



In this Transformative Age, do you compete or collaborate?

Global oil and gas
transactions review 2018



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Introduction

2018 was a rollercoaster of a year in oil markets. We began the year with high hopes that the price recovery that started in early 2016 would continue and bring us to a sustainable point of balance between supply and demand. We ended the year with the realization that the world is an unpredictable place. Governments decide, and then undecided, to sanction a major producer. Capital markets continue to fund the growth of marginal production. Dominant market players adjust, sometimes grudgingly, and bring the market back to equilibrium. As of this writing, oil prices are around where we started in early 2015.

Total global transaction value

2017

US\$347.1b

2018

US\$426.8b

18%

decline in the number of global transactions compared with 2017

Megadeals

(more than US\$1b) flat

79

deals in 2018

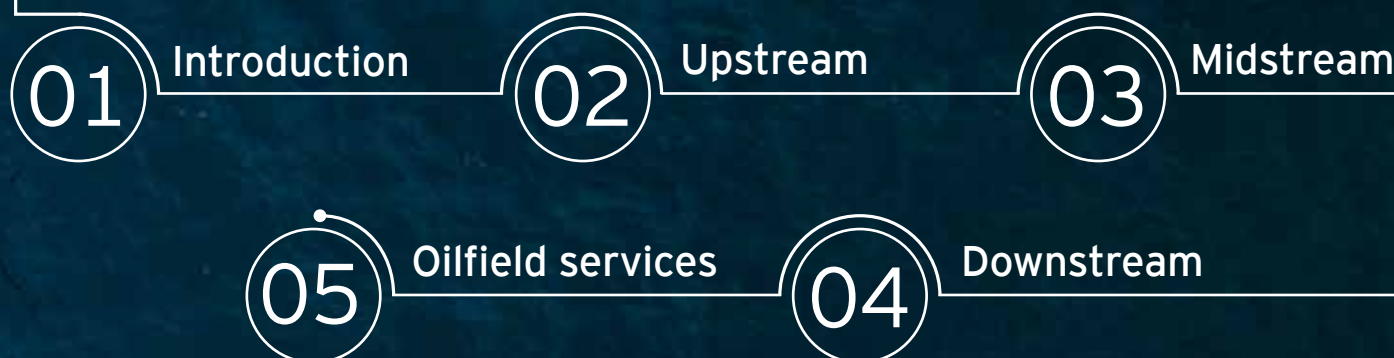
79

deals in 2017

60

deals in 2016

Contents



Hopes have been raised in the gas and LNG markets. In the near term, gas to LNG spreads have widened sufficiently to pique interest in new liquefaction projects. In the longer term, the market sees substantial upside opportunity for gas as a power generation fuel, competing with and complementing renewables. Sustainable commercial risk allocation and financing models are the remaining speed bumps.

Energy transition continues to weigh heavily on companies' portfolio strategies. Although movement toward low-carbon alternatives is nascent and occasionally halting, the prospect of peak oil demand commands a lot of attention. Companies (including IOCs) are constantly on the lookout for hedges against their fossil fuel bets.

The transaction environment for the past three years has reflected adjustment to the perceived new normal and the anticipation of a recovery. Few people expected prices to get back to US\$100 per barrel, but no one thought that US\$50 was sustainable. Upstream assets changed hands as market players rebalanced their portfolio of risks in light of economic shifts. Capital moved

midstream and downstream as companies strived to insulate themselves from commodity market uncertainty and mitigate egress challenges.

Transaction value was up US\$79.7b year over year; excluding midstream transactions, values were down by about US\$29b. Upstream, the process of portfolio rebalancing had mostly played out and values were down significantly. Midstream, the response to US tax reform dominated. Downstream, the flight toward stability continued.

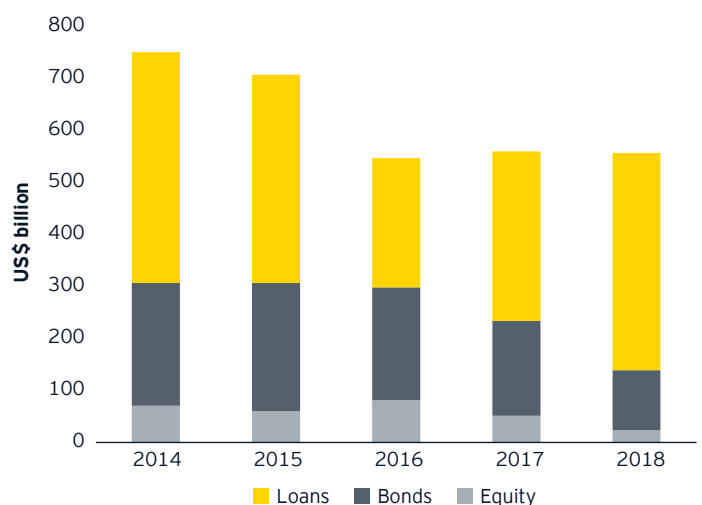
No one knows how 2019 will play out in the commodity markets. The stand-off between the resolve of OPEC+ and unconventional assets in North America will be an important focal point. The latest move in crude oil prices will push assets toward owners who can fund development, notwithstanding swings in returns and cash flows. Downstream, the driving force will be a continued expectation that petrochemicals will be an important source of new demand and that marine bunker fuel requirements will put increasing pressure on the refining sector. New capital will be required and, inevitably, that means transactions.



Capital outlook

The raising, deployment and return of capital, particularly in the upstream segment, has always been a key indicator of the market conditions and a driving force in the oil market outlook. As confidence waxes and wanes, the demand for growth capital grows and shrinks. The level of capital raised has stabilized in recent years but hasn't fully recovered to amounts seen before the 2014 oil price crash. Industry experience in the aftermath of 2014 also resulted in a much needed focus on capital discipline. Supported by rising commodity prices through most of the year, companies have been able to fulfill that promise in large part.

