



Exxon hits pay off Guyana; block could hold over 2.0 Bboe

ExxonMobil's Snoek-1 exploration well offshore Guyana has yielded the supermajor's third discovery in the Stabroek Block. The well was drilled to 5,175 m TD, intersecting 25 m of high-quality, oil-bearing sands of similar age as the supermajor's previous Stabroek finds. The well is 9.0 km southeast of the Liza-1 discovery well in water 1,563 m deep. Exxon didn't provide a resource estimate for Snoek-1, but the oil column is at least 65 m shorter than that found at Liza-1. However, it is on par with Payara-1, which found 29 m of oil pay in November 2016.

Third find in Guyanese block intersects 25 m of net oil pay in high-quality sands.

Just prior to hitting pay at Snoek-1, Exxon estimated that the Stabroek Block likely contained 1.4-2.0 Bboe recoverable, with Liza accounting for 800 MMboe to 1.4 Bboe of the total. Wood Mackenzie believes that Exxon will develop the finds via two large FPSOs: one capable of 150,000 bo/d at Liza and Payara and another at Snoek with capacity for 80,000 bo/d or 120,000 bo/d depending on the size of the discovery. Liza is being fast-tracked with an FID for a 120,000 bo/d project expected this year. [▶ Continues On Pg 11](#)

Qatar expanding North Field to protect LNG market share

Qatar Petroleum will develop a new gas project in the southern part of its giant offshore North Field that will increase production by 2.2 Bcf/d to a total of 22 Bcf/d in five to seven years. The project ends a 2005 moratorium put in place to preserve the asset and allow time to understand how the field would react after rapid expansion of gas production. The company has carried out several studies and drilled many appraisal wells into this part of the field.



The company did not say how the expansion would be handled, but the most likely scenario would see Qatar invest several billion dollars on new wells and surface platform infrastructure in addition to pipeline connections to the country's LNG production facilities. The LNG facilities would also be candidates for expansion to process the additional gas the project would supply—enough to produce up to 15.5 mtpa of LNG, lifting Qatari LNG volumes nearly 20% to 93-94 mtpa.

Will add enough gas by 2022-2024 to increase LNG volumes 20% to 93-94 mtpa.

This planned increase in Qatari output comes amid a deep slump in global LNG prices brought about by a gas glut. [▶ Continues On Pg 6](#)

Eni well suggests upside to 800 MMbo estimate off Mexico

Eni's Amoca-2 exploration well offshore Mexico has found a significant amount of pay. The well was drilled to 3,500 m TD, 2.1 km from the Amoca-1 discovery well, and intersected 110 m of net oil pay in several good-quality Pliocene sands, of which 65 m were discovered in a deeper, previously undrilled horizon. The well confirmed the presence of 18°API oil in the shallower formations, while the pay in the newly discovered deeper sands consists of high-quality light oil.



Although Eni is still assessing the find, the company believes Amoca-2 indicates meaningful upside to Area 1's original estimate of 800 MMbo in place. Eni is already evaluating options for a fast-track, phased development using existing infrastructure—the same strategy Eni is using at its Zohr discovery offshore Egypt. Amoca lies just 6.0-7.0 km from Pemex installations, and Eni CEO Claudio Descalzi said his company would soon begin negotiations to gain access to Pemex's facilities.

Amoca-2 confirms heavy oil and finds 65 m of light oil pay in deeper formation.

"This is an important find," said Descalzi, "We've found new layers of good light oil that make us think there's more." [▶ Continues On Pg 10](#)

Hurricane's West of Shetland work may yield 1.0-1.3 Bbo

Hurricane Energy signaled in February that the initial resource estimate for its Lancaster-Lincoln discovery in the UK's West of Shetland region was likely too conservative. Now, the fractured basement explorer believes that Lancaster likely contains a recoverable 593 MMbo—three times the 200 MMbo estimate that a 2013 independent assessment of the find had Lancaster pegged at. The new resource estimate is based on a best-case 2P reserve figure of 2.36 Bbo plus a 25% recovery factor—although Hurricane notes that higher recovery than that has been seen at other basement fields.



Halifax well confirms oil column of at least 1,156 m at Greater Lancaster.

However, Lancaster is part of a larger Rona Ridge structure that can be divided into two parts by the Brynhild Fault: Greater Lancaster, which includes the recently drilled Halifax well and its minimum oil column of 1,156 m; and Greater Warwick, which consists of the find at Lincoln and the undrilled Warwick prospect. [▶ Continues On Pg 4](#)

DEALS FOR SALE

<p>GULF OF MEXICO PROPERTIES 94-Total Wells. 36-Active (Producing). OFFSHORE LOUISIANA, TEXAS.-- --& ALABAMA 18 Blocks. ~11,388 Net Acres. ~33% NonOp WI; ~27% NRI Net Prod: 707 BOED (52% Oil) May 2016 Net Cash Flow: \$376,650/Mn Net PDP Reserves: 395 MBO & 1.1 BCF PP 5342DV</p>	<p>PLS PP >350 BOED</p>
<p>ASIA-PACIFIC BANKRUPTCY SALE ONSHORE PAPUA NEW GUINEA 5-DISCOVERIES. LARGE-SCALE NG & LNG PLAY 1.2% Indirect Participation Interest Est Y/E 2015 2C Resource: 10.0 TCF PP 2062DV</p>	<p>PLS PP 10 TCF</p>

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North Sea & Western Europe

Statoil cuts costs in half for Johan Sverdrup second phase

Statoil greenlighted Phase 2 of its giant Johan Sverdrup field in the North Sea. The phase will bring total production to 660,000 bo/d—10,000 bo/d higher than previously planned. Statoil will drill 28 more wells flowing an expected 220,000 bo/d. It will also install a second processing platform; subsea production equipment at three satellite locations—Avaldsnes, Kvitsøy and Geitungen—and equipment to power the field and the greater Utsira High region from shore.



Phase 2 will start up in 2022, three years after Phase 1, and

cost \$4.7 billion, less than half of what Phase 1 cost. This puts project breakeven at \$25/bbl. The relatively inexpensive spend is a result of steep cost reductions by key suppliers like **Aker Solutions** and **Kvaerner**. An example is optimization of the processing train so only one is needed. Additionally, the number of wells was reduced by 14, bringing the field total to 49. Phase 2 wells will still result in a 50% increase in volumes over Phase 1 and allow Statoil to retain its goal of achieving a 70% recovery rate from the field.

Phase 2 will increase the field's total volumes by 50% to 660,000 bo/d.

Optimized engineering allows Johan Sverdrup's breakeven to hit \$25/bbl.

Although Phase 1 is on course, a major issue is availability of **Allseas'** Pioneering Spirit heavy-lift vessel. It is the only vessel capable of installing the field's topsides as designed. Norway is considering new labor laws that could threaten use of the Pioneering Spirit.

The field's recoverable volumes are estimated at 1.9-3.0 Bboe. Once fully online, it will account for 25% of Norwegian oil and gas production. Statoil operates and owns 40% WI. The other partners are **Lundin Petroleum** (22.6%), **Petoro** (17.36%), **Aker BP** (11.58%) and **Maersk Oil** (8.44%).

Although Phase 1 is on course, a major issue is availability of **Allseas'** Pioneering Spirit heavy-lift vessel. It is the only vessel

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Statoil resets Gulf of Mexico program, secures 13 leases.

Serica eyes 2020 for delayed North Sea gas development

Serica Energy aims to have Columbus field's 104 Bcfe (75% gas) in the UK North Sea operational by 2020 via one of two competing development options. The first entails drilling an extended-reach development well from **Shell's** Lomond platform, which is 5.0 km from Columbus. The second would see a subsea well drilled and connected via a third-party pipeline to Shell's Shearwater platform.



Columbus is a **BG** gas and condensate discovery that lies in the Central Graben region of the UK North Sea that was originally due to be on stream in 2015. However, BG, now owned by Shell, forced a delay when that company ended plans to build a bridge-linked platform adjacent to Lomond field that was to have taken Columbus' gas. The ensuing price decline and Shell's takeover of BG forced further delay. Columbus lies in Block 23/16f and is owned by Serica (50% WI, operator), **Endeavor** (25%) and **EOG Resources** (25%).

■ **Eni** will carry out a new, 1,800-sq-km multi-client 3D seismic survey of FEL 3/04 offshore Ireland. The objective is to collect data on the potential of the undrilled Dunquin South prospect, a Lower Cretaceous carbonate target. The survey will also probe the Dunquin North structure, which was drilled by **ExxonMobil** in 2013. FEL 3/04 is owned by Eni (37% WI, operator), **Repsol** (33.5%), **Providence Resources** (27%) and **Sosina Exploration** (2.5%).



■ Norwegian Petroleum Directorate approved **ExxonMobil's** request to continue to use Sigyn field's subsea facilities until the end of 2022. The extra time will allow for an additional 18 MMboe to be produced. Sigyn started up in 2002 as a three-well subsea tieback to **Statoil's** Sleipner A platform. ExxonMobil (40% WI) operates with Statoil (50%) and **Norsk Hydro** (10%).

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April 2017 International Rig Count

	March-17			February-17			March-16		
	Land	Off	Total	Land	Off	Total	Land	Off	Total
Europe	63	31	94	69	38	107	58	38	96
Middle East	341	45	386	337	45	382	354	43	397
Africa	70	10	80	68	9	77	71	20	91
Latin America	150	35	185	147	32	179	178	40	218
Asia Pacific	122	76	198	120	76	196	113	70	183
International	746	197	943	741	200	941	774	211	985

Source: Baker Hughes Inc.

Operators find pay close to recent discoveries

International E&Ps chalked up a successful month of drilling, but it mostly took place in already proven areas. Most notably, **Eni** found much more oil than it expected at its recently drilled Amoca-2 well off Mexico and is now readying appraisals and examining development options (PG. 1).

Across the Atlantic, fractured basement player **Hurricane Energy's** Halifax well intersected more than 1,000 m of net pay. The company possibly has over 1.0 Bbo of recoverable oil at West of Shetland in the UK North Sea (PG. 1). **Exxon** scored another find off Guyana (PG. 1).

Players accumulate finds in known areas, not tempted into frontier work.

BP hit gas off Egypt for its third find in North Damietta Block (PG. 5). **Cairn** tallied its eighth successful well off Senegal (PG. 8). **Eni** found pay off Libya, testing a gas and condensate find at 7,000 boe/d (PG. 5), and **Canacol** found heavy oil offshore Colombia (PG. 9).

Development projects also continue to be a focus as companies remain content to develop what they already have. **Statoil** greenlighted Johan Sverdrup Phase 2 (PG. 2) off Norway, for instance, while **Alpha Petroleum** (PG. 3) and **Serica** (PG. 2) concentrated on putting their respective UK North Sea assets on stream. The same pattern of standing pat on already proven resources is also being followed by **KrisEnergy** in Cambodia (PG. 11) and **Borders & Southern** off the Falkland Islands. (PG. 9) Still, there might yet be appetite for frontier risk, as results from the UK's new offshore licensing round seem to show. (PG. 19)

North Sea & Western Europe

Alpha nears decision on 30,000 bo/d Cheviot redevelopment

Alpha Petroleum is expected to make a final investment decision in 3Q17 on its FPSO-centered redevelopment of Cheviot field offshore UK. Based on new 3D seismic and old production data, the company estimates that Cheviot's remaining gross reserves are 100-300 MMbo with 55 MMbo recoverable. First oil is targeted for 2019 at 30,000 bo/d.



