fluid is often used to avoid excessive friction but is not required to form the seal.

To enable subsea wireline intervention with a polymer cable, current surface dynamic sealing methods had to be adapted, improved, and tested to demonstrate readiness for the new environment. One new design feature that was implemented changed the packoff actuation direction to enable the wellbore pressure to assist in sealing. This allows relatively low actuation pressure to create an initial seal, keeping friction values low. As the wellbore pressure varies throughout a job, the force exerted on the packer, and the contact pressure needed for sealing, also varies.

Secondly, innovations adopted in the packoff design improved sealing, life, friction, manufacturing, and installation. For example, splitting the packer into two halves, adding stress relief features, and addressing the surrounding components that contain the polymer under pressure. Sealing at subsea pressures requires the ability to handle pressure above and below the packoffs. A new system designed to handle various operating conditions including hydrostatic pressure, wellbore pressure below hydrostatic pressure, pressure trapped between the packoffs, and others has been patented.

Additionally, the packoff system had to be marinized. Using extensive experience in other subsea pressure control operations, SLB designed the system for robust, reliable operation. A Technical Risk Categorization exercise identified the risk associated with each piece of this new equipment. Using the Technology Readiness Levels (TRL) from API Recommended Practice 17N: Recommended Practice for Subsea Production System Reliability and Technical Risk Management and API Recommended Practice 17Q: Subsea Equipment Qualification the equipment began at a TRL of 2. Following the manufacture of initial prototypes and testing the TRL advanced to 5 before deploying subsea.

As part of this qualification to TRL 5, the packoff system underwent a series of tests. A test demonstrated packoff sealing characteristics across the operating pressure range. Tests at low, continuous, and extreme exposure temperatures, of −1° C, 82°C, and 121°C (30°F, 180°F, 250°F) respectively, validated the packoff material's integrity under conditions more extreme than allowed by the equipment. A fatigue test consisting of 208 pressure cycles and 520 open/close cycles verified the reliability of the operating system against the expected service interval. To demonstrate functionality in hydrostatic service conditions, a hyperbaric test was deployed for 200 cycles at the equivalent of 3,048 meters (10,000 feet) of depth. The gas holding capacity of the packoff system tested up to 86.2MPa (12,500 psi). Finally, a packer friction test ensured free cable movement at operational pressures. *Figure 11* illustrates several of the packers after testing with 8,000 psi pressure simulating wellhead pressure and 200,000 ft of cable run through them at this pressure.

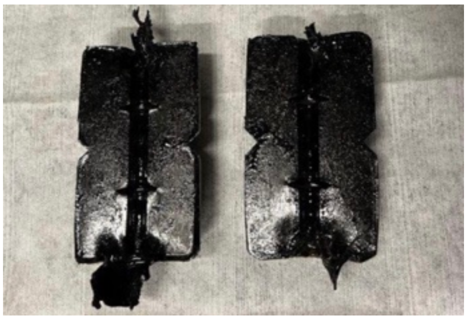


***Figure 11: Rubber packoffs after testing***

The standard for each of these tests came from the most appropriate published API standard at the time of testing. While API Specification 17G: Subsea Intervention Systems does not specifically address Riserless Light Well Intervention, the qualification plan adopted its recommendations for cycle counts and hyperbaric protocols. For material quality requirements, design constraints, proof testing, and marking, the packoff system referred to the foundational standard API Specification 6A: Specification for Wellhead and Christmas Tree Equipment (21st ed.). Other standards reviewed include API Technical Report 17G4: Subsea Intervention – Guidelines for Riserless Light Well Intervention (RLWI) System, which is still in development and does not specifically address pressure control heads designed to seal polymer coated cable. Additionally, because the equipment had an elastomer seal, which is most similar to the types of seals used in blowout preventers, the sealing characteristic and temperature testing followed API Specification 16B: Specification for Drill-Through Equipment – Diverter Systems recommended practices.

To ensure the integrity of the new design, Bureau Veritas acted as a third party reviewing a design approval package and issuing an Independent Review Certificate. Bureau Veritas also witnessed proof testing of all new bodies, and reviewed the manufacturing record book to verify quality compliance, finally issuing a Certificate of Conformance for each serial number.

