OWI APAC 2026: Well intervention & integrity report

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INTRODUCTION

Asia Pacific's oil and gas sector is entering a critical phase. The challenge facing operators across Malaysia, Indonesia, Thailand, Brunei, and Vietnam is no longer primarily about finding new resources; it is about doing more with what already exists. Ageing infrastructure, declining reservoir performance, rising operational complexity, and tightening regulatory expectations are collectively reshaping how upstream value is created and protected across the region.

The message is clear: APAC is not short of wells or activity. It is short of value-driven intervention. The focus is shifting decisively from drilling new assets to maximising production from mature fields, managing integrity risks, controlling costs, and preparing responsibly for a growing wave of well abandonments. Every dimension of this challenge, production, integrity, lifecycle planning and eventual decommissioning, is now pressing simultaneously. For many operators, the issue is not a shortage of opportunities but a shortage of capital, resources and execution capacity to address them all at once. Prioritisation is becoming just as important as technical capability.

MARKET OVERVIEW

Globally, the well intervention market is forecast to grow from around US$10.49bn in 2026 to US$13.51bn by 2030, driven by demand for enhanced recovery, well maintenance and asset-life extension. Asia Pacific is expected to play an important role in that growth, given the concentration of mature offshore assets and ageing infrastructure across the region.

In Malaysia, PETRONAS aims to maintain domestic production at around 2 million boe/d through exploration, deepwater development and enhanced oil recovery initiatives. Resource optimisation projects such as Belud, Sepat and Kurma Manis reflect the industry's growing emphasis on extracting greater value from mature assets. In Indonesia, SKK Migas has launched its Triple 100 programme, targeting 100 exploration wells and 100 multi-stage fracturing wells in 2026. Similar priorities are emerging across Thailand and Brunei, where ageing offshore assets are increasing the focus on production optimisation, field life extension and lifecycle planning.

Operators are also placing greater emphasis on well integrity and lifecycle management, driven by ageing infrastructure, declining reservoir performance and increasing operational complexity. Rather than measuring success through activity volume alone, operators are increasingly prioritising interventions that deliver measurable production, integrity and economic benefits.

Industry estimates suggest that around 200 offshore fields across Southeast Asia could cease production by 2030, creating a decommissioning challenge valued at approximately US$100bn. As a result, intervention planning is being increasingly integrated with broader lifecycle strategies, including integrity assurance, late-life asset planning and future abandonment considerations.

OPERATORS ARE ALREADY MOVING

National oil companies and regional operators are directing greater investment towards resource optimisation, production enhancement and long-term asset management as rising development costs and declining reservoir performance reshape upstream priorities.

PETRONAS continues to lead through its Activity Outlook 2026-2028, with resource optimisation projects forming a central pillar of maintaining domestic production and supporting energy security objectives. Indonesia is pursuing a similarly ambitious agenda through SKK Migas' Triple 100 programme, designed to strengthen reservoir recovery and unlock additional value from existing assets.

Across the wider region, the 2025 start-up of Shell's Phase 4 Gumusut-Kakap-Geronggong-Jagus East (GKGJE) development demonstrated how subsea tie-backs and targeted well developments can unlock additional reserves while limiting new infrastructure requirements. Spanning the Malaysia-Brunei border, the project reflects the growing preference for cost-effective development models that extend the value of established offshore hubs. Building on record production achieved in 2025, CNOOC demonstrates how data-driven asset management through enhanced water injection, digital technologies and AI-enabled optimisation is increasingly being used to sustain production and maximise field economic life.

The emphasis across the region is increasingly shifting towards recovery optimisation, intervention planning and lifecycle management. That shift brings well integrity to the centre of the operational agenda.

INTEGRITY IS THE DEFINING OPERATIONAL CHALLENGE

Well integrity management is aimed at reducing the risk of failure arising from progressive degradation mechanisms, understanding and eliminating these risks before they escalate into operational or environmental incidents. This becomes particularly critical in late-life fields, where barrier performance, failure prognosis and life extension assessments play a key role in maximising overall asset value and ensuring safe continued production.