Formerly known as Emerald, Cheviot was discovered in 1975

in the North Viking area of the UK North Sea in Blocks 2/10b, 3/11b and 2/15a some 100 km east of Shetland. From 1992-1996, Cheviot produced 16 MMbo from Upper Jurassic sands, but insufficient water-handling capacity led the operator to abandon the field after only 8.0% of its original oil in place was recovered.

Filed in 2015, Alpha's redevelopment plan calls for the drilling of a minimum of 18 wells, including 13 production wells, two water injectors and two gas injection wells. In addition, two satellite discoveries—Peel and Padon—will be put on stream. The plan also envisions Cheviot's facilities being used as a hub for other nearby discoveries.

Alpha recently signed a FEED agreement with **Teekay Offshore** for use of its Varg FPSO to develop Cheviot field. Options exist to allow for additional infill wells to increase ultimate recovery. Alpha Petroleum is Cheviot's sole owner. Water depths run to 155 m.

13 new production wells will be drilled; Peel & Padon satellites to be brought on.

Maersk brings 10,000 bo/d Flyndre online in North Sea

Oil is flowing from **Maersk Oil's** Flyndre field, which straddles the UK and Norwegian border in the North Sea. Flyndre contains a gross 30 MMboe, of which 19-20 MMboe is recoverable.

The field was developed as a subsea tieback of a single well to **Repsol Sinopec's** Clyde platform in the UK via a 25-km pipeline. Volumes will peak at 10,000 bo/d with production set to continue until 2023.

Flyndre field lies 293 km southeast of Aberdeen in Blocks 30/13 and 30/14 of the UK North Sea and 325 km southwest of Stavanger in PL 018C of the Norwegian North Sea. The field was discovered in 1974 and is owned by Maersk (72% WI, operator), Repsol Sinopec (27%), **Statoil** (0.47%) and **Petoro** (0.35%). Clyde lies in UK North Sea Block 30/17b and is owned by Repsol Sinopec (95% WI, operator) and **First Oil** (5.0%).



Horse Hill license covering S. England find extended

UK Oil and Gas Authority extended **Horse Hill Development's** rights to PEDL137 and PEDL 246, both onshore southern England, to 2021. In exchange, the company agreed to a revised work program that consists of the already planned Horse Hill-1 Kimmeridge and Portland production tests as well as two new appraisal wells and the





collection of 50 sq km of 3D and 25 km of 2D seismic data.

HHD intends to achieve

commercial production from one or two more wells at Horse Hill, and partner **UK O&G** believes that similar results can be replicated at three other locations across the Weald Basin. Reserve estimates at Horse Hill also have been increased recently by 53% to 32 MMbo as a result of **Nutech's** revised petro-physics report on the find issued in July 2016. Horse Hill was discovered in October 2014, and pay has been found there in the Lower Kimmeridge lime (40°API sweet oil) and Portland sand.

Horse Hill is owned by Horse Hill Development Ltd. (65% WI, operator) and a consortium that includes UK O&G (42% WI) and **Solo Oil** (10%). The remaining 35% stake is held by **Magellan Petroleum**.

Gets until 2021 to collect more seismic data and drill two appraisal wells.

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North Sea & Western Europe

Hurricane's West of Shetland work < Continued From Pg 1

Drilling at Lincoln has so far revealed a minimum oil column of 660 m, while borehole image logs show open fractures that are associated with hydrocarbon shows. All the fracture classes so far identified in Lancaster are also present in Lincoln, while resistivity logs also demonstrate that the reservoir is permeable.



Hurricane hasn't issued a post-drill resource estimated for Lincoln yet, but pre-drill had assessed it at 150 MMbo before lifting it to 250 MMbo in December. If Lincoln and Warwick are part of a single large field, this 150-250 MMbo assessment might also be too conservative. If Lincoln-Warwick follows the pattern set at Lancaster-Halifax, they could contain another 450-750 MMbo, putting combined resources at the Lancaster-Lincoln complex at 1.0-1.34 Bbo.

Lancaster's fractured basement may contain nearly 600 MMbo.

Additional drilling will likely have to wait until next year as the rig has been demobilized. In the meantime, Hurricane is advancing plans to install a 20,000 bo/d FPSO as an early-production system at Lancaster to service two wells that will develop 62 MMbo—10.5% of Lancaster's estimated recoverable resources—starting in 2019. Once on stream, phased development will proceed depending upon how much oil is ultimately found and what partners Hurricane can attract.

Hurricane has been mum on this front, noting only that it is in discussions with several potential partners. Given the large resource potential, these negotiations may take some time, especially once the cost of operating in the West of Shetland region and the novel nature of Hurricane's discoveries are considered. Fractured basements are different from the shallower, softer sands from which most North Sea oil is extracted and may deter investors. Lancaster-Lincoln lies in P1368 and P2308. Water depths range 125-450 m.

■ The Norwegian Petroleum Directorate awarded **Shearwater GeoServices** a contract for the reprocessing of 2D seismic data in the Barents Sea. The work consists of two projects **SHEARWATER** run in parallel

to reprocess 6,000 km of pre-stack, time-migration data and analyze 2,500 km of shallow-target 2D seismic collected from the north part of the Barents Sea.

■ Norway approved **Statoil's** development plan for the Trestakk discovery in the Norwegian Sea. Trestakk was discovered in 1986 and contains a recoverable 76 MMboe, mainly oil. It will be developed as a three-well subsea tieback to the Åsgard A production vessel and will come on stream in 2019. Trestakk lies in PL 019B and is owned by Statoil (59.1% WI, operator), **ExxonMobil** (33%) and **Eni** (7.9%).

■ Norwegian Petroleum Directorate's catalog of borehole core samples from wells drilled on the Norwegian Continental Shelf now stands at 6,000 cores. The Core Store, as NPD's data and sample repository is called, includes core and cuttings samples from virtually all exploration wells drilled in addition to all cores and substantial volumes of cuttings from all producing fields. Production well 31/2-Y-21 AY2H in Troll field was the latest well.

Top Global Oil Producers

	Oil Production (kbopd)			Rig Count	
	Jan-17	Dec-16	Jan-16	Jan-17	% Change YOY
Russian Federation	-	10,490	10,227	-	-
Saudi Arabia	9,748	10,465	10,230	124	0%
USA	8,947	8,783	9,194	712	15%
Iraq	4,630	4,830	4,775	41	-16%
Iran	3,920	4,010	3,370	-	-
China	-	3,960	4,161	20	-26%
UAE	-	-	3,369	48	0%
Canada	3,034	3,077	3,209	345	49%
Kuwait	2,710	2,844	3,000	52	30%
Brazil	2,692	2,736	2,358	16	-53%
Venezuela	2,250	2,270	2,530	51	-24%
Mexico	2,026	2,042	2,260	16	-63%
Nigeria	1,914	1,599	2,145	6	-33%
Norway	1,639	1,646	1,654	12	-33%
Angola	1,615	1,639	1,770	5	-50%
Kazakhstan	-	1,439	1,358	-	-
Algeria	1,091	1,162	1,136	51	0%
Oman	-	-	1,012	57	-19%
Colombia	-	-	986	20	150%
UK	948	942	982	8	0%

Source: Joint Organisation Data Initiative.

*Global total only includes countries with reported volumes



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Middle East & North Africa

■ **Oman Oil E&P** found oil at the Bisat prospect in Block 60 onshore Oman. The company probed Bisat with two horizontal wells that proved the pay zone there is capable of producing more than 1,000 bo/d of light oil. The company is now determining how best to hook Bisat to facilities, which lie 35 km to the south. Block 60 covers 1,485 sq km and is owned solely by Oman Oil.

■ **Park Place Energy** relogged the Akcakoca-3 well, confirming up to 65 m of potential gas reservoir off northwest Turkey. A 10-m zone was perforated, and the well stabilized at 3.0 MMcf/d on a 24/64-in. choke at 660 psi after flow tests. The workover more than doubled overall volumes there to 4.0 MMcf/d. The work is part of a 2017 development program that Park Place will carry out at its newly acquired Turkish assets. Park Place (36.75% WI) operates with **TPAO** (51%). A group of Turkish investors retains the balance of 12.25%.

■ Turkey is directing TPAO to gain a better understanding of the country's offshore resources. Turkish Minister of Energy and Natural Resources Berat Albayrak said the country will produce a geophysical map of these areas by 2018 that will include seismic studies covering Turkish waters in the Black and Mediterranean seas. The seismic data will help pinpoint drilling locations for four wells, two in each offshore area.







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Eni find off Libya tests at 7,000 boe/d in Gamma prospect

Eni found gas and condensate offshore Libya. The discovery was made by well B1-16/3, which targeted the Gamma prospect in Area D. The well reached 2,981 m TD and found hydrocarbons in the Eocene-aged Metlaoui Group. Eni tested the well at over 7,000 boe/d. The discovery lies 140 km off the Libyan coast and is just 15 km southwest of Bouri field and 5.0 km north of Bahr Essalam field. Eni (30% WI) operates with **NOC** (70%). Water depths run 100-200 m.



Gas & condensate discovery at B1-16/3 follows two similar finds made in 2015.

Drilling the Gamma prospect is part of Eni's near-field exploration strategy, which focuses on maximizing resource potential close to existing infrastructure. It also follows the successful B1-16/04 and NFW A1-1/1 wells in block that in 2015 targeted the Bouri North structure. Both intersected gas and condensate in the carbonates of the Metlaoui Group and tested at 5,900 and 3,000 boe/d, respectively.

Area D lies in the Pelagian Basin, 110 km north of Tripoli. The concession includes Bouri field, which is capable of producing 70,000-80,000 bo/d off a recoverable 4.5 Bbo. Bouri field also has associated gas potential of 3.5 Tcf. Being offshore, Bouri remains immune to much of the fighting in Libya and at many points during the ongoing civil war was the only facility to remain exporting. The field FSO was recently replaced, and in February the new unit shipped its first cargo. Bouri field is operated by Eni Agip (30% WI) and NOC (70% WI). Water depth in the field is 145-183 m.

BP probe yields natural gas find offshore Egypt

BP made its third gas discovery in the North Damietta Block offshore Egypt. The Qattameya Shallow-1 well reached 1,961 m TD and intersected 37 m of net gas pay in high-quality Pliocene sands. The well lies in water 108 m deep and is 60 km north of the city of Damietta, 30 km southwest of BP's Salamat find and 35 km west of the supermajor's producing Ha'py field. Given Qattameya Shallow-1's proximity to existing infrastructure, BP is studying tie-in options.



Third North Damietta discovery may boost concession's resource estimate.

North Damietta's two other gas finds, Salamat and Atoll, are being developed. Salamat is a 2013 discovery that at the time was the deepest well drilled in Egypt. It probed the center of a 50-km-long structure and intersected 38 m of net gas and condensate pay in Oligocene sands after reaching 7,000 m TD. The gross hydrocarbon column was estimated to be 180 m. Water depth is 650 m.

Two years later, BP followed up Salamat with a find at Atoll 15 km to the north. NFW Atoll-1 reached 7,400 m TD in 2015 and hit 50 m of gas pay in same sands. In 4Q15, Atoll was assessed at 1.66 Tcfe (90.5% gas) and fast-tracked for development in mid-2016. Once on stream in 2018, Atoll's three wells will initially produce 300 MMcfe/d to the domestic market and increase to 450 MMcfe/d. BP will spend \$3.8 billion on Atoll.

