upstream

US GULF FOCUS

US Gulf back on track

OVERVIEW

US Gulf bouncing back from d

Activity on the **increase** in key sector as leaner **developments** move forward and **contractors** begin to reap the **rewards** again

KATHRINE SCHMIDT
Houston

Sailaway: the Appomattox platform in Ingleside, Texas, earlier this year

VESSEL schedules are filling up, more helicopter rotors are spinning and more hard hats and steel-toed boots are being pulled off the shelf as activity slowly returns to the US Gulf of Mexico.

Caution remains the watchword for new greenfield developments in the region as stiff internal competition for company dollars continues from US shale and areas such as Brazil.

However, companies are finding ways to sanction lighter and leaner developments in the region, with Shell's Vito moving forward this year, to name one notable example.

"We've seen some improvement in fiscal performance and operating efficiency that have come through a much-needed shaping up for the last four years of the downturn," William Turner, senior research analyst with Wood Mackenzie, tells Upstream.

While new exploration activity remains modest, tie-back activity and development drilling has held steady.

Jonathan Baliff, chief executive of helicopter player Bristow, says that at the depths of the downturn, the company would see some days that topped out at between 200 and 300 passengers in the region.

Today, that has perked up, with higher-volume days of between 450 to 500 people, with some highs of 650 or even 1000.

"We're starting to see that increase in passengers on heavy flight days," he says. "It's still very gradual, but it's happening."

While bid teams and engineers push ahead on new projects in Houston, already-sanctioned projects in the US Gulf are also continuing and keeping contractors busy through the region's long summer.

Among the most active is Llog Exploration, which has work under way to hook up a range of tiebacks discovered in the past few years. Eight wells are due to come online from five fields this year, Eric Zimmerman, vice president of geology for Llog, told a recent industry conference.

Work is also pushing ahead at the formerly Chevron-operated Buckskin project in Keathley Canyon, with first oil planned next year.

Change of strategy

"Buckskin is a Lower Tertiary project that we picked up really at the beginning of last year," Zimmerman said.

"It's a change of strategy for us. But ultimately it was an opportunity that we couldn't pass up," he added.

Anadarko is also continuing operations in the vicinity of Lucius via development of the Hadrian North discovery, formerly operated by ExxonMobil, and spudded its first well on that project in the second quarter.

First oil is planned for 2019, and the company is also pushing ahead on tie-back work at its other hubs.

The company said in its second-quarter operations report that its $2 billion deep-water acquisition of a range of new assets in 2016 is "expected to recoup its initial investment this year" — a year earlier than expected.

For Anadarko, the Gulf of Mexico is "a steady-state environment that throws off a lot of free cash flow, and that's real attractive," chief executive Al Walker told investors on a conference call, elaborating on the company's use of that cash to fuel its onshore developments in the Delaware and Denver-Julesburg basins.

Anadarko recently agreed to a deal keeping a single rig, the Diamond drillship Ocean Blackhawk, working through 2021 on "highly economic" tie-back opportunities, the company said.

Chevron is also continuing work at its Big Foot platform ahead of planned first oil later this year, pressing ahead with hook-up and commissioning following successful installation of the facility earlier this year after nearly three years of delays.

"The drilling programme is under way," Chevron executive vice president Jay Johnson said. "We are completing the first well and we are moving through and are just about to bring buy-back gas into the facility to start the final commissioning."

Loop currents

The company has also run some of its second riser to make sure that loop currents in the US Gulf, which bedeviled the initial installation attempt at Big Foot in 2015, were not a factor the second time around.

Shell's Appomattox platform sailed away in May from Kiewit

Region on track for production record this year

THE US Gulf is expected to beat its all-time production record in 2018 as projects that were planned before the industry downturn continue to ramp up, energy consultancy Wood Mackenzie predicts.

The company expects the total output of oil and gas in the region to hit 1.93 million barrels of oil equivalent per day — about 80% oil — by the end of the year.

That's up almost 10% from the previous high in 2009 and would be a 13% growth rate year over year, WoodMac says.

While giant discoveries are expected to drive production globally, operators in the Gulf of Mexico are expected to be more conservative, focusing on tie-back projects that are inherently lower risk but with lesser upside.

While potentially more palatable for investors, those projects will not fuel the type of output growth currently being experienced from long-cycle investments now coming online, according to the note.

Wood Mackenzie senior analyst William Turner said: "Increased investments in exploration and development, especially in ultra high-pressure high-temperature technologies and projects, are crucial not only to maintaining the current pace of production but also in unlocking the next phase of significant volumes in the region."

loldrums of industry downturn

Photo: SHELL

First cut: BP Mad Dog 2 general manager Bill Steel at the project's first steel cutting ceremony in March at Samsung Heavy Industries Photo: BP

Offshore Services in Ingleside, Texas after integration of its hull, built by Samsung Heavy Industries in South Korea, and topsides built at Kiewit.

The Anglo-Dutch supermajor said offshore installation is yet to come.

"The project is on track for first oil delivery in 2019," Shell chief executive Ben Van Beurden told investors on a conference call.

First steel

Shell says it has brought down costs by more than 30% at the project, which took a final investment decision in 2015 and has capacity to produce 175,000 barrels per day from the company's discoveries in the Norphlet formation on the eastern side of the Gulf of Mexico.

The company also confirmed it has cut first steel on its next project, Vito, which has seen its initial projected costs cut by some 70% as the project was extensively reworked over the past several years.

Shell took a final investment decision on the 100,000 barrels of oil equivalent per day project this April.

The company has also begun development drilling work with the newbuild Transocean drillship Deepwater Poseidon in Mississippi Canyon Block 940 in nearly 4000 feet of water.

First steel was also cut this spring on BP's Mad Dog 2 facility at Samsung Heavy Industries in South Korea after a final investment decision was approved last year.

First oil is planned for 2021 for both Vito and Mad Dog 2.

BP also has development drilling under way for the project with the Seadrill drillship West Auriga, in Green Canyon Block 825 in 5200 feet of water.

The company is also at work on the latest expansion of its Thunder Horse development, this time on the north-west of the project.

BP will tie in a pair of new development wells with peak average annual gross production of 25,000 barrels of oil equivalent per day. Start-up is planned for 2019.

FIELD DEVELOPMENT

Greenfield projects inch along

Operators make progress with developments but downturn leaves **legacy of caution**

KATHRINE SCHMIDT
Houston

Sanctioned: BP reached a final investment decision on Mad Dog 2 last year Image: BP

OIL and gas explorers are advancing a range of greenfield offshore projects in the US Gulf of Mexico but remain cautious as they seek to implement cost improvement strategies developed during the downturn while grappling with the technology needed for high-pressure developments.

Operators such as Shell, most recently with Vito sanctioned last April, and BP with Mad Dog 2 last year, are showing that slimmed-down projects can be done.

Other industry players have taken note and are once again considering bigger oil and gas developments after years of inaction, Rystad Energy says in a recent note to clients.

"Some of the factors contributing to this trend are the recovery in oil prices, reduced unit development costs, improved and more efficient well and facility design as well as knowledge acquired from previous projects and breakthroughs in technology," the consultancy says.

Fast-track is not the watchword right now in the US Gulf, with companies opting to bide their time.

However, generally speaking the next two potential candidates in the final investment decision queue are seen as Chevron's Anchor and Llog Exploration's King's Landing facility, both in the Green Canyon area of the US Gulf of Mexico.

Anchor first

Wood Mackenzie senior research analyst William Turner says the consultancy believes Chevron's Anchor development will be first to achieve a final investment decision, anticipating the project will be sanctioned "in early 2019", with the possibility for limited long-lead orders as early as the fourth quarter of 2018.

Rystad Energy is more cautious on the timeline, but also sees a potential final investment decision later next year. Other sources suggest this could slip to early 2020.

Chevron continues to progress a set of dual pre-front end engineering and design processes for a facility that would be used for both Anchor and potentially later its Tigris development.

That effort has now been in place for well over a year and is believed to be set to turn over to a full FEED in the coming months.

Wood is handling topsides work while KBR is carrying out the contract for the hull, believed to be a mid-sized semi-submersible platform with capacity for about 100,000 barrels per day.

Contractors have remained mum, however, on the results of a FEED contest for the subsea portion of the work on both fields, though there have been suggestions that Wood could have an edge.

However, sources suggest that Anchor and Tigris may be key projects that enable technology for ultra-high pressure developments after research and development efforts were cut in the downturn.

From from subsea kit to a specialised drilling rig, successful deployment of that technology — if it makes its way to the open market — can help drive development of existing discoveries and exploration for new ones, prospects that have long been seen as too complex and expensive, Turner says.

In one example, Upstream previously reported that Chevron may be looking at modifying a Transocean drillship being built at Singapore's Jurong Shipyard to a seventh-generation version with 20,000 psi blowout preventer stacks.

Meanwhile, Llog Exploration continues with engineering works on a potential Delta House lookalike production platform for its Khaleesi and Mormont discoveries.

Topsides design is being carried out by Audubon Engineering with hull works handled by Exmar, with plans to fabricate the facility in South Korea at Hyundai Heavy Industries if the project is sanctioned.

However, the company has yet to pull the trigger, though a potential decision could be seen as soon as by the end of the year.