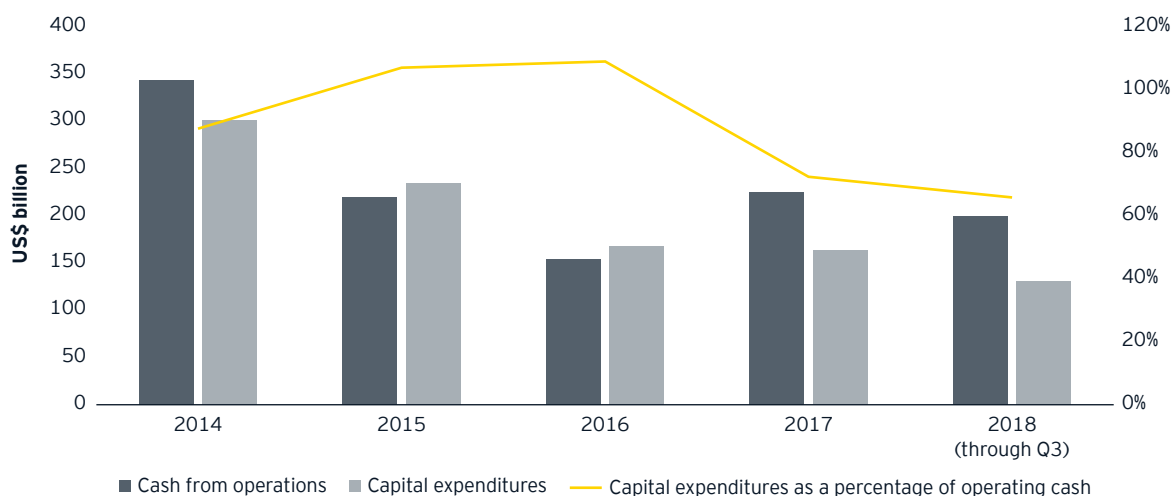
Capital raised



Source: EY analysis of data from Thomson One



Cash flow from operations and capital expenditure of selected oil and gas firms



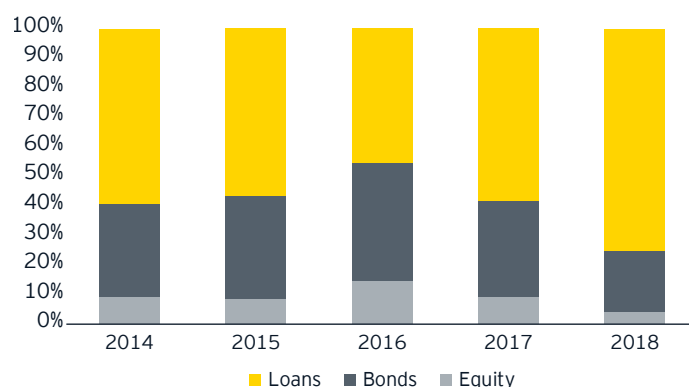
Source: EY analysis of data from Capital IQ

Capital raised by selected oil and gas companies in 2018 remained flat at a five-year low and capital expenditures as a percentage of operating cash were at a five-year low, as well. To a large extent, this trend has been enabled by stronger commodity prices and more plentiful operating profits at the same time, capital spending increases were modest as firms (as promised) were judicious about spending capital. We expect capital spending in 2019 to remain restrained - the retreat in commodity prices at the end of the year underlined the need for flexibility in planning and budgets.

Oil and gas companies' portfolios are evolving, with investments in alternative/renewable energy, utilities, technology and shifting hydrocarbon plays all featuring on the strategic agenda. The financing sources in the current landscape are also evolving.

The percentage of funding raised from public markets (equity and bond) fell for the second consecutive year from 22% to 17%. Firms have retreated somewhat from the equity markets (or vice versa). Alternative capital sources such as private equity have been steadily filling the gap created by public equity. For example, in the US during 2010-2014 the share of PE in the acquisition and divestiture (A&D) market increased from about 10% to 50%. The market share further increased to about 70% by mid May 2018.

Share of total proceeds of capital raised

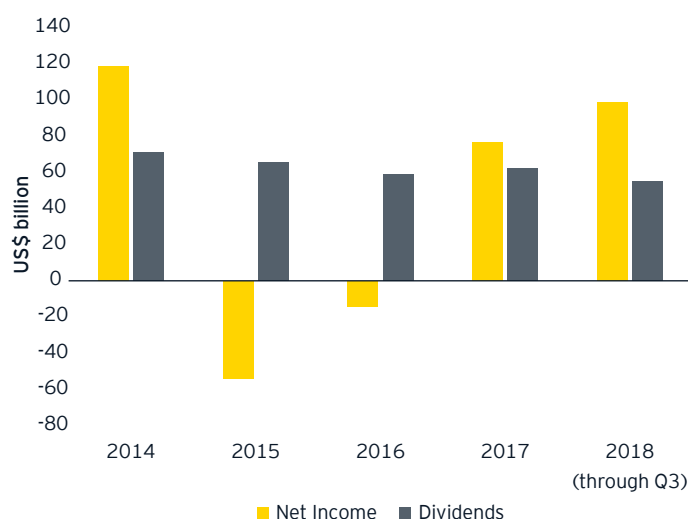


Source: EY analysis of data from Thomson One

Bank loans, which accounted for less than 50% of capital raised in 2016, have risen to more than 70% in 2018. Including bond issuance, the proportion of debt funds in the total proceeds of capital raised in 2018 (96%), surpassed the proportion in 2014 (91%). Higher and (at least for the first three quarters of 2018) more stable crude prices resulted in lenders being more willing to lend. The two leading capital raises this year, US\$8.6b by Zhejiang Petrochemical and US\$5b by Lundin Petroleum, were both structured as loans. Loans continue to account for a large portion of the capital raised and increased by 28% in volume in 2018 year-over-year. How durable this may be if US\$ monetary tightening continues is a key question.

The industry downturn, while difficult, has driven the global oil and gas industry to become more cost and capital efficient. Although investors continued to receive steady dividends through the downturn, earnings in 2018 have now reached a level that is sufficient to support dividends and capital expenditures, perhaps reducing the need of companies to turn to the capital markets or at least giving investors confidence that capital is perhaps aligned to delivering growth rather than supporting a dividend stream. According to IHS, the oil and gas industry is expected to register a year-over-year growth of 9% in its ordinary dividend payments amounting to about US\$187.9b, the highest growth rates among other industries, in 2019.

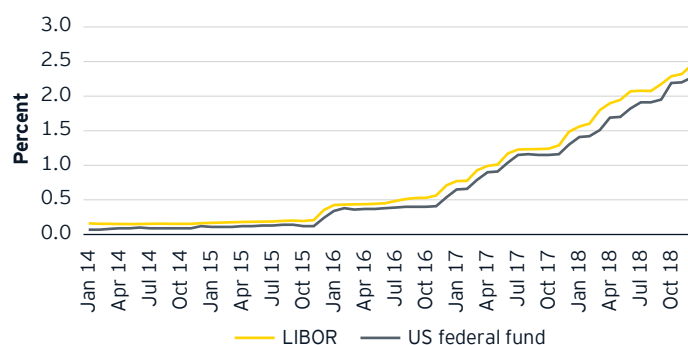
Net income and dividends of select oil and gas companies



Source: EY analysis of data from Capital IQ

Central banks are stepping back from the free flow of money that started in 2008 with the global financial crisis. The abundance of cash enabled strong economic growth, consistent oil demand growth and capital investment. Rising interest rates are a potential threat to economic growth, oil demand and the demand for external capital by oil and gas companies.