License in pole position to be developed after conclusion of West Nile Delta.

BP estimated prior to the latest discovery that North Damietta contains more than 5.0 Tcfe, and the supermajor has touted the block as being its next major project in Egypt after the West Nile Delta project. Greenlighted in June 2016, West Nile Delta is developing 5.28 Tcfe (95% gas) from five fields. Production is slated to begin in 2017 at 1.2 Bcfe/d—30% of current Egyptian gas production.

BP is North Damietta's sole owner, but holds 82.75% of West Nile Delta after equalizing its shares across the project's licenses in late in 2015 via a deal with partner and **Letter One** subsidiary **Dea**. That deal saw BP pick up an additional 22.75% WI in the North Alexandria Concession and 2.75% WI in the West Mediterranean Deep Water Concession. Dea remains BP's sole partner, owning 17.25%.

Russia & FSU

Novatek eyes 70 mtpa LNG plans in Russian Arctic

Novatek has big plans to develop its core resource base in the Russian Arctic. Co-owner and founder Leonid Mikhelson says that after the company's Yamal LNG facility comes on stream later this year, Novatek will begin targeting large gas and condensate accumulations in the region. "The Gydan and Yamal peninsulas have a vast resource base that allows the production of over 70 mtpa of LNG, comparable to Qatar," said Mikhelson.



The company will start with the North Russky Block, which lies in West Siberia's Yamal-Nenets region. Novatek will begin development of North Russkoye, Dorogovskoye and East Tazovskoye fields before YE17. Together, they contain 2.7 Tcf and are capable of producing 777 MMcf/d, or about 12% of the company's current production. Train 1 will be commercial in December. The remaining two trains would come on stream in 2H18 and 2H19, bringing the project to its full 16.5 mtpa capacity. The plant relies on feedstock from South Tambeykoye gas field, which has 2P reserves of 32.7 Tcf. Later in 2022-2023, Novatek will add another 16.5 mtpa plant, Arctic LNG, to commercialize gas on the Gydan Peninsula.

Middle East & North Africa

NIOC starts up South Pars oil production at 20,000 bo/d

National Iranian Oil Co. began early production from its South Pars oil project in March. Seven wells are producing a combined 20,000 bo/d from the oil layer underlying the South Pars gas field. Volumes are flowing to a processing platform and a newly installed FPSO—the first such unit to operate in the Middle East. The FPSO will offload its first cargo to a tanker by the end of April. Once all seven of these early-phase wells are fully on stream,



they will produce 35,000 bo/d.

NIOC eventually will drill more than 300 wells into

the oil-bearing layer to push volumes to at least 200,000 bo/d. These wells will consist of both additional producers and a significant number of gas injectors sourced from increased production at South Pars proper. The move to produce oil from South Pars follows that by Qatar at North Dome, where the shared gas field's oil layer is known as Al-Shaheen. There, Qatar Petroleum has long been producing oil and is now averaging 400,000 bo/d.

Full flow on seven wells will reach 35,000 bo/d, but 200,000 bo/d the goal.

Qatar's North Field expansion < Continued From Pg 1

With increasing competition from the US, Australia and Russia, Qatar is moving to protect its market share. The Middle Eastern country is the current market leader at 78 mtpa, but Australia is expected to take the top LNG spot in 2017. US producers are also a huge threat, building projects that will ultimately put 74 mtpa on the market.



Russia's Novatek says it could possibly produce 70 mtpa from its holdings in the Russian Arctic,

while Gazprom plans to extend its reach deeper into Europe and Asia with several new natural gas pipelines. Elsewhere, large projects off Africa, Egypt and Israel raise the prospect of even more gas and LNG making it to market.

Then there is Iran, which has pushed production from its share of the cross-border North Field complex, known in Iran as South Pars, to 19 Bcf/d and plans to expand that even further.

Most of this gas now fuels Iran's domestic needs, but an increasing share will go to gas injection and, if opportunity arises, exports. North Field-South Pars contains a recoverable 900 Tcf, enough to serve both Qatari and Iranian ambitions, but the prospect of seeing resources drained by an economic and geopolitical adversary may be another reason for the Qatari move.

Qatar's move is aimed at maintaining gas market share.

Lukoil wrapped up a 2,500-km 2D seismic program in Western Siberia's East Taymyrsky Block and began drilling its first 5,000-m exploration well there six months ahead of schedule. The well will be the deepest drilled into the Lower Cambrian strata in this part of Russia and will be finished in about a year. Lukoil is the sole owner of East Taymyrsky's 13,800 sq km.



Rosneft made a minor oil discovery in Western Siberia. In Bashkortostan, two exploration wells targeting the Anastasyinskoye prospect in the West Kungak license intersected oil-bearing reservoir, with one of the wells testing at 80 bo/d. The 4.75 MMbo find will be developed via existing facilities at Biavash field. Rosneft is sole owner of the license and expects to make several more such small finds in the region this year.



Rosneft began drilling the Tsentralno-Olginskaya-1 exploration well in the Khatangsky license in the Russian Arctic. The well is targeting an offshore prospect in the Laptev Sea but is being drilled from shore. Tsentralno-Olginskaya-1 is the northernmost well drilled on the Russian Arctic shelf and will reach 5,000 m TMD with a significant horizontal section. RN-Burenie, Rosneft's in-house service company, is drilling the well.

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Africa

Eland to push OML 40 past 20,000 bo/d by YE17

Eland O&G plans to expand production at its principal Nigerian asset this year. OML 40 now averages 8,000 bo/d from the Opuama-3 well, but this will increase to 11,500 bo/d in late April once Eland completes a water-handling operation at Opuama-1. The company will also work over and sidetrack Opuama-7 by the end of 1H17, adding 6,000 bo/d.



Elsewhere in the block, Eland will work over the Gbetiokun-1 well in 2H17, which will deliver 7,800 bo/d once finished. This will be followed by development work that will see 12 new production wells drilled in two, six-well phases. The program will target 65 MMbo in recoverable resources in both deep and shallow reservoirs at Gbetiokun field and could result in peak production of 50,000 bo/d once fully on stream.

OML 40 lies onshore in the Niger Delta Basin. In addition to Opuama and Gbetiokun, the block also contains Abiala, Adagbassa Creek and Tsekelewu fields. Together, Eland estimates they contain 160 MMbo. Eland (45% WI) operates with **Nigerian Petroleum Development Corp. (55%)**.

■ **TGS** will expand its NWAAM multi-client library in the MSGBC Basin by acquiring more than 11,000 km of long-offset broadband 2D seismic data together with magnetic and gravity data in Senegal and Gambia. NWAAM2017 complements the TGS NWAAM2012 2D survey, which helped with recent commercial discoveries in the basin. **Petrosen** in Senegal and the Ministry of Petroleum and Energy in Gambia are partnering on the project.

■ Botswana renewed three of **Tlou Energy's** licenses for another two-year term. The renewals cover Karoo Basin Licenses 001, 002 and 003/2004. Combined 2P reserves across Tlou's five Karoo Basin blocks increased to 3.9 Bcf at YE16, up 44% YOY, while the 3P resource tally was up 390% to 261 Bcf. The additions were due to the flow testing of wells at Tlou's Selemo pilot project.

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Middle East & North Africa

Genel pivots from oil to gas after Taq Taq reservoir drop

Reserves at **Genel Energy's** Taq Taq oil field in Iraqi Kurdistan, originally intended to supply at least 60,000 bo/d, were reduced following a reassessment by **McDaniel & Associates** of rock volumes above the oil-water contact and porosity of the undrained portion of the Shiranish reservoir. As a result, Taq Taq's 2P reserves fell by more than 60% to just 59 MMbo—down from 172 MMbo estimated at YE15.



Although Taq Taq at times produced over 70,000 bo/d earlier this decade, the field now produces just 19,000 bo/d, which is down 47% from YE16. The drop in volumes is a result of high decline rates at existing wells that is being caused by water breakthrough into the producing reservoir. These declines plus the reserve reassessment mean that Genel is now unlikely to meet its 24,000-31,000 bo/d annual guidance for the field. Taq Taq is owned by Genel (44% WI, operator), **Sinopec** subsidiary **Addax Petroleum** (36%) and the Kurdish government.

Genel is now pinning its hopes on its Kurdish gas assets at Bina Bawi and Miran, which the company hopes to turn into a major development project. Miran and Bina Bawi contain 11.5 Tcfe (99% gas) and once brought on stream in 2018-2019 will initially produce 388 MMcf/d, rising to 2 Bcf/d by 2025. To move the two fields forward, however, Genel needs to sign an offtake and upstream investment agreement with **Turkish Energy Co.** later this year.

If the Turkish Energy deal pans out, an FID could come before YE17. Genel owns 75% WI in the two fields and has been looking for a partner since 2015. Kurdistan owns the remaining 25%. The fields' contract was recently amended to allow Genel a set price of \$0.78 per Mcf while also letting the company retain the title to Miran and Bina Bawi's oil reserves—which at 79 MMboe are now 34% larger than Taq Taq's.

Third-party assessment reduces Taq Taq oil reserves by two-thirds.

Genel Taq Taq Reserves Adjusted Downward

■ Year-to-date 2017 production has averaged 28,000 bopd, current production of 19,000 bopd

- The natural well declines seen in 2016 have been exacerbated by recent sharp falls in key producers

■ Updated CPR estimates remaining 1P – 2P reserves at 26-59 MMbbls

■ There remains uncertainty over remaining reserves and future production profile

■ In particular, there is uncertainty on the location of the free water level ('FWL') in north and south flanks of the field

- TT-29z well currently being drilled to address FWL uncertainty in north flank

- In positive outcome, TT-29z results could lead to a similar well being drilled in the south flank of the field

■ Focus on maximising recovery, with an overall aim of generating positive cash flow

Taq Taq field data	Dec. 31, 15	June 30, 16	Dec. 31, 16	Current
Cumulative oil (MMstb)	184	197	206	208
Oil production (bpd)	85,000	64,000	36,000	19,000
Water production (bpd)	9,400	6,600	10,500	13,000
- water cut	13%	9%	22%	40%
% of overall production from top 5 producers	62%	75%	82%	77%
1P – 2P EUR (MMbbls)	60-172	-	-	26-59
Shiranish 2P gross rock volume (Bm ³) – above free water level (mid case)	7.0	-	-	6.6
Shiranish 2P fracture porosity assumption	0.38%	-	-	0.24%



Source: Genel March 30 Presentation via **PLS docFinder** www.plsx.com/finder

Africa

Eni & Shell moving on OPL 245 despite controversy

Eni is set to approve the \$13.5 billion development of Zabazaba and Etan fields in OPL 245 offshore Nigeria by the end of June. The fields hold a recoverable 560 MMbo, which will be tapped by an initial eight wells and a 120,000-150,000 bo/d FPSO. However, the complete subsea production system calls for 24 Christmas trees to support future expansion. Of the two fields, Zabazaba will be brought on stream first in 2021 followed by Etan in 2024, with output from the two peaking at ~110,000 bo/d and plateauing at ~85,000 bo/d.



FID on initial development of 9.0 Bboe Nigerian block likely by June.

Eni and partner Shell's rights to OPL 245 were recently affirmed by Nigeria's High Court, which reversed a decision made by a lower court in January to seize the block because of corruption allegations. However, Italian prosecutors continue to pursue a criminal case against the companies.