The company also took over operatorship at Shenandoah field with an eye towards carrying that forward to development, potentially via a repeat of the Delta House model facility. But as another ultra-high pressure development, the project is expected to take time.

Another nearer-term potential greenfield development is Shell's Whale discovery in the Perdido foldbelt announced earlier this year, where the Anglo-Dutch supermajor has said it plans to leverage what it learned from the Vito development.

The company would be expected to repeat its engagement with its contractors from that project, with Jacobs Engineering on design and Sembcorp Marine of Singapore on construction.

Rystad suggests this project might also take a final investment decision in 2019.

However, it remains to be seen whether Shell will be able to match a key aspect of its Vito contract — the price — given that the company made the order at the very bottom of the project cycle, Turner says.

North Platte drive

In another ultra-high pressure development possibility, France's Total has re-engaged contractors in the field from Cobalt following that company's bankruptcy process. Equinor also joined the project on the remaining 40%.

Total sees the project as a mid-sized semi-submersible with potential for about 100,000 bpd, with a lighter topsides of around 10,000 tonnes, one source says.

But the partners are still working to define the scope of the project. Even with their experience in deep-water elsewhere, they want to understand how to be successful in the US Gulf region, sources say.

Competitive costs are seen as more important than schedule this point, one person indicates.

A project team has been making the rounds with contractors in Houston. Cobalt had originally engaged with five potential engineering, procurement and construction contractors — Aker Solutions, Exmar, Modec, TechnipFMC and SBM Offshore.

Total has continued engagement with those players as well as with engineering houses for some pre-FEED work to help define the scope, seeking proposals by the middle of this month, Upstream is told. That work could then potentially start in the fourth quarter.

Nonetheless, the company is not expected to make any major contracting moves until next year at the earliest, Upstream understands.

Another longer-term development possibility is Chevron's Ballymore discovery alongside Total in the Norphlet, but that is seen as further out.


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EXPLORATION

Ready for action: the Rowan jack-up Ralph Coffman is set to drill for GulfSlope at the Canoe Shallow prospect

Steady pace for US Gulf deep

Drilling activity carries on at modest pace, with **operators setting plans for new wildcats**

KATHRINE SCHMIDT
Houston

EXPLORATION in the US Gulf of Mexico continues to creep along at a modest pace, with a handful of explorers taking advantage of low service costs for a drilling push while others are lining up plans for wildcatting down the line.

Chevron and Total are still on location in Mississippi Canyon 610 with their next joint test of the Norphlet trend, the Twickenham prospect. The well was initially cleared to spud in March, according to Bureau of Safety & Environmental Enforcement records.

The objective is being targeted by the drillship Pacific Sharav in about 7089 feet of water.

That well is just two blocks west of Dover, Shell's most recent Norphlet discovery, in MC 612.

Earlier this year Chevron and Total announced a discovery with over 670 feet of net oil pay at Ballymore, which lies just three miles (4.8 kilometres) from Chevron's existing Blind Faith platform.

Chevron also recently received approval on an exploration plan to drill the Crown prospct on Green Canyon blocks 717, 760, and 761, US records show.

The site lies about 124 miles offshore in 5470 feet of water. The blocks in question lie a single block north and two west of the original Anchor find in GC 807.

Work had initially been scheduled to start as soon as June, with drilling lasting 200 days, but no drilling permit is apparent in BSEE public records.

A successful discovery at Crown could potentially add volumes to what Chevron has long been referring to as a hub-class discovery at Anchor, which was discovered in 2014 and successfully appraised shortly thereafter in 2015.

Murphy Oil is one of the independent players that has kept drilling in the US Gulf, with 50% partner BHP recently reporting a discovery at the company's appraisal to the Samurai prospect in Green Canyon Block 432.

Murphy took over operatorship after Anadarko drilled an original well on the block in 2010, and still has the Transocean drillship Deepwater Asgard on site in 3464 feet of water.

The US independent remains bullish on global exploration, and used the oil and gas downturn as an opportunity to reconfigure its exploration portfolio and push ahead while taking advantage of lower service costs.

Best time

Murphy vice president of global exploration Greg Hebertson, speaking at a recent industry conference, described the current moment as "the best time in the last decade to be involved in the offshore exploration business, and that is going to continue for at least a few more years".

The Samurai well could add to resources that BHP has already discovered in the area and had at one time considered for a standalone development, including Shenzi North, Caicos and Wildling.

Llog has also made discoveries nearby at Khaleesi and Mormont, and other infrastructure includes Murphy's Frontrunner spar and Anadarko's K2 development.

Next up, Murphy plans to drill the King Cake prospect in Atwater Valley 23 in the third quarter, and also recently farmed in to the Highgarden prospect on GC 895 south of the Chevron-operated

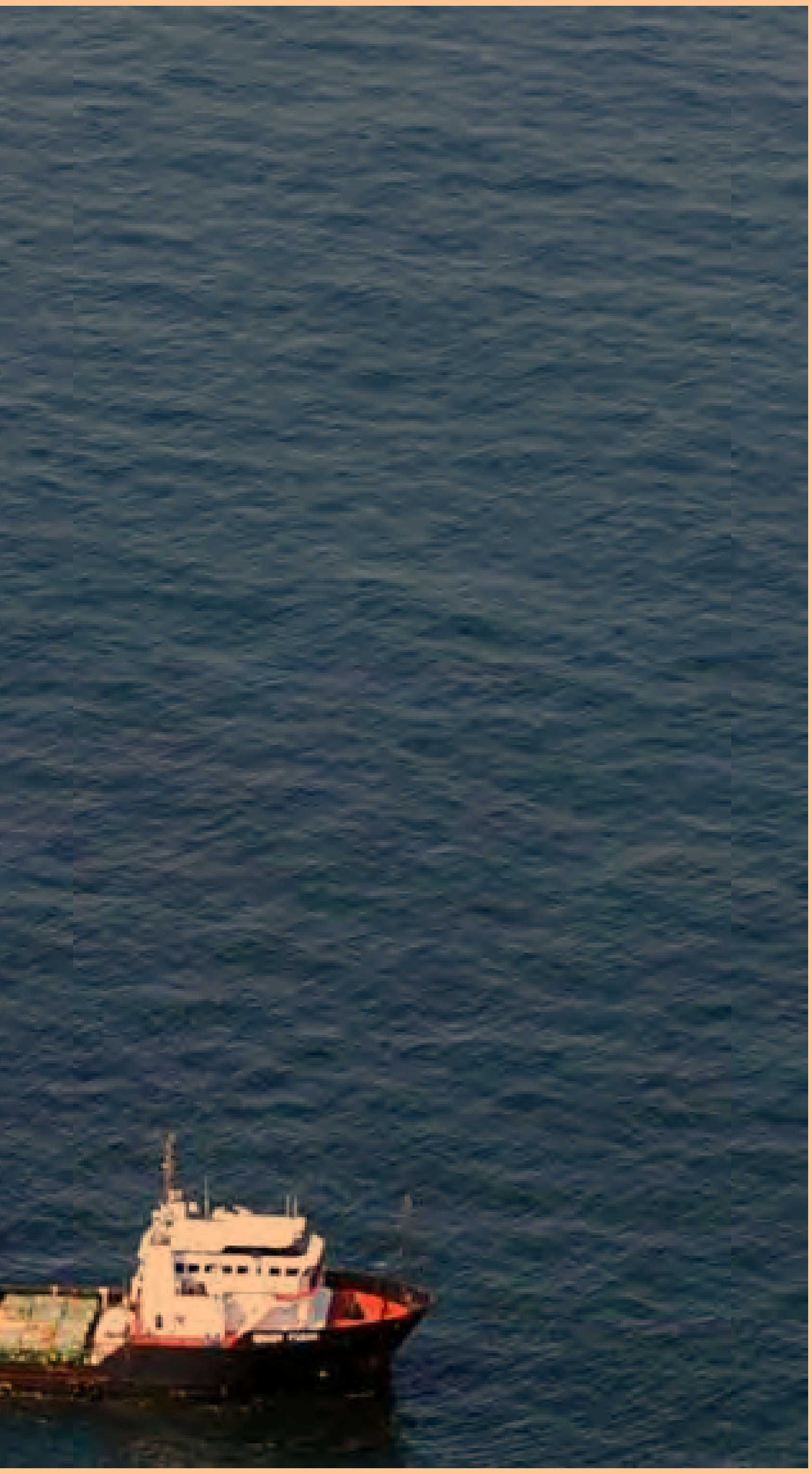


Photo: ROWAN COMPANIES

exploration

Anchor find. Meanwhile, GulfSlope Energy was issued a drilling permit on 27 July for the first of its two highly anticipated wells in the region this summer.

The work will put into action the exploration thesis held by the company over the last four years — that the US Gulf's prolific sub-salt Miocene formations have potential via easier-to-access drilling locations closer to shore.

GulfSlope received the Rowan jack-up Ralph Coffman in the region in early May as it gears up to drill the Canoe Shallow prospect on Vermilion Area, South Addition Block 378 and the Tau prospect on Ship Shoal Area, South Addition 336 and 351.

Block moves and drill plans help give clue to wildcat menu for operators

WHILE most activity in the US Gulf of Mexico at present is focused on development work, a range of block moves and exploration plans suggest where explorers might look next, *writes Kathrine Schmidt*.