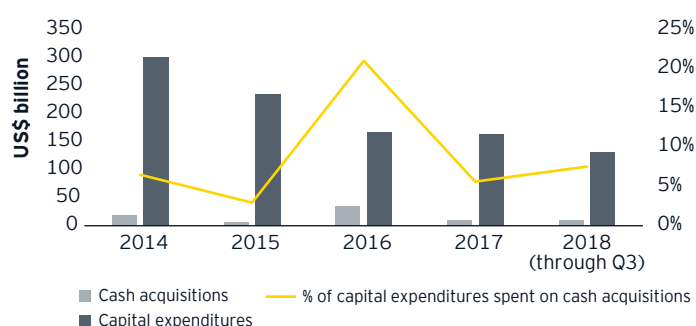
Key lending rates



Source: Federal Reserve Bank of St. Louis

M&A is expected to continue as a key driver of the demand for capital. In 2018, the percentage of capital spent by O&G firms on cash acquisitions ticked up slightly, although it is considerably below the peak it reached in 2016 at the trough of the last commodity cycle. Consolidation of oil firms is expected to grow, particularly in North America where the growth of unconventional oil production will require new capital, much of which will come from acquirers. Based on EY Global Capital Confidence Barometer, about 94% of the oil and gas executives expect the global M&A market to improve in 2019.

Cash acquisitions and capital expenditure of select oil and gas companies



Source: EY analysis of data from Capital IQ

As noted above, private equity is an important source of capital for many and is anticipated to be used as a financing medium of choice by a number of new independent players in the market. For instance, in the UK and Norwegian Continental Shelf the assets divested/relinquished by the majors are being taken up by new independent players backed by private equity funders.

It is likely that the PE vehicles being created may seek the IPO exit route for their investments rather than selling to prospective buyers. While such flotations will be sensitive to equity market conditions and oil and gas prices, this may be an indication that public equity markets could return to an increasing role in future years.

Valuations

There has been significant stakeholder pressure on carbon emissions, and gas has become the transitional fuel of choice as we try to migrate to a lower-carbon world. This has driven the hunt for new end markets for gas, as the oil majors look for new markets to extend their long positions in gas. Entering new markets creates more risk, including volume risk driven by local gas demand and price risk related to exchange rate exposure since the end customer is likely to be paying in local currency. Significant capital risk exists because new infrastructure needs to be put in place to deliver

the gas. This creates exciting opportunities for growth, but also introduces risk that can place downward pressure on valuations. The activist investor pressure on oil majors to reduce their contribution to emissions has also led oil companies to invest in low-carbon infrastructure such as electric vehicle infrastructure and renewable energy infrastructure. This capital attracts lower returns than conventional oil and gas, and while the allocation is small, it raises the question of whether the oil company or the investor is best-placed to make social risk vs. social return decisions.

We have seen a drive for integration, with companies expanding further downstream and thus trying to diversify risk. The national oil companies have been keen to invest further downstream from the barrel, a natural technological progression that allows for value creation by exploiting synergies from scale and working capital. These initiatives have been supported by their host governments as they implement diversification strategies and try to reduce their dependence on upstream activity. Similarly, oil price volatility

has persuaded the international oil companies to reallocate capital to capture value further downstream, reducing the overall risk of the value chain and potentially increasing the value of the sum of the integrated parts.

Upstream deal activity continues the trend of private equity-backed independents looking to deploy capital in mature basins while the oil majors continue to focus on technology-led, large and capital-intensive plays (e.g., shale, deep-water) while divesting smaller mature non-core assets. Independents appear to be paying fair prices for the risks of operating in mature basins with relatively mature infrastructure by increasing focus on cost reduction and maximizing production with the overall aim of building portfolios of critical mass. The focus of the oil majors, with their significant capabilities and financial strength, has been to transact and invest in large higher-risk/higher-return opportunities, given their ability to deploy advanced research and development know-how along with large-scale capital availability.









Upstream

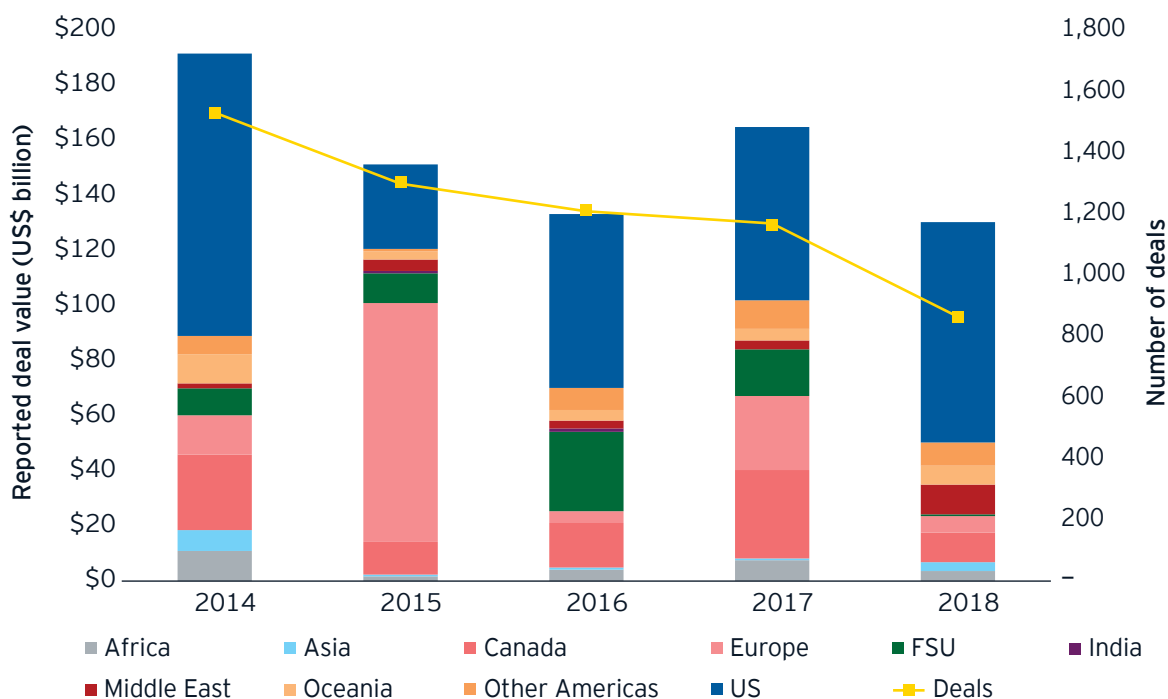
On average oil prices were higher in 2018 than 2017. The year ended with an almost-complete retreat from the gains of the last two years which no doubt affected reported overall global M&A activity levels. Upstream deal values declined from US\$164.8b to US\$130.3b, and deal counts declined 26%. Other factors impacting M&A activity included a more disciplined approach to capital deployment, with upstream players focusing on their highest productivity capex-related investment and reducing debt. Debt-to-equity ratios continued the downward trend they've been on since the price collapse in 2014, driven by stronger player consolidation and restructuring. Despite the much talked about

transition from oil to gas this did not seem to translate into gas specific transactions activity; indeed the proportion of these deals declined from 21% to 13% over the year.