OPL 245 is a 1,900-sq-km block in the Niger Delta Basin. **Ikon Sciences** estimated in 2007 that it likely contains 9.0 Bboe in place. Eni (50% WI) operates with Shell (50%).

Anadarko pushes back Mozambique LNG FID

An FID for Anadarko's Mozambique LNG project will be delayed by four months until 2Q18, says partner Mitsui. Talks with the government should conclude by YE17, while 20% of the project's planned 12.0 mtpa remains unsold through a long-term contract, Mitsui CEO Hirotsu Fujiwara told reporters at a Japanese energy conference. However, first LNG remains targeted for 2022-2023.



Anadarko had signaled in Q1 that an FID might come later in 2017 and that Phase 1 may be slimmed down to one train that would put half the facility's planned total capacity, or 6.0 mtpa, on stream. Mitsui's news suggests that the full two-train, 12.0 mtpa Phase 1 is still under consideration. Feedstock will come from Anadarko's discoveries in Area 1, which the US independent estimates stand at a recoverable 75 Tcf.

Anadarko (26.5% WI) operates with Mitsui (20%), **ONGC Videsh** (16%), **Bharat Petroleum** (10%), **Oil India** (4.0%), **PTTEP** (8.5%) and **ENH** (15%).

Cairn drills eighth successful well off Senegal

Cairn Energy keeps hitting bullseyes in Senegal's Sangomar Block, where it finished its eighth well. VR-1 was drilled to 3,899 m and intersected a gross oil column of 97 m across several sections. VR-1 intersected the targeted lower "500 series" reservoirs, confirming oil and fluid contact but finding greater thickness and higher-quality reservoir than expected. A secondary limestone exploration target proved uncommercial, however.

As for the lower primary pay zones, Cairn found that the 520 reservoir's 16 m of oil pay had superior properties to all other reservoirs sampled at SNE. The deeper 540 reservoir's 11 m has also only been seen at SNE-2, where the 540 reservoir was just 2 m thick. Data collected from VR-1 and the recently drilled SNE-5 will likely lead to an upward revision of the field's contingent resource estimate as the thicker, higher-quality pay means waterflooding should yield recovery factors of 30% or more.

VR-1 was plugged and abandoned, and the drillship moved to SNE-6, which will play a key role in an upcoming upper reservoir interference test. SNE contains a recoverable 470 MMbo, but up to 190 MMbo more could be added once drilling concludes. An FID could come in 2018, with first oil following in 2021-2023. Production would be 100,000-120,000 bo/d. SNE and Sangomar Deep are owned by Cairn (40% WI, operator), **Woodside Petroleum** (35%), **Far Ltd** (15%) and **Petrosen** (10%). Water depths run to 2,000 m.

Goes 8 for 8 wells drilled and successful in Senegalese deepwater block.



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Far Ltd. grabs prospects offsetting SNE find in West Africa.

Latin America

■ **LGO Energy's** GY-683 well reached 381 m at Goudron field onshore Trinidad and Tobago, intersecting the Mayaro sands. The well encountered 82 m of net oil pay, was perforated and put on production following a workover. GY-683 follows similar success at in-fill well GY-682, which produced at an initial rate of 55 bo/d. LGO is Goudron's sole owner.

■ **Packers Plus Energy Services** and **Compañía General de Combustibles** completed a 10-stage frac using Packers' StackFRAC HD multi-stage system, the first ball-activated completion in Santa Cruz province. It was also the first open-hole completion in a horizontal well in southern Argentina and takes the record for Argentina's highest stage count in a well using a liner hanger packer. Neither CGC nor Packers Plus identified where the work occurred.

■ **Searcher Seismic** has two data products covering Mexico's portion of the Gulf of Mexico that are available to explorers. The South Campeche Ultracube reprocessing project comprises 15,900 sq km of Campeche Bay and covers much of Mexico's proven reserves. About 75% of the water depth in the covered acreage is below 1,000 m. The Buscador near-shore 2D survey covers 11,200 km of newly acquired, high-quality, long-offset 2D data.

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Latin America

Canacol makes heavy oil find in Colombia

Canacol Energy's Mono Capuchino-1 exploration well found oil in Colombia's VMM2 contract area. The well reached 3,055 m MD before downhole mechanical difficulties required a sidetrack. The sidetrack was drilled to 3,123 m TD and intersected 31 m of net oil pay in Tertiary Basal Lisama sands and 124 m of net oil pay in the La Luna formation. The Basal Lisama sands averaged 22% porosity. The La Luna, a Cretaceous-age mix of shales and lime, averaged 15% porosity.



Produces 1,000 boe/d from Tertiary Basal Lisama sands in VMM2 permit.

Canacol perforated a 58-m section of the Lisama sands from 1,735-1,794 m, after which the well underwent a 34-hour test that included use of a jet pump. The well's final, stabilized flow rate was 1,068 boe/d (95% 18°API oil) at 3,000 psi. About 70 bbl/d of water was also produced, but analysis showed this was pump power fluid mixed with filtrate and not formation water. The company also tested 234 m of an open-hole section of the La Luna but with poor results. Mono Capuchino-1ST will be tied to production facilities by the end of May.

Canacol is now drilling the Canahuate-1 exploration well in the Esperanza permit about 3.0 km north of the Jobo gas plant. Canahuate-1 is targeting gas-bearing sands within the Ciénaga de Oro reservoir, a formation that has been home to several gas discoveries over the last three years. Also in the works is Pumara-1, an exploration well targeting light oil 3.0 km north of Labrador field in Block LLA23. Pumara-1 will target the proven producing C7, Mirador, Gacheta, and Ubaque reservoirs.

The VMM2 and Esperanza permits lie onshore in the Middle Magdalena Basin. VMM2 is owned by Canacol (66.9% WI, operator) and **Vetra E&P** (33.1%), while Esperanza is owned solely by Canacol. LLA23 sits in the Llanos Basin and is owned by Canacol (91%) and **Petromont** (9.0%).

B&S eyes FPSO for 2012 Falkland Islands find

Borders & Southern (B&S) estimates its Darwin wet gas discovery off the Falkland Islands contains a gross 638 MMboe, of which 360 MMboe is recoverable condensate. The London-based company continues to look for a farm-in partner to help it further explore and develop the find. This includes drilling a well on the Sullivan prospect, which is seen as a geologic analog to Darwin and seems likely to contain a similar amount of wet gas.

borders & southern
petroleum plc

B&S plans to develop Darwin as a tieback to a leased FPSO. Four production wells and three gas injectors, three fewer wells than previously planned, would initially target 270 MMboe. Phase 1 peak volumes will be 56,000 boe/d. Darwin is a 2012 discovery that lies southeast of the Falkland Islands. B&S is sole owner of three production licences in the area covering 10,000 sq km.

Tecpetrol approves 494 MMcf/d shale project

Argentina's fifth-biggest oil company, **Tecpetrol**, will invest \$2.3 billion to drill 150 wells and build infrastructure in Neuquén Province's Fortín de Piedra license. The block sits in the Vaca Muerta's wet gas window, and the company intends to produce up to 494 MMcf/d there by 2019, which would account for 10% of Argentina's total gas production once the work is completed. Drilling begins in September with five to six rigs.



Tecpetrol currently produces only about 2.7% of Argentina's oil and 2.9% of its gas, so the project will radically transform the company's position in the domestic market. The spend was greenlighted after Tecpetrol reached an agreement with provincial authorities to migrate the company's existing contract from a 10-year license to a 35-year unconventional permit as laid out in Argentina's new hydrocarbon law.

Chevron to rehabilitate Frade off Brazil to boost volumes

Chevron is planning a six-well campaign at Frade field offshore Brazil. A production well and two water injectors will be drilled prior to 2020, and the remaining three won't be drilled until after 2020. All six will target pay in Oligocene and Miocene-age turbidite sands at the deepwater field.



The goal is to boost production from the field's current 22,750 boe/d (93% 22°API oil). This is significantly below the 86,400 boe/d (93% oil) Chevron had been producing at Frade in 2011, but a seismic event under the seabed that year led to upward oil seepage from the reservoir, creating a 3,000 bbl spill. Drilling and injection were subsequently banned to limit damage. Although those restrictions have been lifted, Frade's production has yet to recover.

Frade lies in Block RJS-366 BC-4, 370 km off Rio de Janeiro in water 1,100-1,200 m deep. Recoverable reserves are estimated to be 300 MMbo. Chevron (51.74% WI) operates with **Petrobras** (30%) and a consortium of **Inpex**, **Sojitz** and **Jogmec**. In December, Brazil extended Chevron's contract for Frade until 2041.

Volumes down 74% at 300 MMbo deepwater field since 2011 earthquake.

Frade Was A Major Producer For Chevron Before The Leak

Start-Up	Project	WI (%)	100% Peak Production (MBOED)	100% C&E (\$B)
2008	Agbami	68	250	7.0
	Tengiz SGI/SGP Expansion	50	300	7.4
	Blind Faith	75	70	1.2
2009	Tahiti	58	135	2.7
	Frade	52	90	3.0
	Tombua-Landana	31	100	3.8
Total			945	25.1

Source: Chevron Nov. 17, 2009 Presentation via **PLS docFinder** www.plsx.com/finder

Latin America

Parex well yields pay in central Colombia

Parex Resources' Boranda-1 exploration well found oil after drilling to 3,675 m TD in Colombia's Playón Block. The well intersected four intervals of 20° API oil-bearing sands with a total combined thickness of 40 m. Boranda-1 lies 30-40 km from two oil-receiving stations in the Sabana de Torres region of Santander Province, which will allow for a relatively quick tie-in once the well has been tested.



Playón is a 175-sq-km block that lies onshore in central Colombia's Middle Magdalena Basin. It was awarded to Parex (50% WI, operator) in 2008. The last discovery to be made in the block was in 2014 when Aullador-2 ST1 reached 3,694 m TD and found 24° API medium oil across four intervals of the Esmeraldas formation. On test, Aullador-2 ST1 produced 787 boe/d (93% oil) with a 15% water cut. **Ecopetrol** retains Playón's remaining 50% stake.

Eni drilling points to potential off Mexico < Continued From Pg 1

Amoca lies in Area 1, a 55-sq-km concession on the south edge of the Gulf of Mexico that Eni won rights to in Round 1.2 of Mexico's maiden acreage tender in 2015. The block also contains the undeveloped Mizton and Teocalli discoveries, which Eni will target this year following the drilling of Amoca-3. Like Amoca-2 and -3, Miztón-2 and Tecoailli-2 will be appraisals.



Eni is Area 1's sole owner.

Amoca-2 is the first well to be drilled by an international oil company since Mexico opened up its energy sector and has been widely watched as Mexico embarks on its second round of auctions following its block offers. Round 2.1 is scheduled to start shortly, and Mexico's National Hydrocarbons Commission reports that 26 companies have signed up for data room access—comparable to the 25 companies that pre-qualified to bid on Round 1.1's 14 blocks.

Round 2.1 will offer 15 blocks with both exploration and production potential in the Sureste, Veracruz and Tampico-Misantla areas. Pre-qualified companies will be announced in late May with bids to be presented June 19. The round will be held concurrently with the auction of farm-in rights to Ayin-Batsil field, which contains a proven 46 MMbo but could contain up to 281 MMbo, according to Pemex. Later in 2017, a second deepwater auction will be held alongside a tender covering onshore unconventional blocks.