The elimination of the need to pump grease through a GIH also enables more efficient deepwater systems with no need to top up subsea grease tanks. While a small amount of wireline grease is pumped, this is purely to lubricate the cable through the packoffs, and is a very small amount compared to when grease is used to make the dynamic seal in a GIH. Additionally, if there is a need to run an alloy cable (for sour environments, for example), then running speeds for the polymer locked cable will be much higher than the low speeds associated with such alloy cable due to their inherent torque issues throughout their field life.

## Field test candidate selection

As discussed, extensive qualification testing of the system was made prior to doing an actual field test. The packoff system can be adapted to run on various connections to SIL systems where routing of the hydraulic functions needs to be made. Several candidates were collectively chosen with the operator in the UK North Sea that were determined to be a good first test environment due to having suitable well head temperatures and pressure to commence the field test. Being in the UK sector of the North Sea, the packoff was interfaced with an interface mandrel that has been used for many years. The pack off system is represented (*Figure 12*) below, with the main elements labeled.

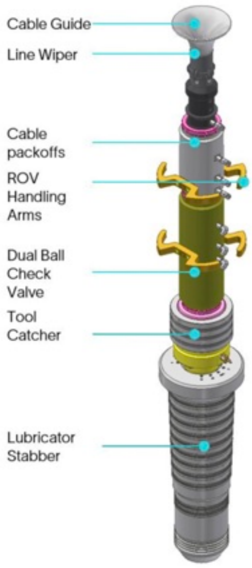



***Figure 12: Subsea packoff for use with polymer locked cables***

Of note, the system can be set up with either two or three sets of internal rubbers for individual packer sections within the packoff. Each can be individually actuated and, hence, a double redundancy is present when there are three sets of rubbers. There are two ball check valves in the case of cable parting and it being ejected from the packoff. The packoffs can seal against the well where there is sufficient overpressure compared to hydrostatic, and in the other direction if the pressure delta is in the opposite direction. The SIL stabber can be seen in *Figure 12* and the 'rings' represent individual hydraulic paths to interface the pack off functions to the SIL. The rubber packoff actuation was designed to apply a good seal with minimal hydraulic pressure and, hence, less pack off friction or drag applied to the cable. All the glands and rubber elements are split to enable a redress without removing the cable, meaning minimal time spent servicing the system during longer campaigns.

## Operational summary from field test

**First well operation**

The initial deployment was executed at a water depth of 112m and tubing hanger depth of 136m MD. This operation was planned in a low-risk well context, ensuring minimal complexity during intervention. The first deployment involved a camera investigation at the Horizontal Xmas Tree (HXT) with the Lower Crown Plug (LCP) in place, confirming well integrity. A dual pack-off configuration was utilized to maintain pressure control throughout the operation, ensuring redundancy and safety during toolstring manipulation. The mandrel was fully inspected and redressed following each deployment to gauge any wear and tear, and to inform maintenance protocols ahead of deploying in more challenging conditions.

**Second well operation**

The second intervention was performed under more challenging conditions, with a tubing head pressure of 850 psi, water depth of 113m, and wellbore measured depth approaching 3350m. The first deployment focused on multi-finger caliper and corrosion survey, providing essential data on tubular integrity. The second deployment introduced noise logging, leveraging advanced acoustic diagnostics to assess leak anomalies and completion integrity. Both deployments were successfully deployed by the subsea wireline intervention pack off system, which was used with with the lubricator system, enabling safe conveyance of long tool strings into the wellbore. The pack off's performance was validated through multiple pressure tests and operational checks, confirming its reliability under dynamic subsea conditions. As with the first well operation, a dual pack-off configuration was maintained, ensuring robust well control during logging and data acquisition phases. Across both wells, the mandrel demonstrated exceptional capability in facilitating complex wireline operations in a riser-less environment. Its adaptability and sealing integrity under varying pressure regimes underscore its critical role in modern subsea intervention campaigns.