Integrity failures can result in significant financial losses and serious environmental consequences, including groundwater contamination, surface fluid releases and gas leakage into the atmosphere. These risks are further heightened in HPHT wells, deepwater developments, enhanced oil recovery operations and plug and abandonment activities, each presenting distinct operational challenges.

Well integrity in Asia Pacific is increasingly shifting from a reactive maintenance function to a proactive, lifecycle-driven discipline, with greater emphasis on early detection, continuous monitoring and targeted intervention strategies.

Ageing completions: Continuous exposure to harsh operating conditions leads to gradual degradation of well components, including corrosion, material fatigue and barrier deterioration, reinforcing the need for proactive monitoring and structured intervention strategies.

Rising water cut: Techniques such as precision water shutoff and zonal isolation are being used to manage unwanted water influx and restore production balance without capital-intensive redevelopment.

Offshore integrity risks. Mature offshore wells face sustained casing pressure, barrier uncertainty and long-term mechanical degradation, amplified where access for intervention is limited and operating conditions are more demanding.

Brownfield production enhancement: Brownfield optimisation strategies are being widely adopted to extend production life and maximise recovery while minimising downtime and capital exposure.

Data and surveillance first. Diagnostics, real-time surveillance and well performance monitoring are increasingly used to detect early signs of integrity issues before intervention is required, improving accuracy and reducing unnecessary operations.

The emphasis is no longer on how many interventions are conducted, but on selecting the right candidates and ensuring each intervention delivers measurable value. In many mature assets, intervention budgets are increasingly competing with integrity requirements and future abandonment obligations. Decisions made today can have implications that extend well beyond immediate production gains.

That is the practical question OWI APAC 2026, taking place 30 June to 1 July 2026 at Crowne Plaza Kuala Lumpur, is built around: how operators decide which wells to intervene on, which jobs to defer, and how to ensure every intervention delivers measurable production, integrity or lifecycle value.

Find out more at *events.offsnet.com/OWI-APAC-2026*

ABANDONMENT CAN NO LONGER WAIT

Around 200 offshore fields across Southeast Asia are expected to cease production by 2030, creating a decommissioning liability of approximately US$100bn concentrated in Indonesia, Malaysia, Thailand and Brunei. What was once a distant obligation is now an active execution agenda.

Industry analysis by Herbert Smith Freehills Kramer highlights that offshore decommissioning in Southeast Asia is entering a more complex phase, driven by ageing infrastructure, stricter environmental expectations and rising regulatory scrutiny. Delaying P&A activities can significantly increase overall liabilities, compounded by tighter offshore capacity and rising execution complexity.

Operators are increasingly integrating abandonment considerations into ongoing production and intervention planning, recognising that late-life decisions directly influence eventual abandonment complexity, risk exposure and overall cost. The shift from liability to priority is already visible in how work is being awarded and structured across the region.

Malaysia is one of them. T7 Global Bhd, through its wholly owned subsidiary Tanjung Offshore Services Sdn Bhd, secured a work order with PETRONAS Carigali Sdn Bhd for integrated plug and abandonment services on the Zuhal East well, scheduled from November 2025 to March 2026. The appointment, under PETRONAS' Pan Malaysia contract covering intervention, workover and abandonment scopes, reflects how these activities are increasingly being managed as part of a continuous lifecycle rather than isolated scopes.

Yet execution remains the harder challenge. Offshore P&A is technically complex and cost-intensive, particularly where rig dependency, subsea access constraints and regulatory requirements converge. Experienced crews, advanced tooling and integrated project management capabilities remain limited across several markets, driving greater reliance on specialised service providers while investment in local capability development grows.