As in 2017, the US led the way in terms of deal value and volume, comprising 60% of total upstream transaction value in the year. Given continued Permian and Eagle Ford transactions, coupled with other portfolio alignment across North America, 2018 was characterized by mixed activity levels in other regions. There were increases in activity in the Middle East (as national governments continued a program of raising capital through divesting concession agreements);



Upstream oil and gas transactions



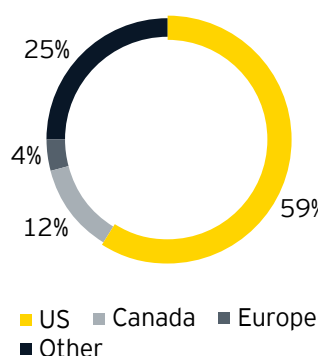
Asia, where both national oil companies and large investor-owned players reset positions; and Oceania, where stronger operating performers captured consolidation opportunities with rebounding commodity prices. There was a steady decline in Canadian deal volume with consolidation and asset swaps forming the majority of transactions as companies focused on creating operational and financial synergies in their portfolios. Activity was more limited in Europe as the region reverted to a more typical upstream market and deal volume in the FSU significantly declined as the ongoing impact of sanctions curbed appetite for investment in the region.

Key themes, common across different geographies, drove the sector's capital allocation and transaction activity, as described below.

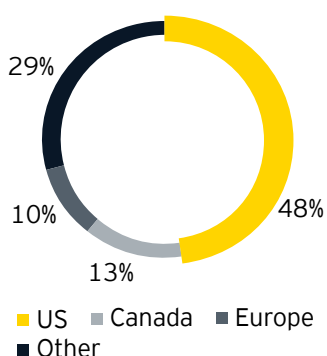
Although 2017 saw a continued shift from growth to value, where companies realigned portfolios to take advantage of new capital allocation realities and transaction opportunities, 2018 was characterized by moves to provide more efficiency and optionality within portfolios. The increase of mergers and joint venture structures exemplified this. The specific objectives of each deal vary, but an overall theme has been to drive efficiency, increase profitability, and provide future development and expansion options in locations with lower market access risk. Deals in the US, such as Concho-RSP Permian, have helped consolidate positions for cost effectiveness and infrastructure advantage in the Permian Basin. Meanwhile, the successful combination of Wintershall and Dea was an example of businesses seeking to realize operating and financial synergies with potential to realize value through a subsequent IPO.

2018 also saw supermajors aligning portfolios to provide increased optionality. For example, investment in deep-water assets, such as ExxonMobil in Guyana, Shell and ExxonMobil in Brazil, and continued LNG integration in the Middle East, suggests these companies are positioning their portfolios to insulate themselves from price volatility.

Global deal value split



Global deal volume split



The year also saw innovative deal structures in the Western Canadian Sedimentary Basin Stress, where government institutions are working actively with players across the hydrocarbon value chain to create viable paths to complete converted products in fuels, petrochemicals and agrichemicals. We have also seen creative transaction solutions to deal with decommissioning costs in mature, late-life North Sea assets, which, together with a supportive fiscal environment by a host government (e.g., the UK), have helped drive continued interest from private equity buyers in the region. These buyers have different capital return profiles and are seeking to expand portfolios by lowering operating costs and extending field life, and they have continued to be active in the North Sea. Numerous ongoing processes suggest strong activity will continue in 2019.

Last year, we considered the proposed Saudi Aramco IPO and the potential for paving the way for further NOC activity in global capital markets. However, with the Aramco IPO postponement and the subsequent geopolitical tensions, NOC activity has primarily centered on disposing concessions and resetting fiscal terms to attract capital or gain market access. The UAE has been particularly active entering into concession agreements with large-cap corporates, such as Eni and OMV. NOCs have also been competing for capital and creating venture opportunities. Examples include PETRONAS and Saudi Aramco, and Sonangol linking upstream production to downstream conversion.

2019 outlook

Notwithstanding the retreat in oil prices, the market seems to have confidence in the prospects for upstream assets. Month-to-month and year-to-year, commodity markets will move unpredictably as trade wars, interest rates, economic growth, political violence and the response of OPEC+ (as the market balancer) push and pull against each other. Overlaying all of this

are the economic fundamentals, which remain robust. The world will need oil and gas to fuel its present as it moves toward a lower-carbon future. As that happens, companies will be constantly rebalancing their portfolios as their view of speed and nature of the transition evolves.





US\$193.1b

Total midstream deal value increases 128% year over year

135

Total midstream deal volume up 6%

45%

Midstream % of total deal value up 21%

Midstream

2018 was the biggest year for midstream transactions in the past five and represents the largest total deal value for oil and gas transactions. North America dominated: 95% of all deal value and 19 of the top 20 transactions by value were in the US and Canada.

Corporate simplification drove almost 75% of the total deal value and a fifth of the deal volume as companies restructured and consolidated their affiliates due to changes in US tax regulations. Companies continued to focus on lowering capital costs, increasing capital access and improving balance sheets to position for infrastructure expansion.

Three major themes dominated midstream transactions in 2019:

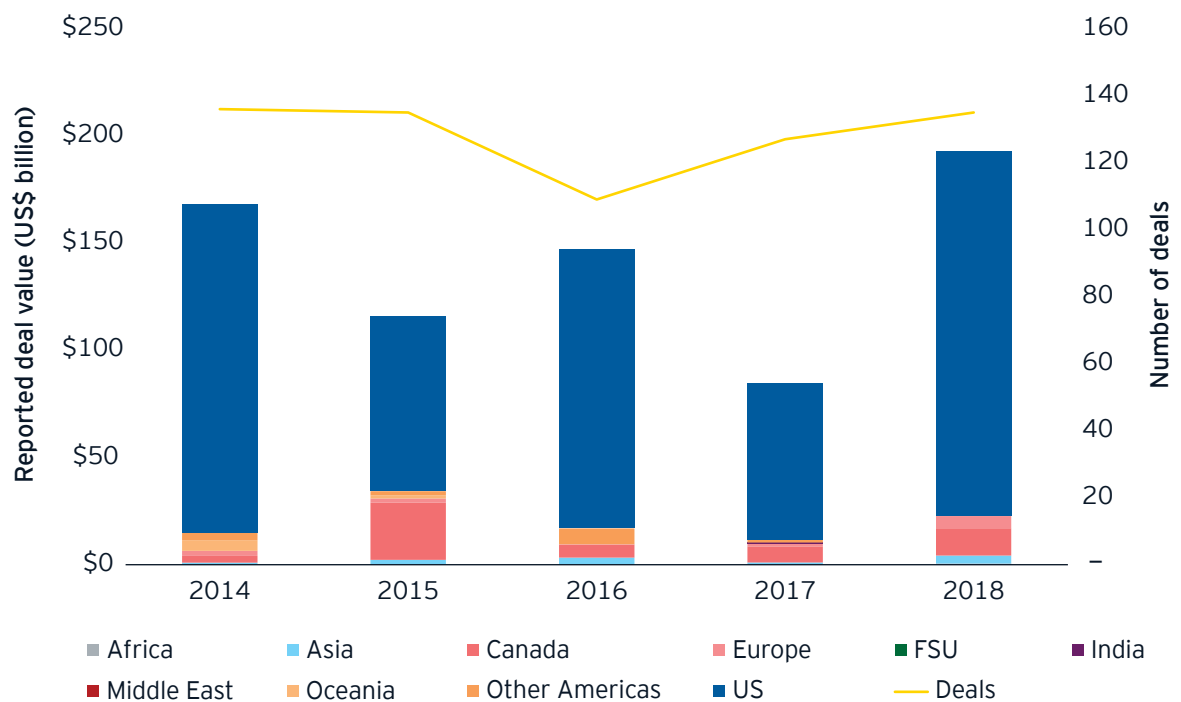
- Corporate simplification
- Pipeline politics and bottlenecks
- Private equity investment