Eni CEO says Amoca points to block containing more than a gross 800 MMbo.

South Pacific

Senex gets state aid for South Australia gas project

Senex will advance its Vanessa gas project in South Australia after receiving a \$5.8 million government grant. Vanessa-1 was drilled in 2007 in PEL 182 and sidetracked in 2014, after which it found gas pay in the Epsilon and Toolachee formations. The well then produced 5.0 MMcf/d on a 42/64-in. choke during a DST. The grant will allow for additional tests and a formal development plan.

Elsewhere in PEL 182, Senex's Hoptite-1 and Hoptite-1 DW1 wells have been plugged and abandoned after being drilled to 2,220 m TD. A DST of Hoptite-1 recovered free oil at uncommercial rates in the secondary Birkhead formation, while the Hoptite-1 DW1 sidetrack encountered signs of hydrocarbons in the Birkhead but also with uncommercial reservoir qualities.

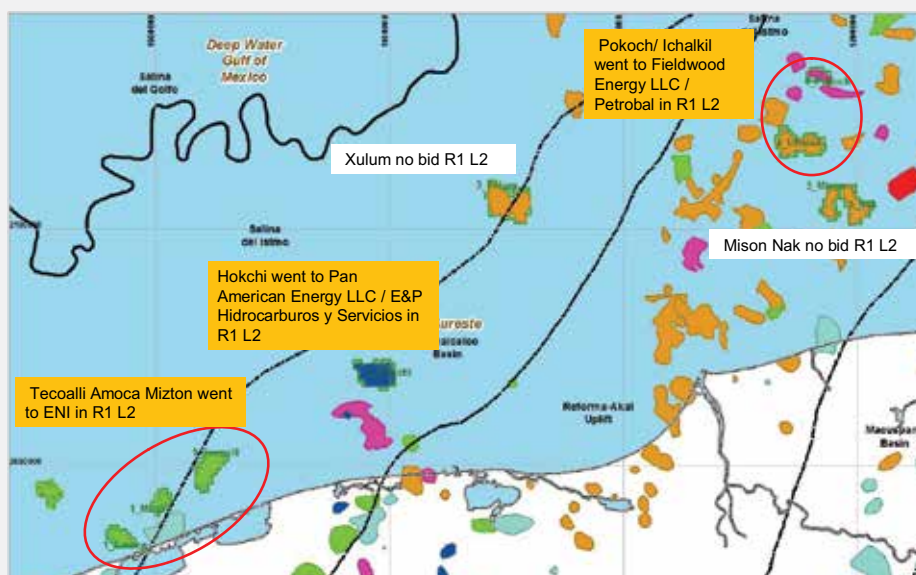
PEL 182 covers 1,745 sq km of the Cooper Basin. Senex (57% WI) operates with **Beach Energy** (43%).

Beach confirms Patchawarra extension in South Australia

Beach Energy's Mokami-1 exploration well in PEL 91 onshore South Australia found gas. Mokami-1 was drilled to test a western extension of the southwest Patchawarra gas fairway and targeted liquids-rich sands in the Patchawarra formation. It found 10 m of net pay across a gross 19-m section and was cased and suspended as a future producer. DSTs of the well were encouraging with one well's flow rate hitting 8.6 MMcf/d.

Elsewhere in PEL 91, Beach started a two-well infill program at Pennington field, which is 10 km east of Bauer field. The wells are targeting the Namur sands as a primary objective and the McKinlay member and Mid Namur sands as secondary. The first well, Pennington-5, reached 1,806 m in late March and intersected 2.2 m of net pay in the Namur and 1.8 m in the McKinlay member as well as oil shows in the Birkhead formation.

PEL 91 lies in Cooper-Eromanga Basin and is owned solely by Beach Energy.

Mexico's Round 1 Shallow Water Tender Winners

Source: Alconsult October 15, 2015 Presentation via **PLS docFinder** www.plsx.com/finder

Asia

KrisEnergy steps closer to Cambodian block project

KrisEnergy and Cambodia signed a revised production sharing contract for offshore Block A in the Gulf of Thailand. The deal will allow Phase 1 development of the Apsara oil discovery to move forward after several years of delays.



Unocal discovered Apsara in 1999 but did not immediately develop it as negotiations dragged on over the find's fiscal terms. When **Chevron** took over Unocal in 2005, Apsara was put on the backburner after plans had advanced to a 25,000 bo/d Phase 1 and a 2012 FID.

This didn't pan out, and Kris acquired Block A when it purchased Chevron's Cambodian assets in 2014 for \$65 million. The company reduced Chevron's planned

New PSC for oil-rich Block A in Gulf of Thailand brings first 8,000 bo/d closer.

Phase 1 to a 10,000 bo/d project that would have been developed via a single platform servicing 24 development wells. The price collapse later that year forced Kris to reduce Phase 1 even further to just 8,000 bo/d supported by a production barge and a floating storage and offloading vessel.

A new PSC should pave the way for a near-term FID and first oil in just 24 months. First, however, Kris is looking for a partner to back the \$200 million project and has prioritized the paring down of its 95% stake, which the company assumed after taking on the 28.5% WI and 14.25% WI held by **Mitsui Oil Exploration** and **GS Energy**, respectively.

"We're not in a rush to farm things out," Kelvin Tang, Kris' COO and president of its Cambodia operations, told Reuters. "What we are looking for are good credible and stable partners that can share the risk and cost of the project."

Block A contains 700 MMbo. During Chevron's ownership, the Cambodian concession was considered as a possible site for a large-scale, block-wide project involving 44 production platforms across seven producing areas. Water depth averages 50-80 m. Cambodia retains the block's remaining 5.0% WI.

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South Pacific

Gorgon completed but Chevron puts on LNG brakes

Chevron started up the third production train at its \$54 billion Gorgon LNG project in Australia, bringing the project's total capacity to 15.6 mtpa. Some of Train 3's volumes remain uncommitted, however, suggesting that volumes from the project will add to the Asian spot market glut. Chevron has signaled that it would not likely invest



in a fourth train at Gorgon or a third at Wheatstone.

"The mega projects of the past decade are giving way to smaller, more targeted investments with quicker economic returns," managing director Nigel Hearne said in a speech in Perth, adding that there was "unlikely to be another large greenfield LNG development."

Capacity at Barrow Island facility stands at nameplate 15.6 mtpa.

Train 3 on stream as cost & LNG glut nixes plans for Train 4.

With Train 4 unlikely, Chevron's plans to drill up to 67 wells and install gathering systems at Geryon, Chandon, Orthrus and Maenad fields to feed the train are also in doubt. However, all signs point to Chevron upgrading Gorgon and Jansz-Lo gas fields. Both already supply the Barrow Island project. Chevron (47.3% WI) operates Gorgon with partners **ExxonMobil** (25%), **Shell** (25%), **Osaka Gas** (1.25%), **Tokyo Gas** (1.0%) and **Jera** (0.417%).

Latin America

Total & BP subsidiary PAE to split Vaca Muerta block

Shortly after signing a \$330 million Vaca Muerta LOI with **Shell** in early March, **YPF** followed up by agreeing to a joint \$500 million shale gas investment with **BP** subsidiary **Pan American Energy**, **Total** and **Wintershall**. The three foreign companies are now working in the Aguada Pichana area but have asked Argentina to split the region in two. If the request is approved, Total will take charge of the eastern portion while Pan American will take the west.

Total has been leading development of Aguada Pichana since 2015, when it started work on the 11-12-well shale pilot project. Test production from four wells started in October 2015 at the combined rate of 28.25 MMcf/d, and last year Total said 1,500-m laterals there had IP rates up to 10 MMcf/d with cumulative production curves comparable to that found in the US' Haynesville shale play in North Louisiana. Aguada Pichana is operated by Total with Pan American and Wintershall. YPF retains 27.27% WI in the license.

Pilot wells' 1,500-m laterals see results similar to that in US' Haynesville play.

Exxon's Guyana block < **Continued From Pg 1**

In addition to the FPSO, Liza Phase 1 will include 17 wells consisting of eight production and nine injection wells, of which six will inject water and three gas. Two drilling centers are planned, and Exxon is searching for two deepwater drillships to develop Liza. One will be contracted for a three-year term starting in 2018, while the other will be retained for only a year. First oil could come in 2019, with volumes ramping to 120,000 bo/d by 2020. Phase 2 might consist of tying back Payara to Liza, but **Wood Mackenzie** suggests Payara could support 150,000 bo/d on its own and may be developed as a standalone project.

Supermajor is looking for two drillships for a 2018 development campaign.

Exxon will continue drilling in Stabroek, where it has scheduled the Stena Carron drillship to drill the Liza-4 appraisal well. Stabroek covers 26,800 sq km off the coast of Guyana but is subject to a significant territorial claim by Venezuela that could complicate the block's development. Exxon operates and owns 45% WI with partners **Hess** (30%) and **CNOOC** (25%).

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NORTHEAST ASIA

MONGOLIA EXPLORATION

Significant Frontier & Emerging Basins--
--Exploration Opportunity.
2D & 3D Seismic Data Available.
SEEKING JV PARTNER
CONTACT SELLER FOR MORE INFO
EX 1974FO

EX

FARMOUT

NORTHERN EUROPE

DENMARK OPPORTUNITY

Triassic, Rotliegend, & Middle Jurassic SS.
Four Play Fairways.
SEEKING JV PARTNERS
CONTACT SELLER FOR MORE INFO
EX 8228FO

EX

FARMOUT

OFFSHORE IRELAND OPPORTUNITY

One Identified Prospect.
Water Depth: 280m
Work Programme: Seismic Reprocessing.
SEEKING JV PARTNER
Mean Recoverable Reserve: 1.2 TCF
CONTACT SELLER FOR MORE INFO
DV 8566FO

DV

FARMOUT

CALL
PLS FOR
INFO

NORTHERN EUROPE FARMOUT

One Anticline Prospect.
Dual Targets U. Jurassic Bridport SS &--
--Cornbush Limestones.
Onshore To Offshore Seismic Data.
UP TO 50% INTEREST AVAILABLE
Recoverable Resources: 37 BCF
CONTACT SELLER FOR MORE INFO
DV 2970FO

DV

ONSHORE
UK

UK DEVELOPMENT OPPORTUNITY

1-Exploration Well & 1-Appraisal Well.
Significant Untested Upside Potential.
Virtual & Physical Dataroom Available.
SEEKING JV PARTNER FOR FARMOUT
Pmean Reserves Range: 14-20 MMBOE
CONTACT COMMERCIAL MANAGER
DV 2980FO

DV

NORTH
SEA

UK UNCONVENTIONAL PROJECT

One Well Drilled In 2013.
Hydraulic Fracturing Project.
WORKING INTEREST FOR SALE
CONTACT OWNER FOR INFO
DV 2054FO

DV

UNCONVENTIONAL

NORTHERN EUROPE

UK NORTH SEA FARMOUT

One Oil Discovery & One Large Prospect.
2 Appraisal Wells Planned In 2017.
Reprocessed 3D Seismic Available.
SEEKING JV PARTNER FOR FARMOUT
30-50% WORKING INTEREST AVAIL
Estimated 2P Reserves: 29 MMBO
Comb. Reserve Potential: 80 MMBO
CONTACT AGENT FOR MORE INFO
DV 2981FO