Regulatory frameworks are also tightening in parallel. Vietnam operates a formal decommissioning security fund linked to approved decommissioning plans, managed through PVN, with contractors required to contribute based on their participating interest under each petroleum contract. Brunei has published structured Decommissioning and Restoration Guidelines through the Petroleum Authority of Brunei Darussalam covering all offshore and onshore facilities, and is already executing an active removal programme targeting over 50 platforms from 2025. In Thailand, a formal decommissioning regulation has been in place since 2019, requiring operators to submit decommissioning plans, cost estimates and environmental assessments, though legacy contracts and evolving financial security requirements continue to create complexity. Across all markets, the direction is consistent: earlier planning, stronger financial assurance requirements, and increasing regulatory scrutiny as the region's asset base approaches end of life.

Executing this volume of work effectively demands better tools across every stage of the process, from identifying candidates to verifying barriers to managing the operation itself.

REGULATORY & LIFECYCLE PRESSURE

Frameworks across Southeast Asia are becoming increasingly structured. Vietnam has introduced decommissioning funding mechanisms linked to national oil and gas structures. Brunei applies its guidelines on a case-specific basis. In Thailand, operators are engaging earlier in lifecycle planning ahead of field cessation. Evolving financial assurance requirements and increasing abandonment costs are adding complexity across all markets.

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KEY REGULATORY THEMES

SHAPING DECOMMISSIONING AND P&A IN ASIA PACIFIC

Regulators across Asia Pacific are elevating expectations for well lifecycle management. These themes are influencing how operators plan, execute and report plug and abandonment activities.

01 EARLIER DECOMMISSIONING & P&A PLANNING

Planning for decommissioning and plug and abandonment is increasingly expected to begin earlier in the asset lifecycle, helping operators reduce risk, improve cost visibility and avoid future liabilities.

02 HIGHER SCRUTINY ON WELL BARRIERS

Authorities are placing greater emphasis on barrier verification, well integrity documentation and historical well records to ensure long-term containment and environmental protection.

03 ENVIRONMENTAL RESTORATION

Regulators are increasingly focused on minimising environmental impact and, where required, restoring sites to agreed conditions as part of responsible asset closure.

04 FUNDING AND LIABILITY

Financial assurance requirements are becoming more prominent, with regulators seeking confidence that operators can meet current and future abandonment obligations.

05 REGULATORY APPROVALS

Operators must ensure technical plans, execution activities and supporting documentation align with regulatory approvals and reporting requirements.

THE REGULATORY MESSAGE IS CLEAR

Decommissioning and plug and abandonment are no longer viewed solely as end-of-life activities. They are becoming core lifecycle responsibilities that require early planning, strong integrity assurance, environmental stewardship, financial preparedness and regulatory alignment.

Plan early | Assure integrity | Protect habitat | Secure funds | Comply fully

Proactive compliance today helps build operational certainty, reduce risk and support sustainable long-term value across the offshore energy sector.

TECHNOLOGY ENABLES SMARTER DECISIONS

Operators across Asia Pacific are adopting advanced technologies to improve efficiency, safety and cost control. Real-time monitoring, digital well surveillance and remotely operated systems are reducing reliance on traditional rig-based interventions, while enhanced wireline, coiled tubing and hydraulic workover capabilities are enabling more precise and less invasive operations.

The SPE/ICoTA APAC Well Intervention & P&A Conference theme, "From Data to Intervention: Smarter Decisions, Better Outcomes," reflects this as a wider regional direction.

Real-time diagnostics: SLB's DELFI digital platform and Baker Hughes' JewelSuite and Cordant ecosystem enable continuous monitoring of well integrity and production performance without physical intervention, improving candidate selection and reducing non-productive activity.

Rigless and workover systems: Wireline, coiled tubing and vessel-based approaches alongside hydraulic workover units from Weatherford and NOV are increasingly used to reduce costs and rig dependency across mature offshore fields.

Barrier verification: Cement bond logs, ultrasonic imaging tools and electromagnetic measurement systems confirm well integrity prior to plug and abandonment operations, critical for regulatory compliance and abandonment assurance.

Digital integrity platforms: SLB's OSDU-enabled workflows and Baker Hughes' Cordant platform integrate production data, surveillance inputs and integrity records into unified lifecycle management systems, supporting risk-based prioritisation.