Last month, US supermajor ExxonMobil filed a new exploration plan on a pair of deep-water Gulf of Mexico blocks picked up in a lease sale last August for more than $15 million.

The Thunder Horse East plan covers up to three well locations in Mississippi Canyon Blocks 779 and 823, immediately east of BP's Thunder Horse development in between 6300 and 6400 feet of water.

The exploration plan calls for a spud as soon as 15 September, with drilling set to last for 152 days.

ExxonMobil recently signed the drillship Rowan Relentless to an 80-day contract starting in September with four one-well options.

The US supermajor already has approval for an exploration plan for a prospect called Hershey, whose blocks it picked up for $90.4 million in a 2013 lease sale.

The plan laid out up to six targets in Green Canyon blocks 326, 327 and 371.

The area lies 97 miles (155 kilometres) offshore in about 3000 feet of water, south-east of the Talos-operated Phoenix field and less than 20 miles south of the Bullwinkle fixed platform.

ExxonMobil's first recent US Gulf wildcatting effort was at the Antrim prospect last year on Green Canyon Block 364 with the drillship Noble Bob Douglas. No results have been disclosed.

BP has also kicked off drilling efforts in the vicinity of its Na Kika platform, a broader push as the company looks to new opportunity around its existing four Gulf hubs, which also include Thunder Horse, Atlantis and Mad Dog.

The UK supermajor was granted a permit in March of this year for a prospect called Manuel in MC 520, where work is being carried out by the Seadrill drillship West Capricorn in about 6616 feet of water.

The next prospect would appear to be a block southward at a well called Isabela 2 in Mississippi Canyon 562, which could get under way as soon as 1 August.

Drilling would be expected to take 184 days, or wrap up by the end of January 2019.

The site lies 64 miles offshore in 6436 feet of water.

Meanwhile, US independent Anadarko has filed an exploration plan for a new wildcat in the western deep-water US Gulf in the central part of the Alaminos Canyon area.

Government records indicate a plan was filed by the operator on 5 June spanning Alaminos Canyon blocks 380 and 424, which lie in water depths of between 6500 and 7200 feet.

Anadarko operates both blocks with a 67.5% stake, after having farmed in to the pair in August 2016. Norway's Equinor, the original lessee, holds a 22.5% stake and Spain's Repsol a 10% stake on both tracts.

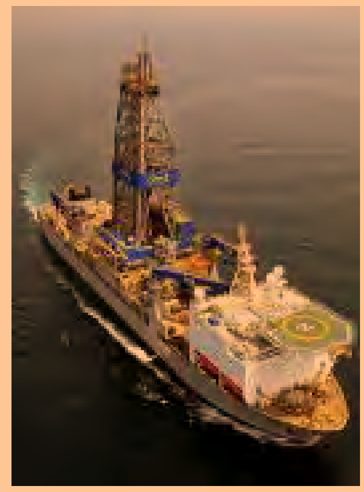
The leases are due to expire in January 2019. The blocks were purchased for about $82 million during the heady days of high oil prices in August of 2008.

Shell could also be the first company other than US independent Cobalt International Energy to drill in the promising but undeveloped Lower Tertiary discovery of North Platte in the ultra-deep US Gulf.

The Anglo-Dutch supermajor filed a plan last year to drill the Caramel Keg prospect on Garden Banks 961 and 962, the closest of which is just three miles away from the discovery in Garden Banks 959.

Shell is also targeting a new exploration prospect near its ultra-deep Stones floating production, storage and offloading unit in the Gulf of Mexico, covering up to eight well locations at Stones South-West on Walker Ridge Blocks 594 and 595.

Drilling the ultra-deep well some 184 miles offshore could start as soon as July and would be expected to take 225 days, which according to that schedule would see the operation wrap up in February.


Contract: the drillship Noble Bob Douglas is to work for ExxonMobil in the US Gulf
Photo: NOBLE

WELLS TO WATCH IN 2018 SECOND HALF

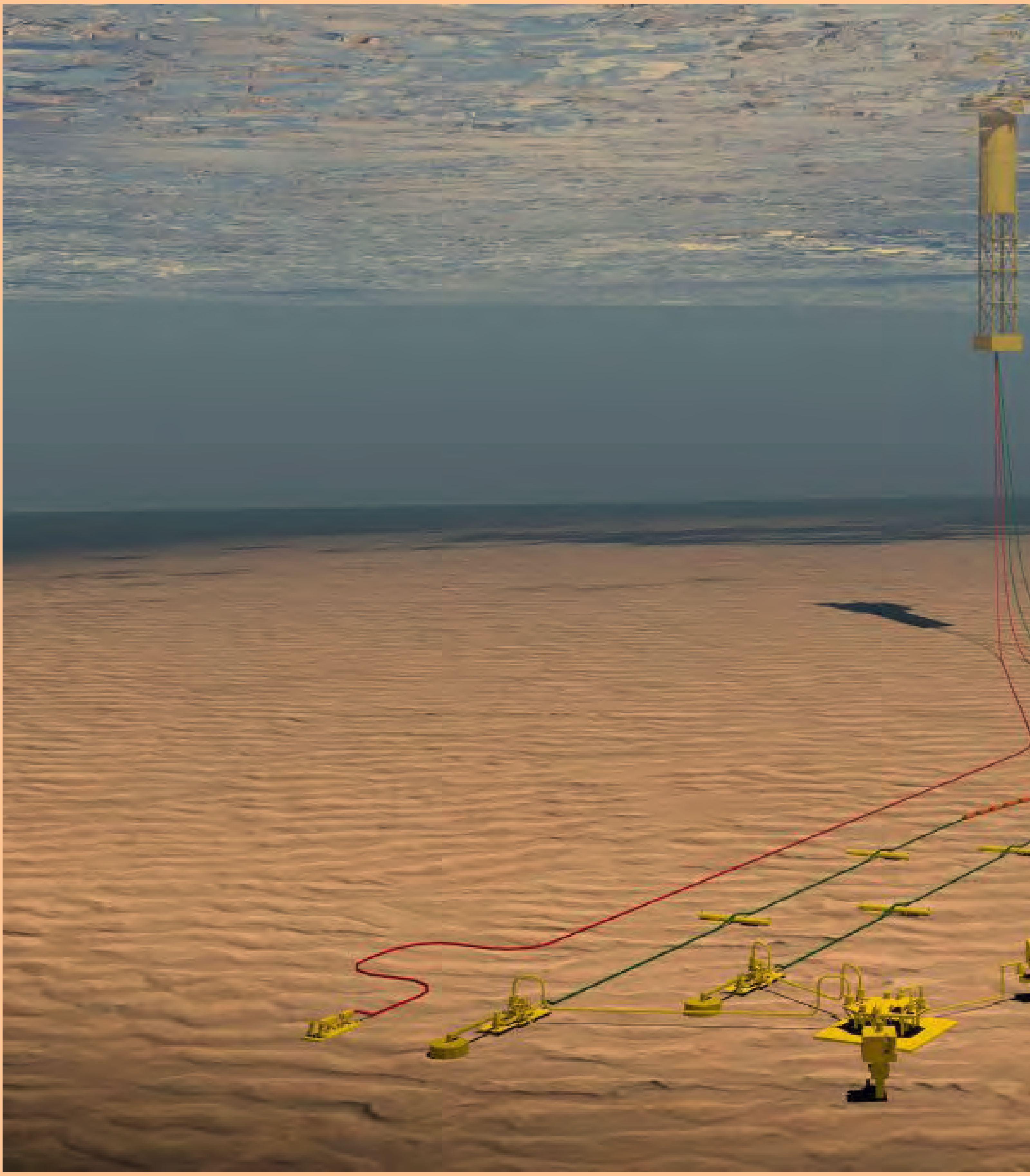
1. **Chevron and Total:** Twickenham, MC 610
2. **Chevron:** Crown, GC 717, 760, 761
3. **Murphy:** King Cake, AT 23
4. **GulfSlope:** Canoe Shallow/Tau, VR-SA 378; SS-SA 336/351
5. **ExxonMobil:** Thunder Horse East, MC 779/823
6. **Anadarko:** Unnamed wildcat, AC 380/424
7. **BP:** Manuel, MC 520/Isabela 2, MC 562
8. **Shell:** Caramel Keg, GB 961/962
9. **Shell:** Stones SW, WR 594/595
10. **Murphy:** Highgarden, GC 895

TECHNOLOGY

Tie-back is the way forward fo

Llog working on first development well at discovery in **Keathley Canyon** area, with **production** to be tied back to **Lucius** spar

RUSSELL MCCULLEY
London



Subsea design: a schematic of the Buckskin field

US independent Llog is completing the first of two development wells at the Buckskin project, the Louisiana-based company's first foray into the Gulf of Mexico's Lower Tertiary trend and, at nearly 6800 feet, its deepest subsea tie-back to date.

The Keathley Canyon-area development will tie back to the Anadarko-operated Lucius spar, 10 kilometres away in KC Block 875, and is expected to come on stream in mid-2019.

"We're fracking one of the zones in the first well as we speak," says Buckskin offshore construction manager Mark Farrow, who seems unruffled by the ultra-deep challenges, describing the proceedings as mostly "business as usual" for the operator.