DV

NORTH
SEA

UNITED KINGDOM DISCOVERY

One Undeveloped Discovery.
One Identified Prospect.
Appraisal Well To Be Drilled In 2018.
Reprocessed 3D Seismic Survey.
75% EQUITY AVAILABLE FOR FARMOUT
Pmean Recoverable: 20 MMBOE
Prospect P50 Resources: 15 MMBO
CONTACT SELLER FOR MORE INFO
DS 2974FO

DS

UKCS

UK OFFSHORE PROSPECT

Two Identified Prospects.
Awarded September 2015.
SEEKING JV PARTNER
Prospective Resources: 463 BCF
CONTACT SELLER FOR INFO
DV 8157FO

DV

NORTH
SEABUYERS! NO
COMMISSIONS

UNITED KINGDOM FARMOUT

One Identified Prospect.
One Well Commitment.
SEEKING JV PARTNER
Mean Recoverable Reserves: 30 MMBOE
CONTACT SELLER FOR MORE INFO
DV 8611FO

DV

NORTH
SEA

UNITED KINGDOM PROSPECT

Two Identified Prospects.
UP TO 50% WI AVAILABLE
P50 Prospective Resources: 533 MMBO
CONTACT SELLER FOR MORE INFO
DV 2014FO

DV

SHETLAND

UK FARMOUT OPPORTUNITY

Reservoir Depth TVDSS: 4,500Ft.
UP TO 50% WORKING INTEREST AVAIL
First Oil Expected By Mid 2020.
2P Reserve Potential: 30 MMBO
CONTACT SELLER FOR MORE INFO
DS 2063FO

DS

NORTH
SEA

UNITED KINGDOM FARMOUT

Upper Jurassic - Fulmar Formation.
10 Seismically Identified 3D HI Features.
2,400m Drilling Depth In 90m of Water.
SEEKING JV PARTNER
Portfolio Unrisked Recoverable: 1.5 BBO
CONTACT SELLER FOR MORE INFO
DV 2990FO

DV






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
PLS PetroWire Database

Plans to Drill or Test
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Africa

Apr. 3	Nigeria- OPL 310		Optimum Petroleum says it will likely start drilling an appraisal well by YE17 or in early 2018.
Mar. 31	Niger- R3 & R4		Savannah Petroleum expects drilling to commence during H1.
Mar. 31	Angola- Block 22		Repsol may drill another exploration well after collecting more geological and geophysical data.
Mar. 28	Cote d'Ivoire- CI-100		Total is expected to start drilling a well in the block sometime this year.
Mar. 24	Kenya- Block 2A		Essel Group placed an order for a high-specification newbuild rig to drill a well in the NW part of the block in Q4.

FSU & Eastern Europe

Apr. 11	Romania- XV Midia Shallow		Black Sea O&G awarded a contract to the GSP Uranus jackup rig to drill two wells in the block starting in Q4.
Mar. 29	Kazakhstan- Kyzloi & Akkulka		Great Wall Drilling won a contract from Tethys to drill 10 shallow wells in the Kyzloi and Akkulka fields.




Latin America

Apr. 10	Chile- Geopark		During Q2, Geopark plans to drill Uaken-1 to test a new shallow gas prospect.
Apr. 10	Argentina- Cuenca Neuquina		Wintershall says the Rio Grande Oeste-1 exploration well is to be drilled in Q2.
Apr. 6	Colombia- LL-34		Over May, Parex will drill two exploration wells to evaluate fault trends running parallel to the Tigana/Jacana oil trend.
Mar. 31	Brazil- Polvo		PetroRio is looking at drilling two new prospects in the field.




Middle East & North Africa

Apr. 10	Egypt- Gharib North West		Appraisal wells will be drilled in the NWG #1 development lease that will offset the NWG-3 and NWG-38 Red Bed oil producers.
Apr. 5	Cyprus- Block 10		Drilling operations are already being planned and the first exploration well is expected to be drilled in 2018.
Apr. 3	Turkey- South Akcakoca		A second Akcakoca well will be perforated in the near future.
Mar. 29	Egypt- South Ramadan		Pico Holding says that if regulators approve, drilling could start in early 2018.
Mar. 24	Morocco- Sebou		SDX plans to drill up to five wells in H2; three development and two appraisal.



North Sea & Western Europe

Apr. 7	Norway- PL 150B		The NPD has granted Aker BP a drilling permit for wildcat well 24/9-11 S.
Mar. 28	Germany- Völkersen		Two existing production wells, Völkersen-Nord Z6 and Völkersen-Nord Z4a, will be deviated to develop gas reserves at 5,000 m TD.
Mar. 27	UK- Glengorm		Nexen awarded Maersk Drilling a contract for a HP-HT exploration well on the Glengorm prospect in the UK North Sea. Work will begin in Q3.

Asia

Apr. 6	India- Bokaro		Greka Drilling won a contract to drill 73 wells over three years at the CBM block.
Apr. 4	Mongolia- Ongi Block v		Evaluation of bids for a drilling rig & services tender is at an advanced stage.
Apr. 4	Indonesia- Mako		A new well on the Mako discovery, the Mako South-1 Well, is planned to spud in late Q2 or early Q3.

South Pacific

Apr. 3	Australia- Kincora		Phase 2 will involve the drilling of 10 new wells plus WOs and stimulations of existing wells.
Mar. 24	Australia- WA-437-P		Partners Carnarvon & Quadrant are looking for a jackup rig to drill the Dorado prospect in H2.

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NORTHERN EUROPE

UNITED KINGDOM FARMOUT
STACKED RESOURCE PLAY

Mississippian-Age Shales.
Multiple Targets. Drilling Planned For 2018.
3D Seismic Data Acquired In 2016. **BOWLAND**
SEEKING JV PARTNER FOR DRILLING
Est. Recoverable Resource: >100MMBO
CONTACT SELLER FOR MORE INFO
DV 2934FO

DV**UNITED KINGDOM OPPORTUNITY**
OUTER MORAY FIRTH

One Identified Prospect.
Exploration Well Required By Nov 2018.
40% OPERATED WI FOR SALE
Unrisked Prospective Rsrce: 67 MMBOE
CA Required For More Information.
CONTACT AGENT FOR MORE INFO
DV 1919

DV**NORTH
SEA****DEALS
FOR
SALE****UNITED KINGDOM PROSPECT**

One Identified Prospect.
Firm Well Commitment Expanded To---
July 19, 2019.
SEEKING JV PARTNER
CONTACT SELLER FOR MORE INFO
DV 8994FO

DV**NORTH
SEA****UNITED KINGDOM OPPORTUNITY**

One Identified Gas Discovery.
Other Low Risk Undrilled Segments.
SEEKING JV PARTNER
CONTACT SELLER FOR MORE INFO
DV 2052FO

DV**NORTH
SEA****UNITED KINGDOM PROSPECT**

One Drill Ready Prospect.
Proprietary 3D Seismic Survey Available.
75% INTEREST AVAILABLE
Recoverable Resources: 70 MMBO
CONTACT SELLER FOR MORE INFO
DV 2973FO

DV**DRILL
READY****UNITED KINGDOM OPPORTUNITY**

Three Identified Prospects.
Appraisal Well Planned In 2017.
3D Geostreamer Data Available.
Site Survey Imminent. Tendering For Rig. **GRABEN**
OPERATIONS NEGOTIABLE
SEEKING JV PARTNER
Pmean Recoverable: 60 MMBOE
CONTACT SELLER FOR MORE INFO
DV 4926FO

DV**UNITED KINGDOM FARMOUT**

One Appraisal Well Prospect.
Triassic Sherwood Sandstone.
Reprocessed 3D Seismic Survey.
UP TO 50% INTEREST AVAILABLE
Recoverable Resources: 30 MMBO
CONTACT SELLER FOR MORE INFO
DV 2972FO

DV**FARMOUT**

NORTHERN EUROPE

UNITED KINGDOM PROSPECT

Four Identified Prospects.
28th Licensing Round Award.
Full 3D Seismic Data Coverage.
SEEKING JV PARTNER
Total P50 GIIP: 2.6 TCF
CONTACT SELLER FOR MORE INFO
DV 8470FO

DV**NORTH
SEA**

OCEANIA/SOUTH PACIFIC

AUSTRALIA EXPLORATION FARMOUT

Large Structural Prospect Identified With-
Additional Structural & Stratigraphic Leads. **DV**
UP TO 50% WORKING INTEREST AVAIL
Est Mean Prospective: 1.4 TCF **FARMOUT**
P10 Upside: 2.0 TCF
CONTACT AGENT FOR MORE INFO
DV 8005FO

DV**FARMOUT****AUSTRALIA PROSPECT**

Onshore Gas Project.
SEEKING JV PARTNERS **DV**
Certified 2P Reserves: >60 BCF **QUEENSLAND**
Certified 3P Reserves: >280 BCF
CONTACT SELLER FOR MORE INFO
DV 1569FO

DV**QUEENSLAND****AUSTRALIA FARMOUT OPPORTUNITY**

Multiple Identified Prospects.
Early Entry Into An Opening Play. **DV**
Low Cost Entry. 3D Seismic Planned.
SEEKING JV PARTNER **ROEBUCK**
Prospect Resources: 250 MMBO
CONTACT AGENT FOR UPDATE
DV 2818FO

DV**ROEBUCK****CALL
PLS FOR
INFO****AUSTRALIA FARMOUT**

Conventional & Unconventional Prospects. **DV**
SEEKING JV PARTNER FOR PROJECT **COOPER**
2C Gross Contingent Rsrce: 1,572 BCF
CONTACT SELLER FOR MORE INFO
DV 4966FO

DV**COOPER****AUSTRALIA FARMOUT OPPORTUNITY**

Two Identified Prospects. **DV**
Laurel Formation: 2,000m-5,000m.
SEEKING JV PARTNER FOR FARMOUT **CANNING**
Unrisked Mean Prospective: 13.02 TCF
CONTACT SELLER FOR MORE INFO
DV 2115FO

DV**CANNING****AUSTRALIA GAS PROSPECT**

Early Permian Cattle Creek Formation. **DV**
SEEKING JV PARTNER **QUEENSLAND**
Late Permian Coal Seam Gas: >90 BCF
CONTACT SELLER FOR MORE INFO
DV 1538FO

DV**QUEENSLAND**

OCEANIA/SOUTH PACIFIC

NEW ZEALAND OPPORTUNITY

Mangahewa Formation. **DV**
Middle Eocene Ongoing Well Testing.
Data Room Opening May 1, 2017.
Newly Acquired 3D Seismic Interpretation.
UP TO 60% NONOP WI AVAILABLE **TARANAKI**
P10 GIIP Volumes: 381 BCF
P50 GIIP Volumes: 160 BCF
Bid Offers Are Due July 31, 2017.
CONTACT SELLER FOR MORE INFO
DV 2734FO

DV**BUYERS! NO
COMMISSIONS****OFFSHORE AUSTRALIA FARMOUT**

Three Identified Prospects. **DV**
Water Depth: 180-400m. **FARMOUT**
UP TO 50% WORKING INTEREST AVAIL
Mean Potential: 275 MMBO
AGENT MARKETING DIVERSE PORTFOLIO
DV 1383FO

DV**FARMOUT****OFFSHORE AUSTRALIA FARMOUT**

Multiple Untested Structural Trends. **EX**
Recently Acquired Rocket 2D Seismic. **PERTH**
UP TO 50% WORKING INTEREST AVAIL
CONTACT AGENT FOR MORE INFO
EX 8080FO

