



New horizons: Strategic choices for upstream oil and gas companies in a volatile oil price environment

Picking peer groups: The upstream oil and gas corporate landscape

Following the 2016 nadir in oil prices, the industry outlook improved over the following two years thanks to rising prices, with Brent reaching \$85 per barrel in October 2018, the first time since 2014.

However, volatility has more recently surged and global oil prices declined sharply to under \$60.¹ Despite this volatility, it appears that we might be past the period of lower for longer, setting the stage for a new period of growth for the industry. Companies seem cautiously optimistic based on Deloitte's recent [Oil, gas, and chemicals industry executive survey](#), and US upstream oil and gas capital spend is up in 2018.² Moreover, the downturn led

to an increase in industry bankruptcies and low spend on field development, creating an upside price risk in the medium to long term.³ Perhaps then, this is a good point to take stock and assess strategic options for upstream oil and gas companies as they focus on growing production to meet future demand while sustainably generating value.

To that end, we have identified six main peer groups: Resource-rich national oil companies (NOCs), resource-limited NOCs, the majors and large integrated international oil companies (IOCs), internationally focused independents, US-focused independents, and diversified independents. Each peer group includes a diverse array of companies that share a number of key characteristics that in part should drive near-term strategy.



Six key groups have different comparative advantages and face different competitive landscapes

Peer group					
Resource-rich NOCs	Resource-limited NOCs	Supermajors/IOCs	International independents	US independents	Diversified independents
Examples					
Pemex, Petronas	EcoPetrol, ONGC, PTTEP	BP, Chevron, Shell	Cairn, Kosmos, Tullow	Chesapeake, Pioneer, Range	Anadarko, ConocoPhillips, Hess
Strengths					
Access to large, low-cost oil and gas resources and possible monopoly over domestic markets	Typically have a monopoly over domestic market and an expanding international portfolio	Global and integrated business model taps all parts of the value chain, and provides natural hedge to commodity price cycles	High-impact exploration strategy with high risks and rewards	Access to low-cost US shale and extensive domestic infrastructure	Diverse upstream portfolio helps navigate the price cycle, allowing for investment flexibility
Weaknesses					
Cost challenges stemming from operational issues and tax regimes and political requirements	Lack of large domestic resource base can make increasing production difficult	Large scale and scope of operations can create inefficiencies and prevent organizations moving quickly in a dynamic business environment	Limited onstream production means companies are highly exposed to the commodity price cycle	Focus on domestic resources and resource themes (e.g., shale) can concentrate business risks	The lack of focus of other independents and scale of NOCs can make portfolio balancing more challenging
Opportunities					
Increasing investment into downstream, value-added projects including LNG and petrochemicals	Expanding LNG import and natural gas distribution business; inorganic growth through acquisitions	Broad access and deep pockets mean large integrated oil companies are well positioned to increase exploration, production, and portfolio diversification as prices rise	High-impact discoveries in challenging locations could provide much of the new resources needed to meet growing production forecasts	Direct access to world-class, low-cost shale resources that have high returns on investment and have proven resilient in the downturn	Scalable portfolio with exposure to shale, deepwater, and conventional projects
Threats					
Declining domestic resource base, rapid spread of energy technologies including advanced completions (e.g., shale fracturing) and renewables	Due to limited scale, these companies often face challenges from volatile prices and consumer fuel subsidies that can squeeze cash flows	Larger companies were late to push leaner, small-scale conventional projects and to enter shale, which could mean they face a steeper learning curve to building-out a portfolio of sustainable, lower-cost projects	Lack of midstream and downstream operations, limited exploration success, and high offshore costs could threaten the business model	Asymmetric risks (e.g., midstream bottlenecks and disposal well shut-ins), sweet spot depletion, and child-well interference could lead to a shortfall in production and cash flows	Portfolio could face outsized commodity price risk due to lack of upstream scale and the lack of natural hedge of integrated midstream and downstream assets

Source: Deloitte analysis

Note: Resource-limited refers to limited domestic resource access, not global reserves or production levels.

Picking your poison: Choices facing oil and gas operators today

In 2018, we saw a large number of transactions aimed at refocusing oil and gas companies' portfolios, and [we expect this trend to continue as commodity prices evolve](#).⁴ Operators should analyze their portfolio based on a number of factors, and through the lens of their existing competitive position. What are some of those factors? We identified four that stand out as important to consider when building a strategy for companies in any of the peer groups. These factors include **scale**, **scope**, **cost** and **running room**.