"You just have to account for it in the design of the (subsea) system," which comprises "standard" 15,000-psi components and flowlines designed to withstand higher external pressure, Farrow says.

Buckskin was a 2009 discovery operated by Chevron, which initially considered developing the field as a standalone project before settling on a tie-back to Lucius. The US supermajor shelved the project during the oil price crunch and in 2015 transferred operatorship to Spanish partner Repsol.

The project languished until Llog early last year entered the picture, taking over as operator and picking up where Chevron left off.

"Repsol had a majority stake and was looking for someone to take an operating stake," he says.

"That's when we came in. We looked at the project and it fit well into Llog's sweet spot — the way we execute most projects, efficiently, without the bureaucracy larger operators may have that can impede projects."

Handling agreement

Llog inherited Chevron's previously negotiated production handling agreement with Anadarko, adds Farrow.

"If we had been given the project from the start, it may have been a contender for a floater. Because we believe we can execute those types of projects efficiently too."

Llog has built a reputation as an efficient operator that punches above its weight in its chosen region, leading on the subsea tie-back front in the deep-water Gulf of Mexico while operating the Exmar-designed Who Dat floating production unit and the similar, but larger, Delta House FPU.

"Our execution methodology (relies on) the ability to make decisions quickly," he says. "We're a very small group, and we discuss technical issues and plan projects accordingly among ourselves. We repeat what works well and do not bog ourselves down with unnecessary tasks. We just get on with it."

UK-based TechnipFMC is providing subsea hardware and flowline installation for the Buckskin development, while US contractor McDermott has been contracted to install the umbilicals. The pipe was manufactured by Tenaris and the umbilicals manufactured by Aker Solutions. "There's no secret technology involved," Farrow says.

"It's a little higher pressure and temperature than previously executed by Llog, but it's not anything the industry hasn't done previously."

Extreme depths

Llog worked with its longtime collaborator, Houston-based Pinnacle Engineering, on subsea design and management, joined by engineering teams from US heavy lift company Versabar, UK-based Ace Winches and riser specialist 2H Offshore.

The extreme depths present some weight challenges beyond what the operator has experienced on earlier projects, Farrow says. "Probably the biggest difference is the loads for the (steel catenary riser) pull-ins are much higher, so the equipment required to do the pull-ins is much bigger than we've seen previously," he says.

"We're using a linear winch from Ace in combination with Versabar to do the pull-ins."

Another challenge is the work involved on the Lucius spar, which is simultaneously being prepared for the tie-in of Anadarko's Hadrian North field.

"Anadarko is working well with us and we're very pleased with them. They're executing the work on the platform on our behalf," Farrow says. "We've had to add a couple of wing decks for chemical pumping and storage (equipment). We're also tying our pipes into their inlet headers—that's the scope of the work, basically.

"Nothing ground-breaking, but it is a lot of brownfield work on the platform," he adds.

Exploration schedule

Llog was one of the few US Gulf players to maintain an ambitious exploration schedule throughout the downturn and is now reaping the rewards, with several additional tie-back projects recently in production or in the works.

The Crown & Anchor development, in the Viosca Knoll area, earlier this year came on steam as a tie-back to another Ana-

r Buckskin project

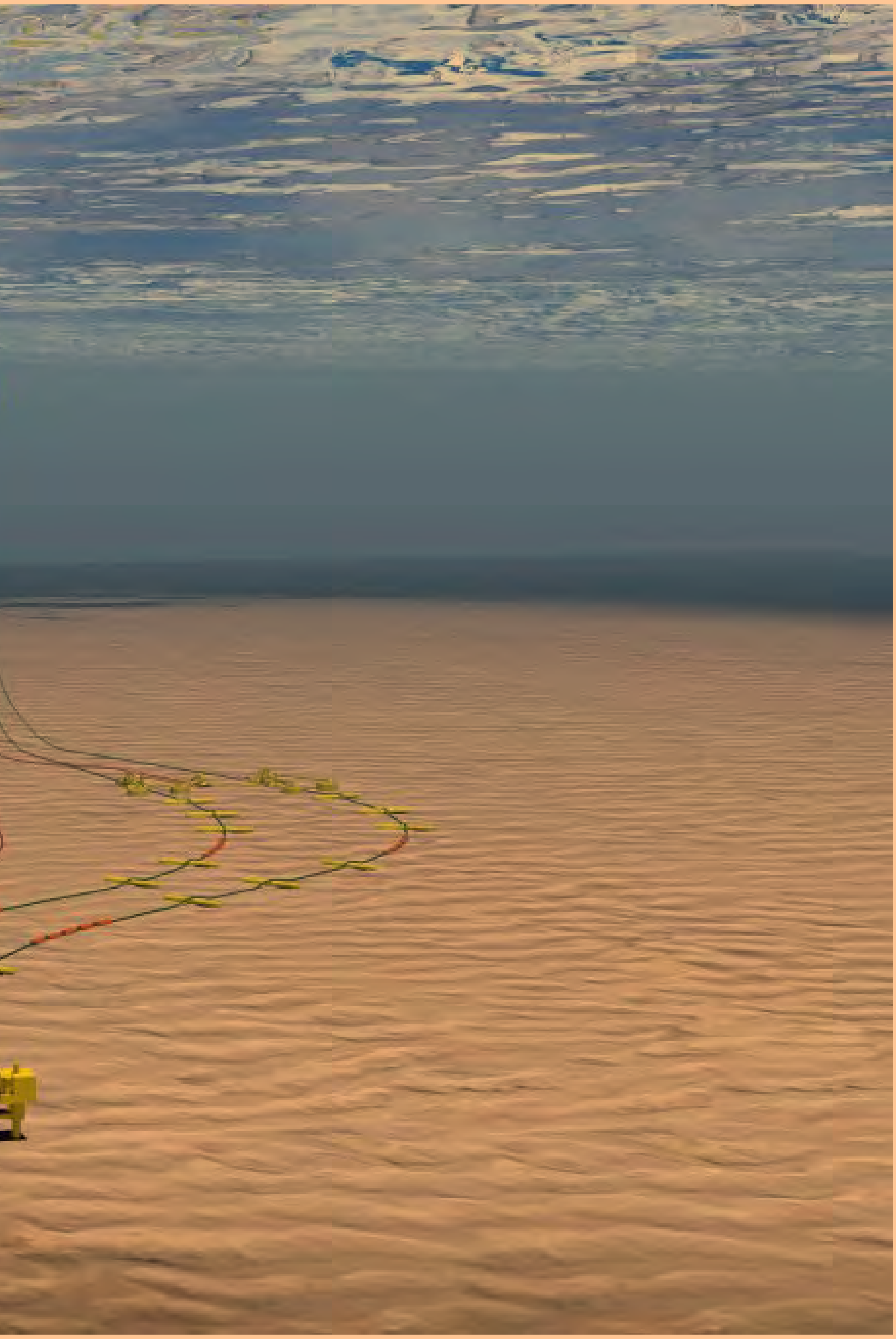


Image: LLOG EXPLORATION

darko-operated facility, the Marlin tension-leg platform. Also scheduled for start-up in 2018 are the Blue Wing Olive and La Femme, Red Zinger and Claiborne developments, all in the Mississippi Canyon area.

Buckskin will be followed in 2019 by Stonefly, another Viosca Knoll field that will be tied back to the Talos-operated Ram Powell TLP, a former Shell asset.

Farrow says no firm development decision has been made for the Moccasin discovery, which is near Buckskin and which former operator Chevron envisioned as a potential co-development.

"It's something I believe we have time to develop — we just received the lease last year and it's something we may look to develop in the future as a potential tie-back to the Buckskin infrastructure. And we made arrangements for that in the design," he says.

Future decisions

"We do have some other leases in the area," Farrow adds.

"We will see how this development performs, and obviously how it performs and produces will help us make some future decisions on our leases in the area."

Llog holds a 33.8% operated interest in Buckskin, with partners Repsol on 22.5%, Beacon Offshore Energy with 18.7%, Navitas Petroleum on 7.5% and two companies managed by Ridgewood Energy, each holding an 8.75% interest.

The project fit well... the way we execute most projects, efficiently, without the bureaucracy larger operators may have that can impede projects.

Collaboration sees more opportunities

SUBSEA tie-back developments helped deep-water Gulf of Mexico players weather the protracted industry downturn as operators took advantage of lower rig rates, competitive prices in the supply chain and efficiency improvements in their own operations to bring down break-even costs and move projects forward, *writes Russell McCulley.*

While the bottom of the down cycle may be behind the industry and costs likely to rise as a result, some trends — including a more cooperative spirit among producers — that emerged in the tough times could be lasting ones.

That could help operators make business cases for smaller finds that can be developed as tie-backs.

Discussing the company's Samurai prospect in the south-eastern Green Canyon area, Murphy Oil vice president of global exploration Greg Hebertson says the company had several opportunities to tie the field back to existing or prospective infrastructure nearby thanks in part to "a strong sense of collaboration in the market right now".

"The majors are much more open than they were a decade ago to bringing in third-party volumes," Hebertson says.

Meanwhile, Llog and others are moving ahead with tie-back programmes. The company brought its Crown & Anchor field on stream in June as a tie-back to Anadarko Petroleum's Marlin platform and expects to bring its Blue Wing Olive, Red Zinger and Claiborne fields into service this year.