EX**PERTH****ONSHORE AUSTRALIA PERMITS**

One Ready To Drill Prospect. **DV**
Active Exploration Programme And ---
--Flexible Farm-In Terms.
SEEKING JV PARTNERS **ONSHORE**
Unrisked Prospective: 70-100 MMBOE
CONTACT AGENT FOR UPDATE
DV 8330FO

DV**ONSHORE****WESTERN AUSTRALIA FARMOUT**

Multiple Leads Identified. **EX**
Lower Keraudren Formation.
Existing Seismic Data Available. **ROEBUCK**
SEEKING FARMOUT PARTNER
CONTACT SELLER FOR MORE INFO
EX 4976FO

EX**ROEBUCK****2018 NEW ZEALAND BLOCK OFFER**

Exploration Acreage. **BR**
ONSHORE & OFFSHORE AREAS **BID**
Nominate Areas To Be Considered. **ROUND**
WORK PROGRAMME BIDDING ROUND
BR 2722

BR**BID****ROUND****NEW ZEALAND PROSPECT**

Near Vertical Wildcat ~3,600mBRT
Oligocene Aged Shelfal Limestones. **DV**
Data Room Available May 1, 2017.
UP TO 40% NONOP WI AVAILABLE
Min Case Recoverable: 1.07 MMBO **TARANAKI**
Best Estimate Recoverable: 10.5 MMBO
Max Case Recoverable: 34.33 MMBO
Bidding Offers Are Due By July 31, 2017
CONTACT SELLER FOR MORE INFO
DV 2778FO



DV**TARANAKI****Deals
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PLS PetroWire Database



Production Updates

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Africa

- | | | | |
|---------|---------------------|---|--|
| Apr. 10 | Tanzania- Mnazi Bay |  | Maurel & Prom report that the field averaged 43 MMcf/d during 1Q17. |
| Mar. 31 | Nigeria- Opuama |  | OML 40 has now produced over 330,000 bo from the Opuama-3 well. |





FSU/Eastern Europe

- | | | | |
|---------|-------------------------|---|--|
| Apr. 11 | Russia- Timan-Pechora |  | Average production was 2,726 bo/d during March. |
| Mar. 31 | Russia- Pyakyakhinskoye |  | Lukoil is producing 20,000 bo/d from Pyakyakhinskoye. |



Latin America

- | | | | |
|---------|----------------------------|---|--|
| Apr. 10 | Colombia- LLA-34 |  | The Chiricoca-1 well is currently producing 950 bo/d with less than 1.0% water cut. |
| Apr. 5 | Colombia- Cano Limon |  | Ecopetrol has restarted the Cano-Limon Covenas oil pipeline, which should soon permit production to recommence at Cano Limon and Caricare fields. |
| Apr. 3 | Argentina- Puesto Guardian |  | President Energy's DP1001 well is performing strongly and flowing steadily without pump on continued testing at rates in excess of 350 bo/d. |
| Mar. 24 | Brazil- Tubarao Martelo |  | OGpar reports that the field is currently about 8,000 bo/d. |






Middle East/North Africa

- | | | | |
|---------|--------------------------|---|--|
| Apr. 10 | Egypt- Gharib North West |  | NWG-3 well has been flowing naturally up the casing at 600-1,000 bo/d since late December 2016. |
| Apr. 7 | Iran- Azadegan South |  | The field is now producing 50,000 bo/d from 25 wells. |
| Apr. 3 | Libya- El Sharara |  | Production rose to 200,000 bo/d in early April but was subsequently shut-in again due to resumed fighting. |
| Mar. 28 | Iraq- Badrah |  | Gazprom Neft has brought production at the field to 80,000 bo/d. |



North Sea/Western Europe

- | | | | |
|---------|-------------|---|--|
| Mar. 29 | UK- Breagh |  | 2016 full-year average gross sales gas production was 71.3 MMcf/d. |
| Mar. 27 | UK- Flyndre |  | First oil has been confirmed from the field. Production is expected to peak at around 10,000 bo/d. |

Asia

- | | | | |
|---------|-----------------------------|---|---|
| Apr. 11 | India- Mangala |  | During 4Q16, production from the license increased to an average of 56,000 boe/d. |
| Apr. 11 | India- Cambay |  | Cambay block production was largely stable at 9,477 boe/d during 4Q16. |
| Apr. 11 | India- Ravva |  | Ravva field produced an average of 17,769 boe/d during 4Q16. |
| Apr. 4 | Bangladesh- Rupganj |  | Bapex started producing from the onshore field. |
| Apr. 3 | China- Linxing & Sanjiaobei |  | Full-year production guidance for 2017 is 18-23 MMcf/d. |

South Pacific

- | | | | |
|---------|---------------------------|---|--|
| Mar. 31 | Australia- Cliff Head |  | Tamarind is currently producing 1,300 bo/d from the field. |
| Mar. 24 | Australia- Montara & Skua |  | PTTEP reports the field is currently producing 15,000 bo/d. |

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OCEANIA/SOUTH PACIFIC

PAPUA NEW GUINEA EXPLORATION

Fifteen Delineated Prospects & Leads.

Attractive Fiscal & Operating Conditions..

UP TO 50% EQUITY AVAILABLE

FORELAND

CONTACT AGENT FOR MORE INFO

EX 2116FO

SOUTH AMERICA

COLOMBIA EXPLORATION PROJECT

Two Prospects Identified.

3D Seismic Data Planned.

SEEKING JV PARTNER FOR FARMOUT

UP TO 50% WORKING INTEREST AVAIL

Est. Prospect Reserves: 80-100 MMBO

CONTACT SELLER FOR MORE INFO

EX 1697FODEALS
FOR
SALE

COLOMBIA EXPLORATION PROJECT

Several Prospects Identified.

Tertiary & Cretaceous Objectives.

Recently Acquired 3D Seismic Data.

50% WORKING INTEREST AVAILABLE

Est. Prospect Reserves: 500 MMBO

CONTACT SELLER FOR MORE INFO

EX 1621FO

COLOMBIA EXPLORATION PROJECT

Two Identified Prospects.

Preparing To Drill Prospect Wells In 2017.

SEEKING JV PARTNER FOR FARMOUT

Est. Prospect Reserves: 30-50 MMBO/Ea

CONTACT SELLER FOR MORE INFO

DV 1627FO

SOUTH-CENTRAL ASIA

SRI LANKA OPPORTUNITY

MINI BID ROUND PROCESS

Two Gas Discoveries.

3D Seismic & Well Log Data Available.

WORKING PROGRAMME BID ROUND

BIDS ARE DUE NOVEMBER 2017.

DS 2996BR

SOUTHEAST ASIA

CAMBODIA OPPORTUNITY

Stacked Reservoirs In Multiplied Fault--

--Blocks W/ Hydrocarbons.

NONOP WORKING INTEREST AVAIL

FOR SALE OR FARMOUT

CONTACT SELLER FOR MORE INFO

DV 1911FO

INDONESIA FARMOUT OPPORTUNITY

GAS DEVELOPMENT PROJECT

Reefal Carbonate.

WORKING INTEREST AVAILABLE

CONTACT SELLER FOR MORE INFO

DV 2984FO

SOUTHEAST ASIA

INDONESIA FARMOUT OPPORTUNITY

Production Sharing Contract.

Shallow Oil Bearing Structures.

Low Well Cost & Appraisal Well Planned.

Early Production Possible.

SEEKING JV PARTNER

CONTACT AGENT FOR MORE INFO

DV 2977FO

INDONESIA OPPORTUNITY

EXPLORATION PROJECT

Reefal Carbonate Objectives.

WORKING INTEREST AVAILABLE

CONTACT SELLER FOR MORE INFO

EX 2983FO

OFFSHORE VIETNAM PROSPECT

DRILL READY PROSPECTS

De-Risked By Well Control.

Miocene Reef Large Target.

Derisked By Well Control & 3D Seismic.

33.33% NONOPERATED WI FOR SALE

CONTACT AGENT FOR MORE INFO

DV 2426

SOUTHERN AFRICA

SOUTHERN AFRICA OPPORTUNITY

5 Principal Cenomanian Sand Prospects.

Water Depth: 300-700m

SEEKING JV PARTNER

Total Rsrce Potential: 2,325 MMBBLS

Well Costs: \$40,000,000

CONTACT AGENT FOR MORE INFO

DV 1880FO

WEST AFRICA

WEST AFRICA OPPORTUNITY

Five Development & Appraisal Wells.

Gas Discoveries & Upside Identified.

Deepwater Prospects & Leads.

New 3D Seismic Data Available.

WORKING INTEREST FOR SALESEEKING FARMOUT PARTNER

Gross Mean Upside: 450-770 BCF

ML Resources: >700 BCF

Estimated Well Cost: \$20,000,000

CONTACT AGENT FOR MORE INFO

DV 2961FO

SAO TOME & PRINCIPE FARMOUT

Multiple Structural Prospects.

Water Depths: 1,500m to 2,500m.

EQUITY & OPERATORSHIP AVAILABLE

SEEKING JOINT VENTURE PARTNER

Drill or Drip Decision By January 2018.

CONTACT AGENT FOR MORE INFO

DV 2891FO

Licensing

■ **3D Oil** was awarded rights to WA-527-P offshore Western Australia. Efforts to date in the block consist of a broad 2D seismic grid. No exploration wells have been drilled. The minimum work program consists of geological studies in the first two years and acquisition of 510 sq km of 3D seismic in the third year. 3D is sole owner and looking for a farm-in partner.



■ **Bahamas Petroleum Co.'s** four southern licenses—Basin, Cooper, Donaldson and Eneas—have been renewed by the government for a second three-year exploration term. In addition, the islands' regulators extended the time BPC will have to meet its renewal obligation of drilling one exploration well in one of these four blocks by 12 months. This means that BPC now has until April 2018 to drill the well.



■ Georgia's Ministry of Energy announced an open tender for onshore oil and gas blocks. The tender started in early April, offering eight areas in central Georgia totaling about 23,210 sq km. Bids are due in late May. A likely participant is **Frontera Resources**, which owns 100% of Block 12 and is engaged in exploration and development work there.

■ **Oil Basins** gave up its 50% stake in EP 487 onshore Western Australia. The company made the move after determining that the block was no longer a core asset, making Oil Basins unwilling to fund a two-well program. As a result of Oil Basins' exit, **Rey Resources** will take over the block. EP 487 is a 5,063-sq-km license that is prospective for shale gas in the Laurel formation.

■ Guinea-Bissau granted **Svenska Petroleum** a three-year extension for the Sinapa and Esperanca permits. This gives Svenska more time to evaluate new 3D seismic data, after which the company must drill an exploration well in each block. The wells will likely target shelf edge areas of the two concessions, which are geologically similar to the SNE discovery off Senegal. Svenska (70.71% WI) operates with **Far Ltd.** (19.28%) and **Petroguin** (10%).


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Well Results

More coverage at wire.petrowire.com


Africa


Mar. 27 **Senegal- Sangomar**  The VR-1 well found a gross oil column of 97 m across several reservoirs.


FSU/Eastern Europe


Mar. 11 **Azerbaijan- Guneshli Shallow**  **Socar** brought a new well on stream at the field at the rate of 625 bo/d.

Latin America


Apr. 10 **Brazil- REC-T-94**  The Praia do Espelho well was plugged and abandoned as uncommercial after reaching 2,333 m TD.