Each peer group could differ significantly across these factors. For example, a major might produce several million barrels of oil equivalent per day from shale, conventional onshore, offshore, and deepwater fields as well as from oil sands, while also operating midstream, downstream, and trading assets that diversify its overall portfolio. However, a small international independent would likely be the opposite, with a handful of high-impact upstream exploration investments in a single resource theme (with commensurately high risk), and limited if any exposure in midstream or downstream operations. Considering these differences, how can each peer group make the right strategic choices to navigate the markets in the current environment?

Scale

How much oil and gas is the company producing? From how many fields and regions does the company produce?

Scope

How many different types of projects (fields, pipelines, processing plants) and resource themes (e.g., shale, deepwater, oil sands) does the company operate?

Cost

How do capital and operating costs stack up? Are projects short or long cycle? Do they require continuous or upfront investment?

Running room

Can the company increase production/throughput with small or large incremental costs? What barriers does it face to expand capacity?

Resource-rich NOCs



These operators make up in scale what they sometimes lack in scope, often producing large volumes from conventional onshore or shallowwater projects. For example, Saudi Arabia produces over 10 million b/d of crude and condensate, and other large members of the Organization of the Petroleum Exporting Countries (OPEC) like Iraq produce over 4.4 million barrels a day.⁵ Moreover, as these operators typically have a near-monopoly over resource development in their countries, they likely will have significant running room for years, if not decades, at current production rates. The challenge for many resource-rich NOCs is managing costs, not only due to operational issues, but also because of political issues including fuel subsidies and fiscal regimes.

Many NOCs absorb the cost of subsidized fuel prices in their domestic downstream operations, and they face high taxes as they provide significant income to their governments. In some cases, these countries face deficit challenges even at \$80 oil prices,⁶ despite the fact that well-level break-evens can be less than ten dollars.⁷ That can put operators in a difficult position of balancing investment in the business and other domestic priorities. There has been some positive movement on fiscal issues, with many countries using the drop in prices as an opportune time to reduce fuel subsidies. However, as oil prices rise, so have the subsidies.⁸ That will likely cut into cash flow that NOCs could otherwise spend on growing future production and reserves.

If subsidies are reduced or removed, and tax burdens moderated, resource-rich NOCs have several advantages that they can leverage as global oil and gas prices rise.

Firstly, there are the aforementioned benefits of direct access to low-cost production and reserves from already-discovered, conventional fields. Investments in new drilling campaigns and enhanced oil recovery programs could increase production with relatively short lead times and lower costs than many competitors.

Secondly, while vertically integrating upstream, midstream, and downstream assets is not new to these companies, there are further potential advantages to moving further down the value-chain to higher value-added products like petrochemicals and plastics. The RAPID project, a joint venture that includes a refinery and petrochemical integrated development to produce gasoline and diesel in Malaysia,⁹ is one example of this strategy.

Lastly, many resource-rich NOCs are located in or near rapidly growing countries, including the BRICs (Brazil, Russia, India, and China). Therefore, these companies seem well positioned to expand exports of oil, natural gas, refined products, and chemicals. Many resource-rich NOCs have pursued one or more of these strategies; the key will likely be overcoming geopolitical obstacles and other above-ground risk. With any luck, rising commodity prices should make that challenge more tractable.

NOCs will likely face challenges narrowing their focus, as they are clearly well positioned to play in a number of geographical markets across the entire oil and gas value chain. While there are opportunities to expand organically in their domestic markets, mergers and acquisitions (M&A) may prove appealing depending on the size and rate of their production growth aspirations. The key will be to pursue acquisitions that do not negatively impact investment in their existing low-cost fields, while generating synergies with larger business. Technology should also play a role in their investments. For example, digitalization and advanced completions have transformed US shale as the availability of low-cost sensors and advanced analytics (e.g., machine learning) has shifted the conversation around field optimization. NOCs have opportunities to partner with experienced international operators in unconventional and deepwater developments to provide exposure to technologies and operational strategies that could boost cash flow and extend the productive life of their domestic developments.