Llog's Buckskin, a tie-back to Anadarko's Lucius spar, and Stonefly, a tie-back to the Ram Powell facility, are expected in 2019.

Anadarko is expected late this year or early 2019 to start production from the Constellation development as a tie-back to its Constitution spar, one of 10 floating platforms the company operates in the US Gulf.

Next year is also scheduled for start-up of the first Hadrian North expansion well, which will be tied back to the Lucius facility around the same time as Llog's Buckskin.

Anadarko plans to bring the Dorado tie-back to the Marlin platform on stream in the third quarter this year.

The operator in the second quarter of 2018 started production from a third tie-back to the Horn Mountain platform and the 12th development well at its K2 field, a tie-back to the Marco Polo facility.

"More than 30 development opportunities exist within a 30-mile (48-kilometre) radius of existing infrastructure with the potential to further expand this distance," the company says in its most recent operational report.

William Turner, senior research analyst at Wood Mackenzie, expects more subsea tie-backs to follow as the industry moves into ultra-high-pressure areas — "still elusive" reservoirs such as Chevron's Anchor, which he says will encourage surrounding development once the high-pressure equipment involved is approved.

Chevron has touted its technology development efforts to enable more challenging subsea tie-backs, including the promotion of 20,000 psi equipment, advanced reservoir monitoring techniques and extending the distance from subsea production systems to platforms.

Technology development could help usher in a new phase of Gulf of Mexico exploration in the mature Miocene basin and beyond.

"That's the commercial case for developing technology for subsea tie-backs in the Gulf of Mexico — to get them farther away, to increase that radius around an existing platform that we can tie back to," Turner says.

With project turnaround time much improved and ample platform capacity available, subsea tie-backs will continue to be an attractive development option for deep-water operators, albeit an increasingly challenging one as the Miocene basin matures, according to Turner.

The mature areas of the deep-water US Gulf still hold opportunities for subsea tie-backs in "roughly 20 million to 50 million barrel, Miocene-ish reservoirs that are relatively easy and inexpensive to drill", he says.

"We know them well. But we're not going to find significant volumes — the significant volumes have already been discovered in those reservoirs. Subsea tie-backs are not going to sustain production levels in the Gulf of Mexico."

Tie-back for Buckskin: Anadarko's Lucius spar development in the deep-water Gulf of Mexico Photo: ANADARKO

RIG MARKET

US Gulf rig demand set to stay flat

Sluggish demand for region's drillers likely to continue into **2020 or 2021**

On call: Transocean drillship Deepwater Thalassa
Photo: TRANSOCEAN

CAROLINE EVANS
Houston

DRILLERS in the US Gulf of Mexico are dealing with sluggish demand for their rigs, a situation that is likely to continue into the near term.

Only 23 floating units were active in the US Gulf in June, compared to the peak of 54 at the start of 2015, according to a monthly report from Clarkson's Research.

And while oil prices have improved, they have not moved the needle much on the US Gulf, which finds itself competing for capital with US onshore unconventional and some international projects.

"We're not seeing any kind of meaningful upside until 2020, and really 2021," Wood Mackenzie principal Leslie Cook tells Upstream. "And certainly for the next few years it looks like the Gulf of Mexico is going to stay somewhere in those low 20s, between 21 to 23 rigs."

More than half of the floating rigs under contract in the US Gulf are leased to three players — supermajors Shell, BP and Chevron.

Meanwhile, large independents Anadarko and Hess have contracted about 20% of the rigs working. "It's a pretty small group of players," Cook says.

And those players have other operations around the world that compete with the US Gulf region for investment capital.

Shell, for example, is "very actively planning on ramping up activity in Brazil," Cook says. "That will require some of their E&P expenditure."

Reined in

Additionally, Anadarko reined in its deep-water spending during the downturn to ramp up its US onshore activity.

"At one time Anadarko was probably one of the top three operators contracting rigs in the deep-water Gulf of Mexico, now they only have two rigs," she says.

But there could be some growth in the region if smaller independent operators start taking more rig contracts.

"What we don't have in the forecast right now would be more upside for those independents," Cook says. "We'll just kind of have to wait and see how that plays out through the end of the year."

Wood Mackenzie predicts US Gulf players will continue drilling infill wells and targeting known reservoirs for the time being.

But post-2020 growth is expected to come from the development of the high-pressure, high temperature Lower Tertiary trend.

However, the play will require fat wallets and new technology to develop. Chevron, Total and Equinor are expected to lead the charge.

"We do have some exploration upside built into our current forecast over the next five years — a few wells, some appraisal activity — but as far as the development of Lower Teriary goes, that's really more going to be happening past 2022," Cook says.

The anaemic market has caused a drastic drop in dayrates, though more than 75% of rigs currently running in the US Gulf are under legacy contracts that were signed before the oil bust began in 2014.

According to Cook, the average dayrate of rigs working right now is still around $470,000, though new contracts have considerably lower rates.

The average for an ultra-deep-water floater in May was between $120,000 and $140,000 per day, a 13.3% drop over three months, according to Clarksons.

While the US Gulf fleet is the youngest, most high-spec regional fleet in the world, those rates are half of what older harsh-environment rigs in the Norwegian North Sea go for.

"We think of rigs as being more of a global asset but we are starting to see differences among different regions just based on legacy contracts, operators in that region and the supply profile in that region," Cook says.

Low rates

The low rates have made it difficult for smaller drilling contractors to compete in the downturn. Currently, about 80% of rigs working in the US Gulf belong to just three contractors — Transocean, Seadrill and Diamond Offshore.

Those players have large fleets and have been able to take skimpier contracts because their operations have been underpinned by large legacy contracts.

Players with smaller high-spec fleets, however, could not afford the lower rates and instead opted to stack their rigs. A few of those are going back to work, such as the Rowan Relentless, which was recently contracted by ExxonMobil after sitting idle for more than three years.

However, it is not necessarily a sign of growing demand, Cook says.

"What we're starting to see is some of these smaller high-spec players in the floating rig space starting to realise that they're going to have to just bite the bullet and just start competing on some of these low rates, because the longer these rigs sit idle, the less chance they have of being contracted even over the next five years because there's so much competition in that space," she says.

"The rigs that are working, that are hot, that are crewed up, are going to be the leading contenders for the next job, as opposed to the rigs that are not activated right now."

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Rig Market

FLOATING DRILLING UNITS ACTIVE IN US GULF

Operator	Rig	Type	Block	Prospect	Water depth*	Company	Roll-off date	Dayrate
Petrobras	Petrobras 10000	drillship	WR 469	Chinook	8835	Petrobras	August 2019	
Shell	Transocean Deepwater Pontus	drillship	AC 728	Whale	8536	Transocean	October 2027	519
Shell	Transocean Deepwater Thalassa	drillship	AC 815	Silvertip	9184	Transocean	February 2026	474
Shell	Transocean Deepwater Poseidon	drillship	MC 940	Vito	3993	Transocean	February 2028	477
Chevron	Transocean Deepwater Conquerer	drillship	GC 640	Tahiti	4023	Transocean	December 2021	583
Llog Exploration	Seadrill West Neptune	drillship	KC 829	Buckskin	6654	Seadrill	November 2018	
Chevron	Pacific Sharav	drillship	MC 610		7089	Pacific Drilling	September 2019	550
BP	Seadrill West Vela	drillship	MC 775	Thunder Horse North	5669	Seadrill	November 2020	
BP	Helix Q5000	semisub	GC 743	Atlantis	5414	Helix		
BP	Seadrill West Capricorn	semisub	MC 520	Fourier	6616	Seadrill	July 2019	495
Llog Exploration	Rowan Resolute	drillship	MC 79	Otis	3861	Rowan	October 2018	
Anadarko	Diamond Ocean Blackhornet	drillship	VK 915	Dorado	3560	Diamond Offshore	June 2019	495
BHP	Transocean Deepwater Invictus	drillship	GC 653	Shenzi	4355	Transocean		
Shell	Noble Dan Taylor	drillship	MC 899	Crosby	4393	Noble	February 2019	482
Anadarko	Diamond Ocean Blackhawk	drillship	KC 919	Lucius	7393	Diamond Offshore	April 2020	495
Shell	Transocean Deepwater Proteus	drillship	MC 809	Ursa	3461	Transocean	April 2026	495
Hess	Diamond Ocean BlackLion	drillship	GC 512	Stampede	3580	Diamond Offshore	February 2020	400
Hess	Diamond Ocean BlackRhino	drillship	GC 512	Stampede	3535	Diamond Offshore	May 2020	400
Murphy	Transocean Deepwater Asgard	drillship	GC 432		3464	Transocean	November 2018	
DGE	Ensco 8503	semisub	MC 215	Odd Job	6001	Ensco	August 2018	
Marubeni	Ensco 8505	semisub	MC 496	Zia	1804	Ensco		
Chevron	Transocean Discoverer Inspiration	drillship	WR 758	Jack	6956	Transocean	March 2020	566
Fieldwood Energy	Cal-Dive Q-4000	semisub	MC 948	Gunflint	6094	Helix		
BP	ThunderHorse PDQ	semisub	MC 778	Thunder Horse	6033			
BP	Seadrill West Auriga	drillship	GC 825	Mad Dog 2	5192	Seadrill	July 2019	562
Chevron	Nabors MODS 400	semisub	WR 29	Big Foot	5187	Nabors		

* Water depth in feet.