## Concluding remarks

A new subsea greaseless wireline system for SIL operations had its initial field test with great success. With the benefits that can be demonstrated using polymer locked cables and a much simpler sealing system, as opposed to a GIH, the risk associated with running electric line operations or the risk associated with running such operations is effectively eliminated. This should provide operators with a much higher degree of confidence. Eliminating the need to pump grease through a GIH also enables more efficient deepwater systems with no need to top up subsea grease tanks. While a small amount of wireline grease is pumped, this is purely to lubricate the cable through the packoffs, and is a small amount compared to when grease is used to make the dynamic seal in a GIH. The system was used on two wells with a maximum wellhead pressure of 850 psi and water depth of 113m. On successful completion of the entire system field test, the system has the potential to become the default system due to the risk reduction and the efficiency gains it provides.

## References

American Oil & Gas Historical Society. 2025. *First Louisiana Oil Wells*. Accessed 2025. https://aoghs.org/petroleum-pioneers/first-louisiana-oil-well/

Billingham, M. B., Proud, F. J., and Ramondenc, P., (2023). *The Intervention Opportunity: Why the Industry Does Not Do More and How New Collaborative Workflows with Aligned Outcomes Can Change This*. SPE J. 29 (06): 3131–3144. SPE-212922-PA. https://doi.org/10.2118/212922-PA

Guertin, L., Doyle, E., and Peixoto, T., (2024). *Scientific Ocean Drilling: Exploration and Discovery through Time*. Penn State Pressbooks. Retrieved from https://psu.pb.unizin.org/sciod/chapter/cuss-1/

Huber, D. S., Turner, W., and Baxter. C., (1985). *The 'British Argyll' DSV Wirelining System*. Paper presented at the SPE Offshore Europe, Aberdeen. SPE-13975-MS. https://doi.org/10.2118/13975-MS

IEA (2025). *Implications of Oil and Gas Field Decline Rates*.

Mayfield, J.G., et al., (1989). *Installation of the Bullwinkle Platform*. Paper presented at the Offshore Technology Conference, Houston, Texas. doi: https://doi.org/10.4043/6054-MS

*Offshore – Piers, Platforms and Barges*. Accessed Nov 2025. https://aoghs.org/offshore-history/california-oil-piers/

*Offshore Petroleum History*. Accessed 2025. https://aoghs.org/offshore-history/offshore-oil-history/

Rystad Energy (2025). *Well and subsea cubes*.

Rystad Energy (2025). *WellCube, Subsea Cube*.

Sarian, S., (2019). *Mexico Operator Achieves HSE Incident Free Well Completion Program*. SPE-194253-MS. SPE/ICoTA Well Intervention Conference & Exhibition, The Woodlands, Texas.

Stokes, E. G., Ray Koon J., and Thompson, D. A., (1996). *Tailoring the TLP – Evolution and Adaptation of the Concept*. International Petroleum Conference & Exhibition of Mexico, Villahermosa, Mexico.

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**Mehdi Alem** is a Reservoir Engineer at bp with experience across the North Sea, North Africa, and the Middle East. A graduate of Imperial College London (MSc) and UCL (MEng), he has been active in SPE for over eight years and is passionate about the role subsurface plays in building a sustainable energy future.

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## SPE Review London Editor

**Elizaveta Poliakova** is a Senior Well Performance Engineer with subsurface background at Trident Energy. She studied Petroleum Engineering at Leeds (BSc) and Imperial College London (MSc) and has been involved with SPE for more than seven years. A former SPE London Chair, she previously led both the Imperial and Leeds student chapters.

## Net Zero

**Max Richards** is Group Business Development Manager at OPC, where he leads the energy transition practice and carbon storage projects.

He holds an MSc in Geoscience from UCL, where his research focused on $CO_2$ mineralisation in partnership with CarbFix and Aramco.

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**Yasir Mumtaz** is an experienced reservoir engineer who has worked with operators and in the service sector.

He is currently advancing CCS simulation projects while drawing on his background in production optimisation and

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**Khaled Al Marei** is Principal Reservoir Engineer at Storegga, with 20 years of experience in reserves audits and CCS subsurface modelling. He is passionate about professional development and supporting young geoscientists through education and mentoring.