Corporate simplification rules the day

Continuing the MLP capital structure reset trend from 2017, US\$140b of total announced deal value, including the top 10 deals by value in 2018, was driven by corporate simplification and capital restructuring. Energy Transfer's US\$60b



Midstream oil and gas transactions



corporate simplification merger accounted for almost one-third of total 2018 midstream transaction value. Four of the top 10 deals (and US\$23.3b in value) resulted from Canadian Enbridge Inc. completing the Spectra Energy takeover, consolidating their affiliated companies and simplifying their corporate structure. With capital restructuring nearing completion for most of the North American major midstream players, 2019 should allow for a renewed focus on portfolio rationalization and growth.

Pipeline politics and bottlenecks: a stark reality

Although globally, the oil and gas sector benefited from stronger prices in 2018, pipeline bottlenecks caused localized differentials to widen to record highs. Limits for associated natural gas egress in the Permian resulted in higher-than-normal Waha-Henry Hub differentials and stimulated transaction activity in the Eagle Ford, as producers looked to invest their capital in a less-constrained basin. Canada, however, was hit exceptionally hard by capacity constraints.

Limited pipeline export capacity, along with extended refinery maintenance in the US Midwest, caused historically wide Western Canadian Select (WCS) to West Texas Intermediate (WTI) oil differentials. The biggest gap, US\$52 per barrel, was recorded in October (typically, the differential is between US\$10 and US\$15 per barrel). In Alberta alone, 190,000 barrels of stranded raw crude oil and bitumen are

being produced every day without egress solution, and roughly 35 million barrels are in storage.¹ To temporarily alleviate the situation and reduce the volume of distressed barrels on the market, the Alberta Government stepped in to mandate a production curtailment of 8.7%. This removed 325,000 bpd of output starting Q1 2019 and has reset the differential to record lows of US\$7/bbl.

The lack of pipeline capacity also triggered an increase of crude-by-rail exports in 2018: the National Energy Board (NEB) reported a record around 270,000 bpd in September (Press 2018). Though the producers were initially reluctant to commit to rail capacity as rail companies sought multiyear contracts, they were compelled to accept the costly temporary solution after witnessing two major pipeline projects being delayed: Trans Mountain's expansion project and the TransCanada Keystone XL.

In an effort to break the gridlock, the Canadian Federal Government purchased the Trans Mountain pipeline from Kinder Morgan Canada Ltd. for CAD\$4.5 billion in May 2018. Construction of this pipeline is critical for Canadian trade independence from the US. Despite the Canadian Government's new ownership, however, the project's approval status was subsequently quashed by the Federal Court of Appeal, which alleged that the NEB failed to properly consult with First Nations and Indigenous parties. As a result, construction of the 1,150km project is on hold as of the time of writing.

In parallel, in the US, a federal district judge in Montana stopped the crucial Keystone XL project, citing insufficient review of the project's environmental impact. This further delayed construction of the pipeline designed to bring Alberta bitumen to the refineries on the US Gulf Coast. Enbridge's Line 3 project has been approved by the state of Minnesota; however, in December, Minnesota Governor Mark Dayton's administration appealed a state regulatory panel's approval.

Despite these challenges, we anticipate further transaction activity in the US to support an investment upward of US\$120b over the next six years to address US pipeline bottlenecks. This will likely be supported by continued PE investment.

Continued private equity investment

Keeping up with 2017's trend, PE players continued to seek positions and assets in advantaged midstream infrastructure. They more than doubled their 2017 deal value with US\$12b in transaction activity. Global Infrastructure Partners, Riverstone, OMERS and First Reserve each made US

infrastructure deals in excess of US\$1b with a combined value of US\$7.3b. As long as financing conditions do not change materially, this trend is unlikely to abate as competition for a share of the critical and steadily growing infrastructure pie continues into 2019.

Trends beyond North America

With over 95% of 2018 midstream deal value in North America, most midstream transactions for the rest of the world were dominated by LNG and pipeline assets. EDF and Total's US\$3.2b sale of their stake in Dunkirk LNG, continental Europe's largest LNG terminal, to Belgian infrastructure company Fluxys and a consortium of Korean investors marks the single largest international midstream deal. Kuwait sovereign wealth fund's UK infrastructure group, Wren House Infrastructure Management, acquired the UK North Sea's largest independent midstream assets (North Sea Midstream Partners) from ArcLight Capital for US\$1.7b. ArcLight is seeking to reinvest US\$660m into the US with its active pursuit of American Midstream Partners LP. On balance, international midstream transactions were focused in Europe, the UK, Asia and North Africa.

2019 outlook

For many, 2018 was the year that continued delays on critical infrastructure projects came home to roost, with record-high price differentials and price volatility. North American transaction activity across oil and gas slowed in the last quarter, as companies and investors waited for things to settle. We believe that the major wave of midstream corporate simplification is now complete, which will result in midstream transaction value and volume cooling off in 2019 as the market goes back to classical deal drivers: connecting producers and products to markets. Private equity is likely to continue to invest as it seeks stable, ratable returns and provides a source of much-needed capital for the major infrastructure investment required.

Overall, we continue to believe there will be focused investment in crude oil gathering and field gas processing in the better-positioned North American

shale basins, such as the Permian, Anadarko and Eagle Ford. In Canada, we anticipate the 2019 Federal and Alberta Provincial elections will provide a challenging backdrop to the industry, as companies, governments and indigenous stakeholders all work to continue to resolve the country's ongoing oil and gas egress crisis. International players may continue to re-enter the market through acquisitions, although political tensions with China may cause some delay. Capital-starved E&P companies may seek to divest their midstream infrastructure as they refocus on upstream.

As evidenced by the Shell LNG Canada FID, the continued preference toward cleaner energy will drive interest in natural gas and LNG. In the longer term, we see more nations pressing for fuel oil power generation conversion to natural gas, which will drive LNG development infrastructure.