Subsea and remote operations: Riserless and remotely operated subsea systems, including Oceaneering's ROV intervention systems and Helix Energy Solutions' Q4000-class vessels, reduce the need for full vessel mobilisation in deepwater environments.

Despite these advances, technology alone will not solve the region's challenges. Access to skilled personnel, intervention assets and execution capacity remains a limiting factor across many markets.

EXECUTION CAPACITY IS UNDER STRAIN

Execution capability across APAC is increasingly constrained by human resources, offshore infrastructure availability and specialised service capacity. In many cases, the technical solutions already exist. The greater challenge is securing the personnel, vessels, equipment and execution windows needed to deploy them efficiently as intervention and abandonment activity increases.

Key pressures include limited specialist intervention and P&A crews; competition for offshore vessels, rigs and intervention equipment; remote logistics complexity; continued dependency on Tier-1 contractors; and skills gaps in end-to-end lifecycle planning, particularly in integrating integrity, intervention and abandonment workflows.

In Malaysia, PETRONAS through Malaysia Petroleum Management (MPM) has launched the Hydraulic Workover Unit (HWU) Academy to develop local talent through practical, hands-on training using retired assets and simulation-based learning tools, strengthening national capability in plug and abandonment operations.

Closing this gap is not purely a workforce challenge. It is also a question of how intervention work is structured commercially, and that is driving its own shift.

COMMERCIAL MODELS ARE EVOLVING TOO

Operators are under pressure to reduce execution costs while still improving production and maintaining integrity performance. In offshore environments, that is rarely straightforward. Logistics complexity, limited rig and vessel availability, difficult brownfield access, ageing platform infrastructure and the risk of late-stage intervention all add to the pressure.

As a result, commercial models are beginning to shift. There is a clear move toward more structured, outcome-focused frameworks, with operators and service providers increasingly favouring solution-based contracting over traditional activity-based billing. Risk-reward sharing, campaign-based execution and integrated service delivery are becoming more common, particularly where multiple intervention scopes can be bundled under a single coordinated plan.This shift also reflects a broader reality: the challenges in intervention, integrity and abandonment are too interconnected for any single stakeholder to manage in isolation. Greater collaboration between operators, contractors and technology providers is becoming less of an option and more of a necessity.

NO SINGLE STAKEHOLDER CAN DO THIS ALONE

Asia Pacific's well intervention and integrity market remains structurally fragmented across multiple service providers, asset types and jurisdictions, with limited exchange of operational learnings and best practices. This fragmentation continues to act as a barrier to efficiency and consistent execution quality.