**Alejandro Primera** is a Digital Operations Domain Champion at SLB. As a software developer, he enjoyed framing and executing ideas into apps solving complex problems. As an engineer he is is a keen learner of the challenges that energy transition will pose in the next few years.

**Frank Folorunso**
(more information coming soon)

**Hani Hamoud** is an Energy Consultant at Accenture. He works at the intersection of energy, commercial strategy, and the technology that's starting to reshape both. At Accenture, he advises energy clients on the problems where commercial outcomes, regulatory complexity, and emerging technology collide.

## Inter-society

**Carolina Coll** is Director, CCUS and Energy Storage, at Miller and Lents, with more than 25 years of global experience. She plays a leading role in international committees on reserves, CCUS, and energy storage, and has been a driving force in SPE initiatives.

**Malvika Nagarkoti** is a Business Development Director with Baker Hughes. She is a production optimisation and reservoir engineering leader with 17+ years of experience in delivering value across global oil & gas assets.

## Programme Chair

**Andrew Mynors** is VP Business Development Manager with Petram Group. He has a demonstrated history of working in the industry, and is an IT professional skilled in gas, petroleum, operations management, coaching, and pore Pressure Prediction.

## Women in Energy Chair

**Isabel Asenjo** is a Senior Reservoir Engineer at Sasol with 20+ years' experience in oil and gas developments and commercial evaluations, having worked in both oil companies and the consultancy sector. Her expertise is reservoir modeling, and she has contributed to a diverse studies spanning the life cycle of developments, from exploration and appraisal to development and field life extension in assets worldwide. A long-time SPE volunteer, she now chairs Women in Energy, encouraging a more gender-balanced workforce.

### Communications

**Afrah Siddique** is an energy professional with 10+ years international experience in reservoir engineering, oil and gas, $CO_2$ sequestration, geothermal energy and hydrogen storage. She holds an MSc in Petroleum Engineering from the Colorado School of Mines and has worked across the USA, UK and Middle East. Afrah is deeply committed to advancing the net-zero energy transition and brings this passion to her role on the SPE London Section board, and her contributions to several SPE committees.

### Students

**Omer Khoshnaw** is a Reservoir Engineer at INEOS, working on a gas asset in the UK Southern North Sea.

With a background in consultancy and training, he enjoys collaborating with teams and helping students connect with the

### Sponsorship

**Phuc Truong** is an engineer with Perenco, passionate about solving upstream challenges from artificial lift to well interventions. Having worked across four countries with Canadian, Japanese, and French operators, he thrives on tackling the complexities of ultra-mature fields.

**Carolina Barros** is the Director of Growth at Kongsberg Digital. Reporting to the Chief Commercial Officer, responsible for profitability, sales pipeline, and worldwide commercial activities for real-time data management products and solutions. She is a champion for innovation and women in leadership, and hosts the 'A energia pelo olhar Delas' podcast.

### Social Chair

**Leo Ngyuen** is a management graduate and early-career professional currently working at Perenco.

He holds an MSc in Management from University College London and a First-Class BSc in Management and Entrepreneurship.

### Membership

**Arsenij Fiodorov** is a Senior CCS Flow Assurance Engineer at Pace. His work includes flow assurance modelling of the transportation system of CO2 captured from hydrogen production sources, developing feasible operating envelopes, and mapping constraints of the complex transportation and injection system, carrying impure CO2 with high H2 content for offshore sequestration.

**Lester Clark** is the founder of Don't Delay Reality, (DDR), a decision-governance framework focused on improving clarity, alignment and execution under pressure. He works with leaders, founders and organisations navigating AI acceleration, complex change, strategic uncertainty and high-stakes decision environments.

# SPE events calendar – local and international

## LOCAL – UK

**Ongoing through 2025–2026 (London, England)**
**London SPE events**

**Energy on Draft!**
Quarterly social evenings open to all experienced professionals and career starters within the energy industry. Come along to catch up with friends and make new connections over drinks!

**Tech Talks**
Monthly events on various topics of interest to industry professionals. Speakers include Distinguished Lecturers.