Downstream



US\$82.5b
Total downstream
deal value increases
11% year over year

172
Total downstream
deal volume up 11%

19%
Downstream
% of total deal
value down 2%

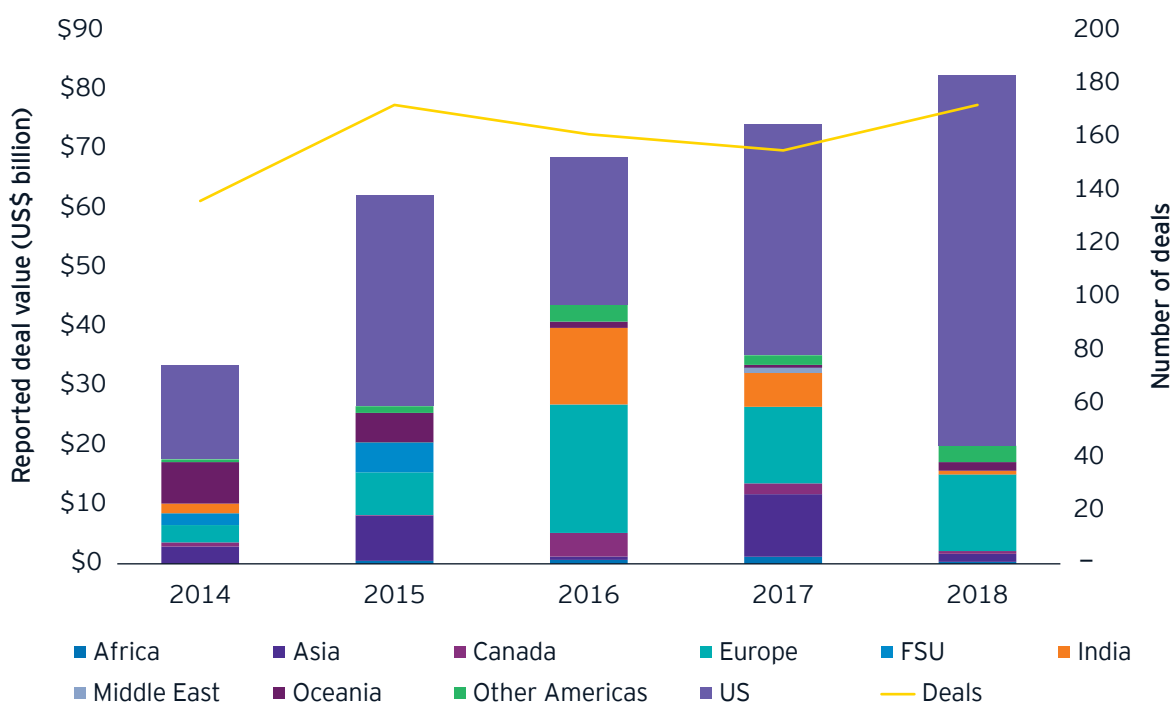
Downstream activity in 2018 was at historically high levels. Deal values reached US\$82.5b (up 11% from 2017), with deal volume of 172 transactions (also up 11% from 2017). Consistent with past years, North America and Europe continue to be the most active regions, representing 92% of deal values and 73% of deal volume. The majority of deals were in the range of US\$100m to US\$1b. Marathon Petroleum's acquisition of Andeavor was the only deal to exceed US\$1b.

In the 2017 edition of this publication, we noted that companies and investors have a renewed focus on integration, due in part to lower and more volatile oil prices and companies' desire to strengthen cash flow and returns across the

commodity cycle. This trend continued in 2018, as companies looked to adjust their portfolios and better integrate across the value chain from feedstock supply to petrochemicals. We expect this trend to continue in 2019 and beyond, as changes to supply and demand continue.

A key development that should drive transaction activity during 2019 is the upcoming International Maritime Organization (IMO) 2020 regulation, which limits sulfur in marine fuels to 0.5%. This is likely to shift demand from fuel oil toward middle distillates and may lead to additional investment in refining and tank modifications. It may also have a dramatic impact on LNG demand if a portion of shipping companies convert their fleets to LNG power.

Downstream oil and gas transactions



North America

The level of transaction activity in North America was robust, with deal values of US\$63b (up 55% from 2017) and transaction volume of 85 (up 49% from 2017).

Marathon Petroleum's acquisition of Andeavor for \$35.6b was the leading transaction both in the US and globally, positioning the company to capitalize on shifting market trends in crude supply and demand. The merger will link Andeavor's gathering and transportation infrastructure in West Texas to Marathon's US Gulf Coast refinery to provide access to low-cost crude oil supply. It will also result in a strong refining and logistics position on both the US West Coast and Gulf Coast, allowing it to take advantage of growing demand in Mexico. In addition, the refinery portfolio will have the highest capacity in North America to make low-sulfur fuels, positioning it to meet IMO 2020 emission standard changes.

In retail, there is a continued focus on convenience retail assets, as investors target attractive margins and returns. The largest transactions were made by UK-based EG Group, which acquired Kroger's convenience store business for US\$2.15b and TA's US convenience store business for US\$331m.

As in past years, MLP activity was a major driver of deal activity both at the corporate level and within pipelines and terminals/storage, as MLPs continue to drop down assets and respond to changing equity market dynamics. Representative transactions include Andeavor's drop-down of US\$1.6b of storage and pipeline assets and Valero Energy Corporation's US\$1.2b acquisition of the remaining 32.5% stake in Valero Energy Partners. We anticipate continued North American downstream deal activity in 2019 with (at the time of writing) multiple over-US\$1 billion divestment processes announced.

EMEIA

Within EMEIA, the focus on integration was clearly evident during 2018. Despite improvement in oil prices during the year, there did not appear to be any discussions around the spin-off of downstream assets. The primary focus was on competitive cost of supply (either via advantaged feedstock or access to end markets) and differentiated product offerings.

Despite improved profitability of Western European refineries due to lower crude prices, M&A appetite for refining assets remains limited due to pressures from refineries in the Middle East and India, and the inherent volatility in cracks and crude spreads. There has been some discussion about the potential

to integrate into petrochemicals, but it is unclear whether the returns would be sufficient over the long term to justify material capital investments in the future.

In retail, major oil companies continue to focus investments in key developing regions, such as India, to take advantage of fuel and non-fuel margins. We expect the stronger independents, trading houses and convenience retail specialists to continue to acquire and consolidate the non-core retail assets of the major oil companies within the more-developed regions, with the refiner typically providing long-term fuel supply.

Notable transactions in refining and retail were PKN Orlen's acquisition of a 53% interest in Grupa Lotos; MFG's acquisition of MRH for US\$1.7b; Petkim's acquisition of an 18% interest in STAR Turkey for US\$720m; and ExxonMobil's divestment of its Augusta refinery and three terminals in Italy to Sonatrach.

Transactions involving terminal and logistics assets remained strong during 2018. Storage terminal operators continued to rebalance their portfolios due to overcapacity and general market backwardation. Furthermore, several investments by infrastructure funds reached the end of fund life during the year. Key transactions during 2018 included the divestments of Buckeye Partners' 50% stake in VTTI for US\$975m and NuStar Energy's European bulk liquid storage business for US\$270m.

In natural gas infrastructure, there was continued interest from infrastructure and pension funds, given the growing demand for natural gas and LNG in Europe. The largest transaction in EMEA in 2018 was the divestment of Repsol's non-core 20% stake in Gas Natural Fenosa to CVC for US\$4.7b.