Apr. 6 **Colombia- Playon**  A test of the Boranda-1 well after perforation of selected intervals produced 94 bo/d with a 23-30% water cut.


Apr. 6 **Colombia- Cabrestero**  **Parex's** Bacano-3 well reached 3,706 m and then tested. It produced at the rate of 1,857 bo/d over seven days.

Mar. 30 **Colombia- Platanillo**  Platanillo-22 was drilled to 2,658 m TD and intersected 15 m of gross pay across three interval sections.

Middle East/North Africa


Apr. 10 **Egypt- North West Gharib**  NWG-39 was drilled to 1,720 m TD and intersected a thick section of the Red Bed reservoir that was water bearing.


Apr. 5 **Libya- Aread D**  An **Eni** exploration well on the Gamma prospect found hydrocarbons in the Eocene Metlaoui Group.

Mar. 27 **Egypt- North Damietta**  The Qattameya Shallow-1 exploration well found gas after being drilled to 1,961 m TD.


North Sea/Western Europe

Apr. 11 **Norway- Edvard Grieg**  **Lundin** appraisal well 16/1-27 drilled on the SW flank of the field found a 15-m gross oil column in a 94-m thick sand reservoir.

Mar. 27 **UK- P2308**  The Halifax exploration well found over 1,000 m of net oil pay after being drilled to 1,846 TVD.


Mar. 24 **Norway- Gimle**  **Statoil** drilled wildcat well 34/10-55 S to 7,811 TMD and intersected 170 m of hydrocarbon pay, about 60 m of which was in good-quality sands.


Asia


Apr. 3 **Vietnam- White Swan**  Well TN-3X on the White Swan prospect found gas after reaching 1,037 m TMD.

S. Pacific

Apr. 10 **Australia- PEL 638**  The Silver Star-1 exploration has found signs of gas in the secondary Toolachee and Epsilon formations after reaching 3,343 m TD.

Apr. 5 **Australia- PEL 182**  DST at Hoplite-1 recovered free oil at non-commercial flow rates in the secondary Birkhead formation.

Apr. 5 **Australia- PRLs 151-172**  Mokami-1 found gas, confirming a westward extension of the Patchawarra gas fairway.

Apr. 5 **Australia- Pennington**  Pennington-5 reached 1,805 m TD and found 4.0 m of net oil pay across two reservoir sections.

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Asia

CNOOC moves South China Sea gas project to FEED

CNOOC issued a FEED tender for a semi-submersible production platform for its Lingshui 17-2 gas discovery in the South China Sea. Lingshui 17-2 will be developed as an 11-well subsea tieback to the deepwater platform. Initial production of 242



MMcf/d is expected at YE20, with volumes eventually rising to a peak of 970 MMcf/d in

2030. Gas will be piped to Hong Kong via existing infrastructure and then on to other markets in Guangdong province.

CNOOC says Lingshui contains a recoverable 4.8 Tcf, an increase over the 3.5 Tcf it was certified at in 2015. The Lingshui 18-1-1 exploration well discovered new gas near the field in February 2016. CNOOC didn't report details of the find at the time, possibly due to a territorial dispute with Vietnam but did note that Lingshui 18-1-1 was flow tested. CNOOC is Lingshui 17-2's sole owner.

Lingshui 17-2's reserves 37% higher at 4.8 Tcf than certified in 2015.

Bapex starts flowing 176 MMcf/d from Bangladesh gas field

Bapex started up a new gas field in Bangladesh. Rupganj-1 is now producing 176 MMcf/d at 500-550 psi and delivering gas into the national grid. However, Bapex believes



that the field is capable of producing 350-525 MMcf/d and will likely drill another

well to increase production. Bapex estimates that Rupganj contains 50 Bcf, mostly in a pay zone at 3,600 m, but there is also a shallower, 6.0-m gas-bearing zone at 3,330 m.

Rupganj lies onshore in Block 20. The field was discovered in 2014 but was not put on stream until now because of infrastructure issues. The field sits in a residential area and requires more regulatory approvals than is normal. Bapex is sole owner.

2nd well could take production up to 525 MMcf/d.

Mari appraisal in Pakistan probes 2007 discovery

Mari Petroleum's Bhitai-2 reached 1,170 m TD to appraise upside potential of the Sui Main and Sui Upper lime in the Bhitai Compartment. After successfully intersecting the target



intervals, a DST produced 8.0 MMcf/d on a 48/64-in. coke at 653 psi. The well was then completed

as a production well. The well is a follow-up to Bhitai-1, which flowed sweet gas from the Lower Eocene Sui Upper and Sui Main at the rate of 11.3 MMcf/d after being drilled in 2007.

Bhitai-2 is the second successful well in two months for Mari, which drilled and tested the Shaheen-1 exploration well in March. Shaheen-1 also targeted the Sui Main lime, but produced 12 MMcf/d after being drilled to 1,175 m TD. Mari lies near Daharki and was discovered by Esso in 1957. First gas was in 1967. Mari Petroleum is sole owner of the field.

Follow-up to Bhitai-1 produces 8.0 MMcf/d from Sui Main & Sui Upper lime.

People & Companies

■ Anuj Sharma replaced Alejandro Jotayan as Andes Energia's CEO, with the latter also quitting as CEO of InterOil E&P.

■ BP reports that Cynthia Carroll and Andrew Shilston will not stand for re-election as non-executive directors at the supermajor's May annual general meeting. The board



said it would propose Melody Meyer be elected to one of the non-exec director positions. Meyer recently retired after 37 years at Chevron; she is the former president of Chevron Asia Pacific Exploration and Production Co.

■ At Bowleven, Christopher Ashworth replaced Billy Allan as chairman, with directors Kevin Hart and Kerry Crawford also leaving. Meanwhile, Eli Chahin was named acting CEO as Joseph Darby joined the company's board.

■ Cairn India brought on Melody Meyer and Atul Gupta as senior advisors to direct the company's growth. Meyer has 37



years of experience with Chevron, most recently as president of the supermajor's Asia-Pacific unit. Gupta's 36-year career has included leadership roles including CEO at multiple oil and gas companies and, more recently, advising private equity firms.

■ Egypt's oil ministry named new leadership to state-owned EGPC and EGAS. Abed Ezz el-Regal will take over as head of EGPC from Tarek al-Hadidi, who was appointed last April. At EGAS, Osama Al Bakly will replace Mohamed al-Masry.

■ Italy, which owns one-third of Eni, says it will back CEO Claudio Descalzi for a second term. The renewal of the term must be approved by shareholders, but the government's backing essentially makes that a formality.



■ The CFO of Genel Energy, Ben Monaghan, is reportedly stepping down from that position. No reason was given, but the move may be related to the writedown of reserves Genel's Taq Taq field in Iraqi Kurdistan.

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People & Companies

■ **Independent O&G** appointed *Andrew Hockey* to its board as deputy CEO. Hockey has 35 years' experience in the industry, most recently with **Fairfield Energy** and **Sound Energy**.



Also joining the board is *Hywel John*, who will be Independent's CFO. John was previously CEO of **Bayfield Energy**, CFO of **Candax Energy** and senior executive at **Burren Energy**. Also appointed to the board was *Charles Hendry*, as non-executive director. Leaving the board are *David Peattie* and *Peter Young*. Meanwhile, CEO *Mark Routh* will become interim chairman.

■ **InterOil E&P** announced that CFO *Pablo Arias* will take over the CEO role on an interim basis following the resignation of *Alejandro Jotayan*. *Leandro Carbone* was named COO. The company said there would be no new appointments to the board.

■ **Petrobras'** board approved CEO *Pedro Parente's* reelection for a new two-year term. Parente was initially elected last May to head the state-controlled Brazilian producer, replacing *Aldemir Bendine*.

■ *Stuart Connal* has retired as **Seplat Petroleum Development's** COO. So far the company has not yet named a replacement.

■ **Serinus Energy** has named *Trevor Rath* vice president of operations. For the past two years Rath has worked as a consultant to various oil and gas companies. Prior to that, he was country operations manager for **Storm International Ventures** in Tunisia.

■ **Sinopec** named *Li Yunpeng* as a group VP and deputy secretary of the Chinese state-owned refiner's party committee. Before joining Sinopec, Li worked from 1998-2015 at **China Ocean Shipping Co.**, ultimately rising to president of the party committee. Sinopec also announced the retirement of board of supervisors chairman *Liu Yen*.

■ *John Bridges* joined the **Association of International Petroleum Negotiators** as its new executive director. Bridges has 35 years' experience in oil and gas.

Licensing

Exxon & Qatar sign E&P contract for Cypriot block

ExxonMobil and **Qatar Petroleum** signed an exploration and production sharing contract with Cyprus covering offshore Block 10. The 2,572-sq-km permit lies off Cyprus' southeast coast and was awarded to the pair as a result of their bidding in last year's licensing round. The partners are already carrying out a 3D seismic survey on the concession and planning to drill the first of two commitment wells in 2018. Block 10 lies west of **Total's** Block 11, where the French supermajor will be drilling an exploration well this year on what is believed to be an extension of the same formation housing **Eni's** giant Zhor field off Egypt.

Cyprus' 2016 licensing round received interest from several companies, including two supermajors, and ended having two other blocks being awarded in addition to Block 10. Total and Eni won Block 6, which sits immediately north of Block 10, while Eni received sole rights to Block 8, which lies just west of three existing Eni licenses and just north of **Noble Energy's** 4.5 Tcf Aphrodite find. Other companies that put in bids were **Cairn Energy** and **Delek Group**, which sought rights to Block 8, while Block 10 was also bid on by the Total-Eni combine and, separately, by **Statoil**.

A 3D seismic collection effort is underway; well is planned for 2018.

Thailand to offer onshore & offshore assets in H2

Thailand's Erawan and Bongkot gas fields will be put to bid in December. The fields have combined production of 2.2 Bcf/d, or about 76% of all volumes coming from the Gulf of Thailand. They are operated by **Chevron** and **PTTEP**, respectively, but their licenses will expire in 2022 and 2023. The fields may be part of Thailand's planned offer of 29 new onshore and offshore oil concessions in 2H17.

As part of this larger offer, Thailand will sweeten its licensing rules to entice new investment. Currently, companies must get a concession to operate a Thai field, but the Thai assembly has approved an amendment to a petroleum law that will give companies the option of making a permit either a service contract or a production service agreement.

Two fields account for 76% of Gulf of Thailand volumes.

Statoil leads UK's 29th license round

Several large companies were granted acreage offshore UK as a result of bids received by UK Oil & gas Authority in the UK's 29th Offshore Round. Among them were **Statoil**, which won rights to four licenses in the northern North Sea, while **Shell**,

BP and **ExxonMobil** picked up blocks near the Shetland Islands. In total, 25 licenses were offered, covering 111 blocks, while 17 companies, out of 24 that applied, were offered licenses. However, the 111 blocks constitute less than 10% of the 1,261 originally tendered.

Only one company, Statoil, committed to drilling wells, while all others simply have to collect or reprocess seismic data prior to a drill or drop date. The 29th Round was the first in two decades focusing solely on frontier, under-explored areas of the Rockall Basin, Mid-North Sea High, and part of the East Shetland Platform. Recent government acquisition of new seismic data in these areas and more flexible licensing arrangements, say officials, helped keep up interest despite low oil prices.

Was only player to commit to drilling wells in its newly awarded acreage.



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