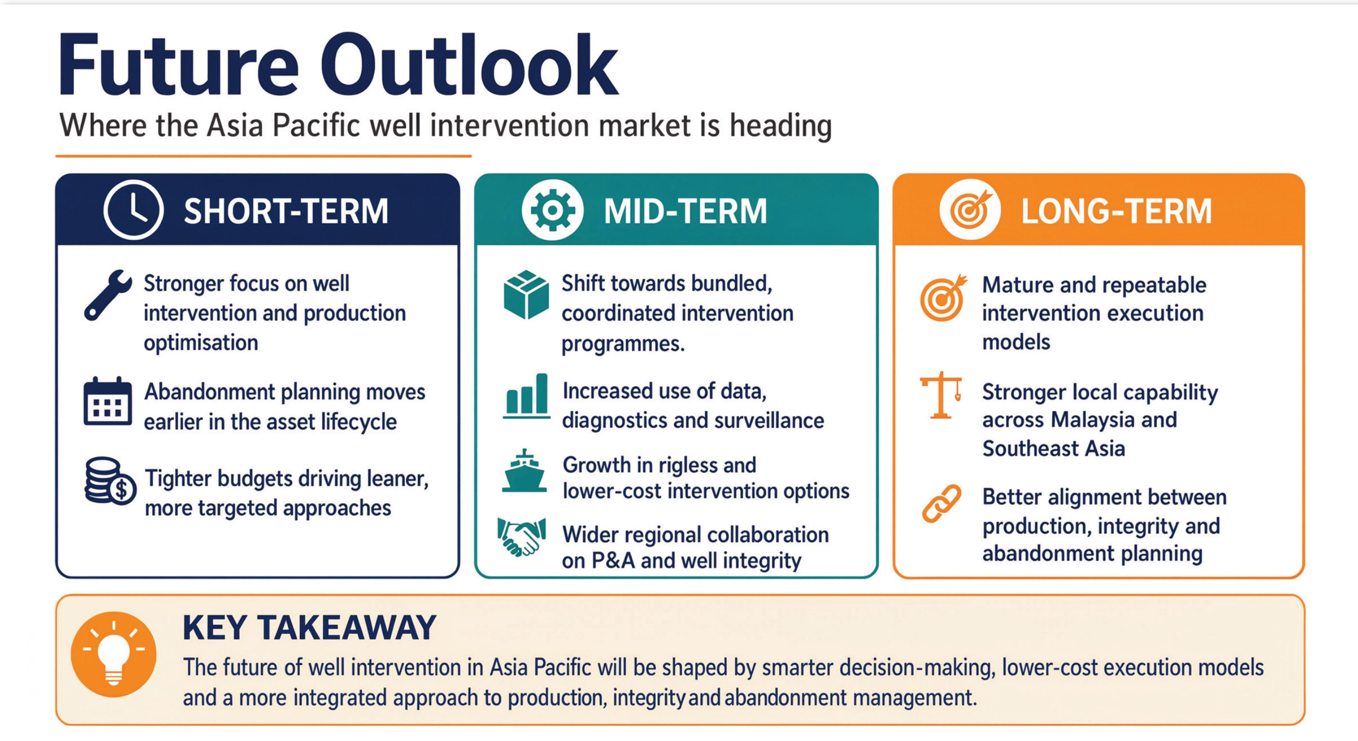
Challenges such as barrier verification in HPHT wells and large-scale offshore P&A campaigns are simply too complex for any single stakeholder to address alone. Greater collaboration between operators, national oil companies, service companies, regulators and technology providers is increasingly essential.

OWI APAC 2026 in Kuala Lumpur reflects this need, bringing together operators, service providers, regulators and technology stakeholders to address practical execution challenges across the well lifecycle. The value of such engagement extends beyond the event itself, supporting shared understanding, stronger collaboration frameworks and more consistent execution practices across the region.

FUTURE OUTLOOK

The shape of what comes next is already visible in the decisions operators are making today. Across the region, the shift is not dramatic or sudden. It is gradual, practical and driven by necessity: tighter budgets forcing smarter candidate selection, growing abandonment timelines pushing planning earlier, and hard-won experience from mature assets finding its way into how the next generation of interventions gets designed and executed.

Progress will not be uniform across the region, and some markets will move faster than others. But the direction is clear. The operators who come out of this period well will not necessarily be those with the largest intervention programmes. They will be those who used this moment to build better habits: planning earlier, integrating disciplines that have historically been kept separate, and making decisions based on data rather than precedent.



CONCLUSION

APAC possesses the asset base, technical capability and resource potential. The next phase of performance will not be defined by how much activity is generated, but by how well it is planned, prioritised and executed across the full well lifecycle.

The industry has traditionally viewed intervention, integrity and abandonment as separate disciplines. Increasingly, that distinction is becoming difficult to maintain. Production optimisation decisions influence future integrity requirements, while integrity strategies can directly affect eventual abandonment costs and complexity.

Operators that invest in smarter intervention planning, earlier P&A integration and stronger data-driven decision-making will manage both cost and risk more effectively. Those that continue treating intervention, integrity and abandonment as separate activities will face compounding liabilities as the region's asset base ages further.

OWI APAC 2026 reflects this moment of transition, bringing together the stakeholders who will shape how the region navigates it.

Authored by Shivani Dhruv and the Offshore Network editorial team

To offer feedback or for more information on Offshore Network's conferences, contact:

Imran Uddin
Project Manager
T: +44 (0) 203 409 3043 | E: imran@offsnet.com
Offshore Network Ltd.