US\$21b
Total OFS deal value
decreases 11% year
over year

218
Total OFS deal
volume down 7%

5%
OFS % of total deal
value down 2%

Oilfield services

Despite the volatility of 2018, the OFS sector leaves the year in a similar position to the one it was in at the start of it. What has stayed the same, what is changing and what has changed? At the top of the list of things that have stayed broadly the same is the market. Despite price gyrations, the operators have continued to pursue the strategies they adopted in response to the oil price decrease, including:

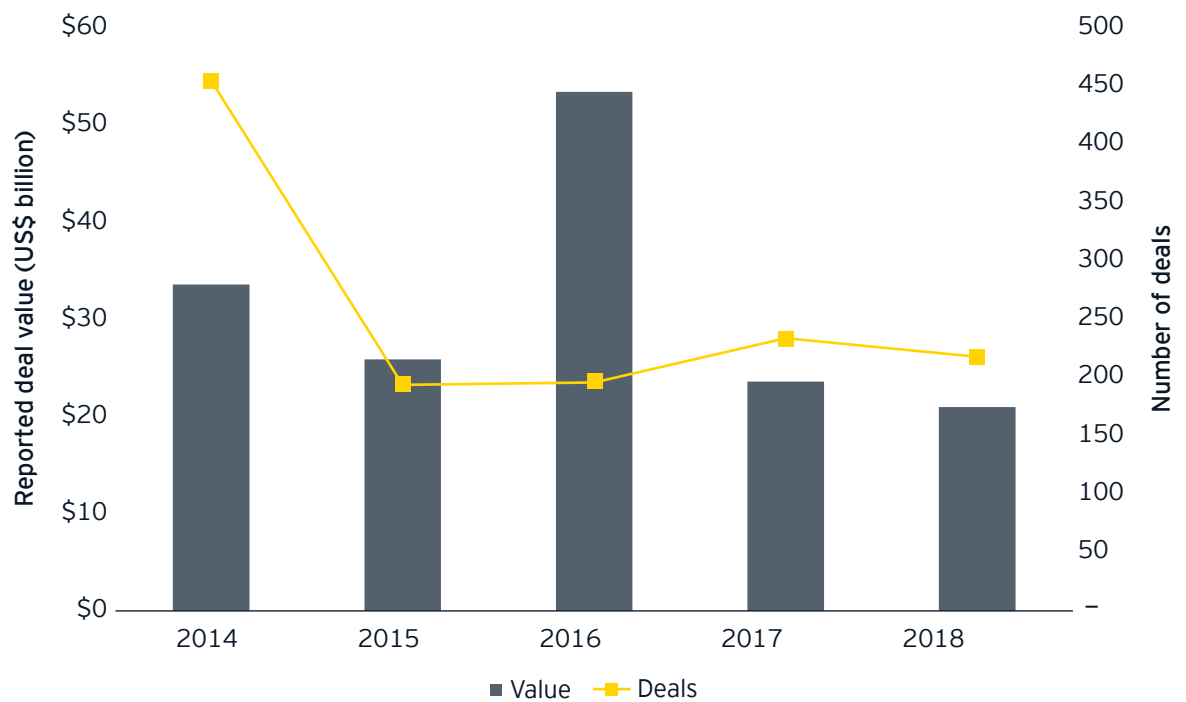
- ▶ Capital discipline – with capex budgets held flat or having only marginal growth
- ▶ Reluctance to allocate capital to exploration and long-lead-time projects
- ▶ Focus on the accessible cost-advantaged basins
- ▶ Relentless focus on cost control and production performance

What is changing or has changed during the year? These changes had an impact on the OFS sector during 2018:

- ▶ Oil and gas price outlook. It is hard to say how a slowing global economy and oil demand will balance out with the very public signal from OPEC producers that they are prepared to take the necessary actions to balance the market. Operators appear to be working on the view that current market levels will persist and making budget decisions accordingly.
- ▶ Accelerating rollout of new technology and digital technology. Whether it is subsurface or back office, new technology has been seized by the operators as a means for them to cut costs



Oilfield services transactions



and improve performance, with pilot programs beginning to move to full-scale rollout. However, it is likely to come with the requirement that the OFS sector invest to align with different operator systems. Industry-wide formats do not look like they are gaining traction at the moment.

- ▶ Tightening US monetary conditions. Given the majority of oil and gas projects are financed by debt (in particular, US dollar-denominated debt), tighter monetary conditions do have an impact, especially for those dependent on expensive and riskier debt finance.
- ▶ Transition of operator ownership in mature basins. Another factor that has amplified the impact of changing debt market conditions in the mature basins has been the continued migration of asset ownership from majors with access to cheap balance sheet financing to independents and private equity-backed companies with a great reliance on external financing.

Together, these factors leave the OFS sector in a challenging place. While the threat of insolvency has receded for most, the challenge of delivering an acceptable return to investors remains. In particular, the sector as a whole struggles to articulate how it will deliver the kind of earnings growth that could support a higher valuation, as can be seen from the decline in the share price of its publicly listed components

during the year, despite improved financial performance. OFS companies' responses at the moment comprise a combination of the following:

- ▶ Focus on technologies or activities in which they have the kind of competitive advantage that supports activity and acceptable margins
- ▶ Extend the scope of integrated service offerings that can attract premium pricing, if scale permits
- ▶ Where a definitive technological or operative advantage cannot be sustained, build scale to enable a lower cost base that can allow sustainable margins; where possible, use digital technologies to control costs, too
- ▶ Engage with the operator's technology agendas – initially as a defensive measure to ensure market access, but also to explore areas where a differentiator can be established

The implications for the M&A agenda continue to be:

- ▶ Consolidation by activity or area to drive competitive advantage and costs
- ▶ Bolting on entities with adjacent viable technologies
- ▶ Exit of markets or areas where activities are sub-scale or undifferentiated

2018 oilfield services transaction activity recap

2018 has been largely similar to 2017 in terms of transaction activity.

In 2018, we saw 218 deals announced in the oilfield services sector globally, which is down by 7% from 234 in 2017 and approximately half the number of deals pre-crisis.

Deal value (US\$21b) was down by 11% from US\$24b in 2017. This decrease was due to the limited number of large transactions above US\$1b (only 3 in 2018) and the continued absence of transformational transactions (above US\$10b).

	2013	2014	2015	2016	2017	2018
Value (\$b)	23.1	33.6	25.9	53.4	23.6	21.0
Number of deals	449	455	194	196	234	218
Average deal value (\$m)	52	74	134	273	101	96

Looking at the number of deals, 2013 and 2014 were strong years for M&A activity, followed by lows of 2015 and 2016, with 2017 and 2018 showing a slight recovery, which we expect to grow further in 2019 and 2020.

Fleet combinations

Given cost efficiencies are still high on the agenda, a large volume of M&A activity has been driven by the need to achieve economies of scale through the creation of more dominant companies with greater scale and a broader portfolio of assets.