On call: the Seadrill drillship West Vela (far left) and semisub West Capricorn (left)

Photos: BP/SEADRILL

LEGACY ASSETS

Players get back on track to rev

Companies **targeting older fields** rebuilding their momentum **after crude price downturn**

KATHRINE SCHMIDT
Houston

COMPANIES focused on revitalising older assets in the US Gulf of Mexico are regaining steam after the oil price downturn, carrying out merger and acquisition activity and even some out-of-the-box financial set-ups to recapitalise and move forward with their work.

One of the more creative arrangements comes from W&T Offshore, which recently signed a deal for $230.5 million in new capital from HarbourVest Partners, a private equity player, to fund up to 14 drilling projects in the US Gulf after the company underwent a restructuring and debt swap in 2016.

According to executives, this came in the form of a "drillco" agreement, or joint venture in which investors agree to contribute certain capital costs for a specified work programme in exchange for a wellbore interest and high cut of revenue from the initial production.

Such agreements have been rare in the US offshore province but have gained popularity in onshore shale basins.

"Being able to accelerate these wells was our primary driver in doing this drilling joint venture," W&T chief executive Tracy Krohn told a recent industry event.

"The good thing about this is it's repeatable, we feel like we can do that again and again... It allows us to get these things drilled quicker, so everything comes online quicker."

Net revenues

In the case of W&T, this involved the company getting 30% of net revenues from the drilling programme in exchange for contributing 20% of the well costs, plus providing the associated leases and infrastructure, according to a company release.

Once its investors hit a certain return threshold, W&T's share of well net revenue increases to 38.4%.

This spring, Baker Hughes signed a strategic partnership agreement with W&T to provide a range of services to the project, including drilling and evaluation, completions and well intervention and pressure pumping services. The company will also supply wellhead systems and subsea production systems.

W&T has also added a stake in the Heidelberg field to its portfolio as the successful bidder in a bankruptcy auction of Cobalt International Energy's assets.

Infrastructure: the Petronius field is among the assets in which EnVen has acquired a stake

The company presently has three rigs running in the province — including a platform rig off the Virgo asset in 1132 feet of water — and plans to start up another before the end of the year, Krohn said.

EnVen Energy revealed last month that the company has put out feelers to launch an initial public offering, confidentially filing an S-1 form with the US Securities & Exchange Commission — a rarity for a battered offshore sector that has seen only a modest number of new business start-ups and few public offerings.

EnVen, founded in 2014 with backing by private equity players Bain Capital and EIG, has since bought up stakes in a wide range of assets that broke deep-water barriers in their day but have since been sold off by the majors, including Shell's Cognac, Brutus and Glider fields and shares in Marathon's Lobster and Petronius assets.

Drilling programme

Since late 2017, the company has been carrying out a multi-well drilling programme at the Brutus and Lobster fields.

In an investor presentation, EnVen touted what it called the benefits and potential of the existing dry-tree infrastructure. "Platform drilling means lower rig cost and no subsea wellheads," the company said, with "time to first production within days of well work completion".

The "high quality infrastructure" is not expected to require major upgrades, and vast spare capacity at the facilities provides additional opportunities, EnVen said.

The company aims to spend some $450 million to $500 million at Cognac, Lobster, Brutus, Glider and on the Viosca Knoll 823 block over the 2018-2019 period.

The company expects the programme to add some 18,000 barrels of oil equivalent per day, at 80% oil, to its production profile by the end of 2019.

Fieldwood Energy also took the unusual approach of using a new acquisition — a $710 million deal for the Gulf of Mexico portfolio of Noble Energy — as the ticket out of a Chapter 11 bankruptcy process for which it filed the same day.

The deal was announced in February and closed within two months.

"This acquisition adds quality producing assets to our existing portfolio, provides us with numer-

italise assets

Photo: NETWORK PHOTOGRAPHERS

ous deep-water drilling opportunities and enhances our position as one of the largest operators in the Gulf of Mexico," said Fieldwood chief executive Matt McCarroll.

Finally, Stone and Talos Energy — fresh from a blockbuster discovery at the Zama field off Mexico — completed a $2 billion reverse merger deal last year that led to a Talos listing in New York.

Beyond work planned for the Zama discovery in Mexico, the company also aims to continue development efforts around the Pompano platform and Tornado discovery.

Ventures: W&T Offshore chief executive Tracy Krohn
Photo: ANTHONY GUEGEL

US GULF JACK-UPS AND PLATFORMS

Jack-ups Contractor	Unit	Status	Operator	Timeframe	Block	Water Depth*
Arena	WFD Rig 300	Active	Arena		ST 51	60
Arena	WFD Rig 350	Active	Energy XXI	End Sept 18	ST 54	66
Ensco	Ensco 68	Active	Castex	Aug-Dec 18		
Ensco	Ensco 87	Active	Fieldwood	July-Sept 18	SM 127	225
Ensco	Ensco 75	Active	Talos	Dec 18	EW 306	275
Ensco	Ensco 102	Active	Arena	Feb 19	EI 341	272
Enterprise Offshore	Enterprise 205	Active	Cantium		MP 30	45
Enterprise Offshore	Enterprise 264	Active	Fieldwood		ST 68	
Spartan Offshore	Spartan 208	Active	Cox	Oct 18	VR 245	132
Rowan	Rowan EXL III	Active	Cantium	July-Aug 18		
GulfSlope	Ralph Coffman	Moving to site	Canoe & Tau	June-Oct 18		
Platforms						
Walter Oil & Gas	H&P 203	Coelacanth			EW 834	1186
EnVen	Nabors	Lobster			EW 873	773
W&T Offshore	Nabors platform	Virgo			VK 779	1132
Walter Oil & Gas	H&P Platform	Megalodon			ST 311	392

* Water depth in feet
Source: CLARKSONS/BSEE

Jack-ups staging a comeback in the US Gulf's shallow waters

AFTER years of struggle, the US Gulf of Mexico jack-up market has seen a modest revival as capital has flowed back to players eager to take a fresh look at resources in mature shallow-water areas, *writes Kathrine Schmidt*.

Flaring to go: the jack-up Ensco 102 in action
Photo: AWE

As recently as 2009, the region's fleet was far more active, averaging 53 units that year, according to Clarksons data.

The count took a modest dive in 2010 and 2011 but rebounded in 2012 to 43 units.

But in the following years after the oil-price downturn, that count utterly cratered, falling as low as just two units in August of 2016.

Now industry counts show a total of about 11 jack-ups with contracts on the books in the region, with more firming up recently.

As older rigs have come off the market, utilisation rates have rebounded to about 58%, according to Clarksons.

Dayrates, meanwhile, have remained flat, allowing operators to take advantage of stable, lower service costs.

A standard-spec unit continues to go for between $40,000 and $65,000 per day, while a high spec unit stands at between $60,000 and $85,000, according to data from Clarksons.

Shallow-water player Arena Offshore, which last year bought up a number of jack-up rigs as part of its exploration push, has two jack-ups working in the area. So does Fieldwood Energy, and Cantium recently added a second unit.

Other players including Energy XXI, Castex, Cox and Talos all have one.

There has also been a flurry of announcements on new contracting activity.

As for high-spec units, private equity-backed US player Cantium recently picked up the Le Tourneau 116 unit Rowan EXL III for a firm two-well programme in the US Gulf of Mexico. The contract is to last 28 days ending sometime this month.

Cantium took the rig mid-June after it came off charter with US player Freeport McMoRan.

GulfSlope Energy has also signed the Ralph Coffman rig to tackle its upcoming Canoe Shallow and Tau prospects. Ensco recently highlighted new contracts and extensions for its jack-ups in the Gulf of Mexico.

Talos opted to extend a contract for the jack-up Ensco 75 for a total of 90 days to December 2018.

Fellow US independent Fieldwood Energy also extended its contract for the Ensco 87, adding four plug and abandonment wells, Ensco revealed.

After that work, ExxonMobil will pick up the same unit for two wells, with work expected to start in September and wrap up in November.

The US supermajor also has a one-well option, a six-well option and a three-well option on the unit, which is capable of operating in waters of up to 350 feet.

Also active are platform rigs aboard existing platforms, including EnVen off the Lobster platform, W&T Offshore from the Virgo facility and Walter Oil & Gas on its newer units of Megalodon and Coelacanth.

DECOMMISSIONING

Making the most of the life cycle

Fieldwood Energy reaps the benefits from strategy focused on **buying ageing fields from larger players**

CAROLINE EVANS
Houston

SOME might say the process of decommissioning is hardly the most appealing act when it comes to the lifecycle of an oil and gas project.

Or that the plugging, abandonment and disposal of old kit cannot hold a candle to the excitement of exploring a new field or targeting a previously untapped formation.

But plugging and abandonment is an integral part of being an operator in the US Gulf of Mexico, Fieldwood Energy chief executive Matt McCarroll says.

"I think there are a lot of misconceptions about P&A in general," McCarroll tells Upstream.

"I think there are a lot of people from a number of positions that make it out to be larger than it is. From us, it's an understood, expected and managed part of our everyday business."