Resource-limited NOCs



Lacking the direct access to sizeable resources in their home countries, these operators typically have focused not just on domestic projects, but also invested internationally. They tend to face some similar challenges to resource-rich NOCs, including the difficulty in meeting both corporate and government priorities. However, beyond that, their pursuit of barrels internationally, including investing in high-cost projects in deepwater and oil sands, has often strained their portfolio in recent years as prices declined. Moreover, the near-record-high prices for US shale acreage and their limited experience diminishes the opportunity to grow production in basins that have proven fruitful for many US independents.¹⁰ These operators may lack the ability to sustainably grow without rethinking their business and their portfolios.

Priorities for resource-limited NOCs will likely be driven primarily by their size. A small, state-owned producer with limited regional exposure should not dramatically increase investment in expensive, overseas developments. Larger operators, however, could be in a better position to invest in different resource themes and through the value chains. In other words, these NOCs should focus on making their portfolios fit for purpose, with an eye to managing scope and costs, as there will likely be little room to increase scale and running room in the short term. Managing costs could be particularly important, as relative financial positioning could drive conversations around focusing on growth versus margins, and whether to pursue greenfield exploration opportunities. With that in mind, these companies can consider these three steps to better position themselves for the future.

Firstly, they should assess core priorities and assets. Unlike private companies, they may have mandates to provide fuel, infrastructure, or other benefits to their home country, and unlike resource-rich NOCs, this may prove more of a financial challenge. Ultimately, deciding where to play now might shape their medium- to long-term production and cash flow outlook.

Secondly, these companies should consider divestment of potentially high-cost and/or noncore assets. While they may operate an integrated upstream, midstream, and downstream business domestically, simplifying investment internationally could make sense. Time and focus are finite resources, so it may not be possible to excel in all their existing businesses.

Lastly, they should rethink the synergies between domestic needs and overseas spend. For example, a number of countries including India and Pakistan face rising demand for natural gas.¹¹ With ample need for capital in the LNG markets, some resource-limited NOCs may find themselves in a position to expand internationally while simultaneously meeting a growing domestic need. Those kinds of strategic and operational synergies could drive both growth and improved margins.



Supermajors



The supermajors and other large integrated international oil and gas companies span the entire value chain, including supply and trading as well as petrochemicals, and work across the globe with operations in major sources of supply (e.g., the Middle East), major demand centers (e.g., United States), and pretty much everywhere else as well (e.g., Guyana). Historically their business model has benefited from those two axes of diversification, as midstream and downstream operations are typically more robust during a commodity price downturn, and as different markets expand and contract at different rates. True, the financial crisis and the later substantial, rapid decline in oil prices challenged cash flows, but based on 2018 annual results, the business remains robust.¹²

Despite many of these operators producing millions of barrels of oil equivalent per day, the challenge for the majors and international oil companies typically stems not from scale, but scope. To sustain ample running room and to grow reserves, the majors and other large integrated IOCs often maintain a wide portfolio of assets in a number of business segments. That sometimes involves sitting on large tracts of exploration acreage in multiple countries for decades or spending several years assessing the viability of major capital projects. Often it can also involve holding onto legacy assets well past their economic value to the company. Admittedly, there are a number of examples where these inertia-driven decisions have benefited the IOCs, but perhaps that is due more to luck than strategy.

To develop and maintain coherent short-, medium-, and long-term strategies, the majors and IOCs should pick their battles. That is not the same thing as simplifying the business—an important distinction, as many benefits of integration go hand in hand with operational complexity. The key is to pick where to play, and then win in any price environment. That could require portfolio

pruning. To that end, the first step should be to analyze the various businesses separately, be it in upstream, midstream, downstream, petrochemicals, or cross-sector, and identify if they are a core, growth, legacy, or peripheral opportunity. After that, there should be opportunity to streamline the business by comparing assets' actual characteristics versus longer-term strategic priorities such as improving margins, growing production and revenue, or expanding investment in a resource theme (e.g., shale).

Core assets, ones that provide little or modest growth but generate significant ongoing cash flow, are key to sustaining the business. Legacy assets, those with limited prospects for growth and a declining share of the cash flow, should likely be valued for potential divestiture. The biggest challenge will likely be separating growth and peripheral opportunities. Depending on time horizon, some could argue that many operations peripheral to the business today will become tomorrow's growth opportunities. For example, some majors have just expanded investment into other parts of the energy value chain including power demand management, renewable electricity, and electric vehicles.¹³ In that case, setting clear criteria for opportunity size, expected project timelines, and reasonable rate of returns could be helpful in separating the wheat from the chaff.