2018 therefore saw the combination of complementary asset-heavy companies in various sectors, such as:

- ▶ Offshore drilling
 - ▶ Ensco's acquisition of Rowan for US\$3.7b in October
 - ▶ Transocean's acquisition of Ocean Rig for US\$2.7b in September
 - ▶ Borr Drilling's acquisition of Paragon Offshore for US\$254m in February
- ▶ Onshore drilling
 - ▶ Ensign Energy's acquisition of Trinidad Drilling for US\$720m in August
 - ▶ ADES' acquisition of Weatherford's land drilling business in Kuwait, Saudi Arabia and Algeria for US\$288m in July
 - ▶ KCA Deutag's acquisition of Dalma Energy for US\$320m in March

▶ Offshore seismic

- ▶ Shearwater's acquisition of Schlumberger's marine seismic acquisition business for US\$600m, plus a 15% post-closing equity interest in Shearwater in August

▶ Offshore support vessel

- ▶ Tidewater's merger with GulfMark, creating a US\$1.25b equity value company in July

These acquisitions follow the same trend as in 2017, which featured Transocean's acquisition of Songa Offshore for US\$3.4b; Ensco's acquisition of Atwood (US\$1.6b); and, in the offshore support vessel side, the merger of Norway's largest offshore support vessel operators (Solstad Offshore, Farstad Shipping, Deep Sea Supply) following the merger of Rem Offshore and Solstad Offshore in 2016.

Given the continued oversupply of some of these assets, we expect this trend to continue in 2019 with well-capitalized companies and investors engaging in more consolidation activity and/or acquiring assets out of administration.

Continued focus on technology and digital data integration

The oil and gas industry is one of the world's most advanced users of technologies. However, to date, these technologies have been primarily focused on improving time to first oil and improving the effectiveness of hydrocarbon extraction, rather than operational performance and end-to-end integration.

The industry also collects massive volumes of data. This data is highly specialized and sits within functional silos, limiting cross-functional interaction and understanding. Significant opportunities exist to enhance data transparency and enterprise understanding to drive better decision-making and operating performance.

The past few years have had a number of transactions driven by the acquisition of technology and the integration of digital data, and we expect these acquisitions to continue to be on the wish list of oilfield services companies looking to differentiate in 2019. While mostly small-sized transactions, these acquisitions could form a strong basis for operational outperformance and contribute to an increase in market share for the players involved.

Specific examples of technology acquisitions include:

- ▶ Nine Energy Service's acquisition of FracTechnology, a Norwegian company that delivers new solutions for unconventional oil and gas wells, in November 2018, following its acquisition of Magnum Oil Tools International, a leading downhole technology provider, for US\$493m, in October 2018
- ▶ Magseis' acquisition of the seismic technologies business of Fairfield Geotechnologies, consisting of data acquisition, nodal and system sale, and rental activities, for US\$233m, in October 2018
- ▶ Zesi-Energisight's merger with Palantir Solutions to become Aucerna, which continues their E&P planning suite consolidation

The majority of oilfield services companies are working to streamline their offerings with data-enhanced processes, increasing flows, shortening process times and ultimately increasing efficiencies. This trend will continue in the years to come.

Increased activity by financial investors

As in 2017, several special-purpose acquisition companies (SPACs) and financial sponsors deployed funds to the energy sector in 2018. Notable transactions included:

- ▶ Blackstone Energy Partners' acquisition of Ultrerra Drilling Technologies from American Securities for US\$700m in October. Ultrerra is the largest pure-play independent supplier of polycrystalline diamond compact (PDC) drill bits to the oil and gas industry, with a leading position in many of the most active US onshore oil and gas basins, including the Permian and Eagle Ford
- ▶ Carlyle's acquisition of EnerMech in October. EnerMech is an international services company providing mechanical, electrical and instrumentation services to the global energy and infrastructure industries, which maximize efficiencies across multiple phases of the asset life cycle, from pre-commissioning, commissioning, maintenance and operations support, to late-life support
- ▶ Carlyle's and CSL Capital Management's acquisition of Weatherford's laboratory services business in October for US\$205m



The growth of SPACs targeting the energy sector and the oilfield services sector, in particular, highlights the attractiveness of such structures for target companies and investors alike.

For target companies, SPACs can be an attractive business combination partner due to their public listing, strong financial position, highly experienced management teams and backing from reputable financial sponsors.

For investors, the attraction is that they can potentially profit from advantageous business transactions in the future without exposing much of their capital until a transaction is proposed. In today's oil market environment, this could be very attractive.

The other interesting point is that, in the last few years, SPACs have been used by some private equity investors as a new way to raise and deploy their capital. SPACs are attractive for private equity sponsors because they can provide:

- ▶ Access to public markets, which can be very valuable depending on the life cycles of funds that a sponsor is managing at the time it is considering a SPAC
- ▶ The ability to invest in an industry or type of investment that a sponsor would otherwise be prohibited from or restricted by its fund documents
- ▶ The ability to achieve private equity-type returns through issuance of sponsor shares and warrants
- ▶ Increased attractiveness of sponsors as buyers to targets (e.g., those looking to IPO)
- ▶ Increased flexibility, especially for sponsors juggling multiple types of investments

With oil prices stabilizing and the market starting to recover, we should expect growing activity from SPACs and financial investors.

Distress

Financial stress was a key driver of M&A activity in 2017, specifically on the highly fragmented end of the market focused on serving non-complex oil and gas development

projects or providing relatively commoditized products and services. In the offshore support vessel sector, for instance, consolidation has been a means of survival for companies with large debt burdens in a significantly oversupplied market.

This trend was less prevalent in 2018, especially at the top end of the market, but still existed and is expected to continue in 2019. Notable examples of transactions driven by restructuring or the need to reduce leverage were:

- ▶ Weatherford's continued divestment program, including the sale of part of its land drilling business to ADES for US\$288m in July and its laboratory services business to Carlyle and CSL Capital Management in October for US\$205m
- ▶ The sale by Italian engineering company Trevi Group of its drilling businesses Drillmec and Petreven to Indian Megha Engineering & Infrastructures (MEIL group) in December for US\$159m

Strategic partnerships

Beyond traditional M&A activity, in October 2018, Abu Dhabi National Oil Company (ADNOC) and Baker Hughes, a GE company (BHGE), signed a strategic partnership agreement that will enable and support the growth and development of ADNOC's subsidiary, ADNOC Drilling, into a fully integrated drilling and well construction provider. Under the terms of this agreement, BHGE will acquire a 5% stake in ADNOC Drilling for US\$550m and will be the sole provider of certain proprietary leading-edge and differentiated equipment and technologies related to the integrated drilling offering, supporting ADNOC Drilling's growth. Customers are expected to benefit from this partnership, with more competitive well completion times, greater drilling efficiencies and better well economics.

With continuing pressure to increase efficiencies and project economics and offer more integrated services, it is expected that more partnerships of this type will be considered in the future.



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