Fieldwood has gradually bought up the historic fields of larger players in the US Gulf with an eye to revitalising production, and touted a fine-tuned decommissioning programme it has developed to address the backlog of plugging and abandonment obligations. It is now the fifth-largest US Gulf operator.

Since the company was formed in 2013 it has spent about $1.2 billion decommissioning 285 platforms, 964 wells and 310 pipelines. It has also reduced net asset retirement obligations by about $1.5 billion.

"We don't have some secret sauce," McCarroll says. "It's just focused planning and hard work."

Around 700 employees and more than 2500 contractors work for Fieldwood, which has more than 500 platforms across 2 million gross acres, representing production of about 75,000 barrels of oil equivalent per day. "Because of the size of our asset base in the Gulf of Mexico, we own more wellbores and platforms than anyone else in the Gulf, and so based on that we have a lot of P&A obligations that go along with that number of fields," McCarroll says.

Favourable contracts

The company's size allows it to negotiate favourable contracts and award a significant amount of decommissioning work.

It has also reaped efficiencies through consistency and continuity of work, says John Seeger, Fieldwood's senior vice president of decommissioning and deep-water operations.

"For example, we have two derrick barges that have worked for us for the past four years, consistently," Seeger says.

"They can remove a platform a day or two less than anybody else because they have that continuity and that efficiency. That's what's

Rigs-to-Reefs gives incentive to US Gulf operators

OPERATORS that decommission platforms and other infrastructure in the US Gulf of Mexico may face additional costs to haul away and dispose of old iron, *writes Caroline Evans*.

One option to mitigate these costs is the Rigs-to-Reefs programme, which gives operators an incentive to donate obsolete structures to become artificial reefs in the US Gulf.

An eight-leg structure can provide a home for 12,000 to 14,000 fish, while a four-leg structure can provide up to three acres of habitat for hundreds of marine species, according to the US Bureau of Safety & Environmental Enforcement (BSEE).

As of April of this year, 532 platforms previously installed on the outer continental shelf have been reefed in the US Gulf, according to the BSEE.

Fieldwood Energy chief executive Matt McCarroll says his company has used the programme to dispose of more than 50 platforms over the past four and a half years. "The best fishing in the Gulf of Mexico is around the existing platforms," he says.

"So taking those platforms completely out of the water impacts some of the marine life, and if we can find a way to leave them in the water, either where they were previously or at some designated reef site, it helps the ecosystem underwater, and it's a benefit to some cost savings to us. It's a great programme."

Removal: topsides decommissioning in US Gulf of Mexico
Photo: FIELDWOOD ENERGY

going to save us money and it's going to make the contractor money as well."

In addition, the company built up the internal capacity to tackle its well abandonment activities three years ago.

McCarroll says the move has been successful.

"We went out and bought our own equipment, we hired our own employees to do the work," he says.

"We bulk purchased cement and plugs and consumables that are used in that work, because we made the decision that we can do that work more safely and more efficiently than the contractors that were available.

"We don't do that as a profit centre, we don't do that as a service provider to other operators," McCarroll adds.

"We just do it for ourselves and its turned out to be a very successful change."

New requirements on the way for players

Asset decommissioning rules set for change

US Gulf of Mexico operators are optimistic they will see friendlier requirements for furnishing financial proof of their ability to decommission ageing assets later this year, *writes Caroline Evans.*

Fieldwood Energy chief executive Matt McCarroll says the new rules are expected to be unveiled in "weeks and months, not years", likely before the end of 2018.

"We don't have a final resolution yet but we're very optimistic we will be getting a set of requirements that work for all parties," McCarroll tells Upstream.

The Obama administration had moved to tighten up plugging and abandonment policies in recent years following the high-profile bankruptcy of ATP Oil & Gas, contending that taxpayers should not be left at risk of having to clean up oilfield kit once it outlives its useful life.

The Trump administration last year put the requirements on hold while they are under review.

The industry had argued that the US system already ensured that previous leaseholders were responsible for unmet liabilities.

It has also found fault with estimates produced by regulators for how much additional bonding should be required.

McCarroll says US Gulf players have asked the US Bureau of Safety & Environmental Enforcement (BSEE) to use operators' estimates of their remaining obligations, rather than the government's estimates.

Their argument is that operators know more about their properties and that regular audits ensure the numbers are current.

"Those are discussions that are still happening between BSEE and industry and we hope to reach some resolution with that," he says.

"It's something that we have a lot of data on and it's something that our auditors spend a lot of time on. Conversely, BSEE comes up with their own estimates of what that work will cost in the future, and those estimates vary greatly among operators."

McCarroll also says the Obama-era policies made harsh demands on operators already battered financially by the low oil price environment. "There have been a number of companies that have gone through bankruptcy and gone out of business in the Gulf of Mexico over last 20 years and for the most part, without exception, the industry has figured out a way to keep the government from having any exposure financially for those abandonment obligations," he adds.

"So we do a pretty good job as an industry of managing this problem, or the potential problem ourselves. Too much government intervention in this would be very problematic."

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Decommissioning

REGULATIONS

Tide is still out after changes to US offshore

Industry waiting to see how revisions to policies will affect business

JULIA MARTINEZ
Houston

OPERATORS in the US Gulf of Mexico have experienced several major changes since President Donald Trump's administration entered office, including a proposed expanded offshore programme, upcoming revisions to a well control rule, lower shallow-water royalties and updated plug and abandonment regulations.

As the offshore market looks to rebound in a higher oil price environment, the US Interior Department is searching for ways to entice players to the prolific region. But it is too soon to tell whether the changes will make a sizeable impact.

The Trump administration started its offshore agenda with a bang by proposing a massive expansion of offshore acreage to include about 90% of the US outer continental shelf, an area covering coastlines from Alaska through the Pacific coast, the Gulf of Mexico and the Atlantic.

The plan proposed 47 lease sales over the five-year period from 2019 to 2024, and would replace the 2017-2022 plan implemented by the Obama administration.

Interior Secretary Ryan Zinke's expansion plan was quickly met with opposition by both Democrats and Republicans from states such as Florida and California, among others.

However, it is still uncertain which, if any, of these areas might or might not end up in future sales.

The Interior Department, which handles outer continental shelf lands, has been working to gather and analyse public comment on its initial draft proposal, collecting more than 2 million opinions on the expansion over 23 meetings.

Bureau of Ocean Energy Management (BOEM) officials say the agency expects to issue a proposal later this year, followed by a 90-day comment period.

The final programme could be submitted for congressional approval in late 2019.

Ambition

Randall Luthi, director of the National Ocean Industries Association offshore trade group, does not begrudge the administration's ambition on the issue.

"The proposal was very expansive and we think it should've been," Luthi tells Upstream. "That's the kind of conversation you really need to have."

He does not expect all areas included in the proposed plan to eventually open for business, but suggests that the "easiest and most logical place" for new exploration is the Eastern US Gulf.

Most areas off Florida remain under a leasing moratorium until 2023, and there has also been opposition from the US military.

However, potential is still there. "This is a whole new generation of exploration," Luthi says, adding that existing ports, boats, rigs and platforms in the Central US Gulf are all within easy reach of areas now closed to drilling.

Meanwhile, US Gulf lease sales continue on a twice-yearly basis, but under an Obama-era rule are offering both Central and Western Gulf acreage at every sale, with the next, Sale 251, set for 15 August.

Offshore observers have also been waiting on a revised version of a well control rule that was put in place after the 2010 Macondo disaster.

With the Trump administration promising to roll back regulations adopted by the previous administration, the Bureau of Safety & Environmental Enforcement in May issued an amended regulation that has largely been cheered by the industry.

The agency said in April it had determined that 59 of the 342 provisions of the 2016 rule were "appropriate for proposed updating and revisions".

Luthi says the 2016 rule had raised industry concerns that it was not making anything safer, only more expensive. The change would leave intact some earlier rules while amending others.

"It's still going to require blowout preventors to work, and that was the purpose of the rule to begin with," he says. "But we think it's going to be a better rule because it's actually taken into account technology that the industry now has, and how to best meet those goals."

An extended public comment period closed on 6 August, with a final rule expected shortly.

US regulators have also toyed with the idea of tweaking offshore royalty rates to encourage more investment, and ultimately opted to do so in shallow water, dropping the level to 12.5%. The

US Gulf operators showing willingness to share information on

THE US Bureau of Safety & Environmental Enforcement (BSEE) says it is seeing a significantly higher participation rate from the oil and gas industry in a programme to share information on offshore incidents, *writes Julia Martinez*.

The department said in a recent report that the participation rate in the SafeOCS programme stood at 59% in 2017 and that it aims to get even more players to take part. The ultimate goal of the programme — which collects data on operations on outer continental shelf land managed by the Interior Department, specifically the Gulf of Mexico — is "to identify proactive steps to mitigate risks and ensure offshore operations are safe, reliable and environmentally sustainable," BSEE director Scott Angelle says.

The report also marks a full year of reporting after a 2016 well control regulation took effect, which requires confidential reporting of equipment failure data.

"But we are not stopping there," Angelle adds. "Increasing participation in SafeOCS and sharing safety data across industry are critical for generating meaningful analysis."

The programme was expanded after the BSEE's well control rule was adopted in 2016 to include an industry-wide data repository for equipment failures.