**Net Zero webinars:** Insights and more.

More information: **SPE London**

**June 6, 2026 (London, UK)**
**SPE London Football Tournament 2026**

This tournament offers a fantastic opportunity to connect with peers in the energy sector while enjoying friendly competition on the pitch. Whether you are joining as an individual player or as part of a team, the event promises an engaging and inclusive experience for all skill levels.

Teams of professionals and students
Participation from the energy sector and academia
Networking opportunities and an exclusive Energy on Draft social event

More information: **Tournament**

## INTERNATIONAL

**June 23—25, 2026 (Istanbul, Turkiye)**
**SPE Europe Energy Conference and Exhibition**

This event will convene industry pioneers from around the world to explore groundbreaking developments and best practices in hydraulic fracturing. It offers an unparalleled opportunity to connect with influential professionals, gain insights into emerging trends, explore the latest technologies on the exhibition floor and shape the trajectory of your career through exceptional networking opportunities.

More information: **Conference**

**August 25–27, 2026 (Texas, USA)**
**The 2026 SPE Artificial Lift Conference and Exhibition-Americas**

This event promises to unite pioneering minds from leading IOCs, NOCs, and independent operators, fostering an exchange of ideas to propel artificial lift applications for unconventional shale developments forward. Collaborate with E&P experts, explore innovative solutions, and pave the way for advancements in this vital sector. Join us in propelling artificial lift forward.

More information: **Conference**

**August 5–6, 2026 (Bali, Indonesia)**
**SPE/IADC Asia Pacific Drilling Technology Conference and Exhibition**

Since 1996, the SPE/IADC Asia Pacific Drilling Technology Conference and Exhibition has established itself as the region’s leading drilling event. Rotating biennially within Asia Pacific, it provides the opportunity for operators, suppliers, contractors, and service company professionals to meet, discuss, evaluate, and share ideas to advance drilling operations, promote solutions to common problems, and improve overall efficiency.

More information: **Conference**

**September 15–16, 2026 (London, UK)**
**IADC/SPE Managed Pressure Drilling & Underbalanced Operations Conference/Exhibition**

Technologies designed to control annular pressure during drilling, inclusive of underbalanced drilling, managed pressure drilling and dual gradient drilling are being used in many forms around the world. UBD continues to maximize reservoir performance, while MPD techniques spanning onshore performance drilling and offshore deep and shallow water prospects serve to enhance drilling safety and minimize NPT.

More information: **Conference**

**For a complete listing of all events on the SPE Global Events Calendar: spe.org/en/events/calendar/ And, for more information about SPE training courses, calls for papers, and opportunities for SPE London sponsorship: SPE London**

# SPE policy on AI-generated content in publications

The SPE Board has approved a new policy allowing AI-generated content to be used within SPE publications under specific conditions.

AI-assisted language tools (such as ChatGPT) have gained widespread attention recently, particularly for their capability to assist in drafting scientific papers. While these tools have the potential to enhance the efficiency and speed of academic and technical writing, the ethics and best practices for their use are still evolving. These tools may generate useful information and content but are also prone to errors and inconsistencies.
**The SPE Board has approved a new policy for authors who use AI language tools** to generate content for their papers. The policy states that AI-generated content may be used within SPE publications but under specific conditions.

• AI language tools may not be listed as an author. The AI tool cannot sign publishing agreements or transfers of copyright.

• Any AI-generated content that is used within a manuscript should be thoroughly vetted, fact checked, and disclosed.

• If AI language tools are used within a manuscript, their use should be clearly explained within the methodology or acknowledgment section of the paper. If AI-generated content is included within a manuscript without an explanation, this can be grounds for rejection of the work at the discretion of SPE and may result in a code of conduct review.

• The authors of the manuscript will be held responsible for any errors, inconsistencies, incorrect references, plagiarism, or misleading content included from the AI tool.

It is important to note that technology for AI language tools is advancing rapidly. SPE plans to periodically review and update this policy to ensure its relevance and effectiveness. Any modifications to the policy will be communicated transparently and in a timely manner.

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