The system was created in 2013 jointly with the US Department of Transportation's Bureau of Transportation Statistics.

In 2017, a total of 18 of 25 operators involved with US Gulf rig operations reported 1129 events, which occurred on 45 rigs out of the 59 units operating in the region during the period. Those 18 operators accounted for 90% of all new wells drilled.

In a six-month period in 2016, a total of 14 of 20 operators reported 821 incidents.

The BSEE noted that translated into a lower rate of incidents year-on-year, from 122.3 in 2016 to 59.8 2017, adjusted for rig activity and defined as event per 1000 blowout preventor days.

Leaks were still the most frequently reported observed failure with a rate of 73.4%, an increase compared with 2016. Wear and tear also remained the most frequently reported root cause failure in 2017, similar to the prior year, with 633 total notifications making up 56% of all root cause

Direction: US Interior Secretary Ryan Zinke
Photo: REUTERS/SCANPIX

administration had contemplated doing the same for deep water.

However, in April, Zinke said he opted to stick to current royalty rates — 18.75% for all deep-water fields — citing improving market conditions.

That was a disappointment for industry groups, which cited tepid interest at recent lease sales.

The last lease sale for Central and Western Gulf acreage brought in $124.7 million in high bids, a far cry from a decade ago, before the US shale boom, when US Gulf sales were raking in billions of dollars. Luthi believes lower deep-water royalties could lead operators to produce for longer, securing cash flow to the government and allocating more time for companies to come up with plugging and abandonment strategies for ageing fields.

That process is one where Luthi believes there is more work to be done.

He expects that by the end of the year the Interior Department will offer a new proposal to handle P&A obligations in the US Gulf.

The Obama administration's BOEM issued a new directive on determining operators' P&A obligations that was designed to sort out a host of issues with a previous system.

The older system had run into trouble during the oil price downturn, when small-scale operators were being forced to cough up extra guarantees to cover the liability when their reserves lost value.

However, industry was not happy with the new plan or the estimates the government came up with for what the fields would cost to abandon, saying they could do it for less. The new programme was put on hold.

So far, Luthi supports the administration's shift in focus to concentrate on the few leases that did not have a viable owner to pay off fees.

"We think there are still a lot of ways to ensure that that liability is covered," he says. "Now we're looking forward to a proposal so we can comment on it. Open dialogue and communication is so important on this issue because it's complicated."

offshore incidents as BSEE scheme brings results

notifications. The reporting also includes inspections of subsea BOP stacks, or "stack pulls". The BSEE noted a drop in the rate of unplanned pulls to 5.6% in 2017 from 7.2% in 2016.

However, out of the 18 components involved in the unplanned pulls, only a dozen were sent to shore to be analysed further by either a third party or the original equipment manufacturer.

The department said this was despite the expectation to receive a root cause failure analysis for each recorded stack pull.

However, the BSEE noted that companies were able to catch more potential failures when they tested components not in operation, seeing the rate rise from 78.5% to 85.4% in 2017.

The agency said that figure "indicates a practice of pre-emptive effort at increased testing on deck and/or during deployment, potentially leading to reduced failures while in operation."

Compilation: BSEE director Scott Angelle
Photo: BSEE

New tariffs add up to uncertainty

POSSIBILITY OF HIGHER COSTS

Operators face battle through red tape

THE introduction of a controversial 25% tariff on imported steel and 10% on aluminum by US President Donald Trump's administration has injected new uncertainty for the offshore industry as operators navigate reams of exemption paperwork and the possibility of higher costs for capital projects, *writes Julia Martinez*.

While the administration offered a chance for companies to apply for exemptions if they could show the US did not produce the steel products in sufficient quantities, industry associations such as the American Petroleum Institute (API) have called for more transparency regarding the process.

BP, Hess, Shell and Chevron are among the companies that have submitted exemption requests for a range of oil tubular goods, including products set to be used in offshore projects such as BP's Mad Dog 2 and Hess' Stampede.

The US Commerce Department launched the first set of tariffs in March, which the administration justifies under a US trade provision known as Section 232 allowing the US to weigh the effects of imports in light of national security concerns.

Another round, citing Section 301 of US trade law, targets $50 billion in Chinese imports on intellectual property theft concerns.

The API's senior advisor for international policy, Aaron Padilla, testified in late July to members of the Section 301 committee of the US Trade Representative that the tariffs have affected around 100 products, including pumps, motors and valves, among other things.

"Further, expanding the current list of 301 tariffs would cause disproportionate economic harm to the US natural gas and oil industry as it would not be possible to relocate the sourcing of these products quickly and still meet the industry's exacting product reliability specifications and standards," Padilla said.

"We share the administration's own goal of promoting American energy dominance, but it has become clear that the implementation of import restrictions on imported steel and other products undermines domestic energy production."

Supermajors such as Shell and Chevron applied for exemptions and were granted some, while others were rejected due to what administration officials called incomplete applications. Requests from other companies were denied.

OVERSEAS COMPANIES

Australian juniors are thriving

On location: the Ensco 68 rig at South Marsh Island Block 71 Photo: OTTO ENERGY

Companies including **Byron Energy** and **Otto Energy** making the most of **low costs** in **US Gulf** and building on **experience**

KATHRINE SCHMIDT
Houston

THE shallow waters of the US Gulf of Mexico have proven fertile ground for a handful of small Australian companies that praise the region's economics, short cycle times and abundance of seismic data.

The Antipodean players are now gaining steam as oil prices rise.

Formed in 2013, independent Byron Energy helped lead the charge as an Australia-listed junior staffed by a range of experienced Gulf of Mexico explorers.

The company brought on production at its first development in the region in March earlier this year, turning on the taps from two wells from a refurbished but newly installed tripod platform at South Marsh Island Block 71, where the company has been exploring for untapped deposits around historically fertile Gulf of Mexico salt domes.

Further exploration

Byron also announced this month that the company had taken another step to explore further in the area, signing a letter of intent with the operator of SM 73 to allow the drilling of a well from an existing platform to the company's SM 74 leasehold. It also announced it had farmed down a 30% stake to fellow Australian player Metgasco.

"The pursuit and fruition of this deal is a testament to the skill, experience and strategic thinking of the Byron team," Byron chief executive Maynard Smith said, adding that the opportunity to test the prospect from an existing platform brings down costs for the plan and potential time to first production.

"The consistent production from our SM71 F1 and F3 wells and current high oil prices are providing strong cash flow and opportunity for our company. This is a significant step in expanding our position in the Gulf of Mexico and we hope to add another revenue stream in the very near future."

The volumes are too small to interest the majors but seem to suit the independents just fine.

Byron's gross production was 330,239 barrels of oil, or 134,160 net to Byron, for the three months to June, just over 3600 barrels per day gross or just under 1500 bpd net.

Net gas production for the company was 116,950 million British thermal units. That led to revenue of about $9.1 million in the second quarter. Partner Otto Energy has also been active with a non-operated stake in the SM 71 development and is now gearing up to drill a well alongside Byron at another prospect in an area of state waters off Louisiana called Bivouac Peak.

Otto last week also announced it would be stepping up efforts by signing a joint venture with privately held US player Hilcorp to drill eight prospects either onshore or nearshore in the region.

Otto will pay 50% of the drilling costs, with the net cost to the company estimated at $37.5 million. "The Gulf shelf, because it's established infrastructure, is one of the lowest-cost operating environments in the world," Otto managing director Matthew Allen tells Upstream. "Not just available infrastructure, but you can bring it on quickly."

Global reach

While in some areas lead times will measure years or even decades, "in the Gulf of Mexico, it's measured in months," Allen says. "It makes a huge difference to your return on capital as a small company."

Otto is staffed by a range of geologists who previously worked for majors such as Shell and Woodside, and like many Australian companies has built a global reach.

The team developed a successful set of assets in the Philippines with the Galoc development, but in 2014 opted to sell off its 33% stake to Nido Petroleum for $108 million. That gave Otto cash to spend on a new project during a global price downturn, and the company ultimately picked the US Gulf.

"We decided what we wanted was a jurisdiction with relatively low political risk and established petroleum systems and infrastructure," Allen says.

Members of the company's team had worked the Gulf of Mexico shelf back in the early 2000s, when competition had been fierce and the best seismic expensive.

But by 2014 the majors had moved on to deeper waters or to shale, meaning cost to entry was low despite the proliferation of seismic data, so they decided to pounce on the opportunity.

"Nobody had capital, nobody was drilling and conventional shelf plays had lost their appeal," Allen recalls. So they went for it — while making a point of avoiding old infrastructure to minimise plugging and abandonment obligations.

The company booked revenue of $11.2 million in the second quarter before royalties and operating costs, and reported net total output of 165,120 barrels of oil and nearly 122 million cubic feet of gas.

Over the next two years Otto, which has also picked up acreage in Alaska, aims to grow production to about 5000 bpd.

Allen himself is making the move to Houston as business begins to pick up, and while Australians make up most of the team, the company is determined to bring in a wide range of talent, including Gulf Coast locals.

Allen concludes: "We're looking forward to growing our business."

The Gulf shelf, because it's established infrastructure, is one of the lowest-cost operating environments in the world. Not just available infrastructure, but you can bring it on quickly.

Otto Energy managing director Matthew Allen