The idea is to move down and to the left on the cost curve, removing unnecessary complications while remaining sufficiently complex to successfully operate a truly integrated oil, gas, and often chemicals business.



International independents

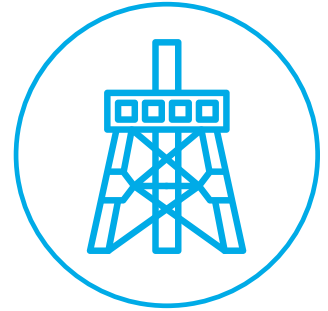
You know what an international independent is when you see one, even if the peer group overall is hard to categorize by strict metrics. These operators usually focus on the upstream, occasionally investing in midstream or downstream assets only to support offtake and exports of produced oil and gas. Their focus is on growth through high-impact exploration, and may only produce from a handful of projects. Some publicly traded examples include Tullow, Cairn, and Kosmos. These operators can find it difficult to build scale and running room because of their historically narrow scope and sometimes risk-on-investment thesis. Additionally, as many operate in frontier basins, cost control can be difficult. There appear to be two clear options for growth: Threading the needle by balancing the traditional exploration focus with sustainable cash flow growth or expanding scope via inorganic growth.

The high geological risk found in frontier basins poses a challenge for that strategy. Unlike large IOCs who can put projects on hold as commodity prices decline and cash dries up during a downturn, companies that generate limited revenue and have large planned capex outlays very well may not survive. For example, Cobalt, a Gulf of Mexico– and West Africa–focused explorer, experienced this firsthand, filing for bankruptcy in 2017.¹⁴ Others have fared better, usually buoyed by either a larger capital cushion or higher production volumes. As prices rise, the more traditional strategy of farming-down interest post-discovery will likely be viable, but it did not weather the downturn well. Another route is to farm-down earlier in the cycle to diffuse risk (and reward) among partners. This would allow international independents to home in on one aspect of the business (e.g., geology and geophysics), while at the same time creating a long-term relationship with a company better positioned to develop and operate the discoveries. Arguably, BP and Kosmos pursued this route in Mauritania and Senegal.¹⁵

The inorganic growth route can provide diversification and mitigate both above- and below-ground risks, but M&A can negatively affect operations via poor integration or mismatched strategic visions. The key is to align strategies first, and then identify opportunities for operational synergies. One example of the diversification-through-acquisition strategy is Kosmos's recent purchase of Deep Gulf Energy, a private-equity-backed upstream oil company that focused on more mature plays in the deepwater US Gulf of Mexico.¹⁶ This transaction provides assets with ongoing, and compared to US shale, relatively long-term, cash flows with modest incremental investment of capital. That helps moderate the high risk associated with drilling frontier basin wildcats. Independents that do pursue M&A should ensure their strategy evolves along with their portfolio. In many ways, large-scale transactions of other types of upstream assets will likely also change the company's investment thesis. It will also be important to consider how its competitive advantage shifts, since the management team would now need to oversee a much larger producing footprint.



US independents



While international independents focus on exploration, US-focused ones typically devote most of their capital to scaling up shale. Their scope is typically limited, and running room is defined by remaining drilling locations estimated from net acreage holdings. Some, like Marathon Oil, produce from a number of plays; others, like Pioneer, focus on just one, the Permian. Lacking the balance of other peer groups, these companies mainly focus on growth thanks to the relatively low-cost room afforded them by the US shale revolution. The lack of diversification presents three closely linked challenges, high cash-intensity operations, asymmetric operational risks, and stark exposure to commodity price cycles. Each issue requires a different solution.

Shale lacks the characteristic ramp-up, plateau, and decline of revenue and costs seen in other conventional oil and gas projects. If a company cuts spending today, next year's production declines significantly—over 70 percent for some shale wells.¹⁷ That sharp decline compounds revenue problems if oil and natural gas prices drop. Often, US independents rely on hedging to offset risks.¹⁸ That works well during a downswing, but can prove expensive if prices remain buoyant. One estimate pegs 2018 US hedging costs at \$5 billion.¹⁹ Expanding scope by investing in longer-lived assets should be considered as a complement to a company's existing hedging strategy. For example, gathering, pipelines, and storage infrastructure can provide ongoing cash flow even in a lower commodity price environment. Considering the wide price differentials seen in the Permian, they can also generate significant revenue even in a booming oil and gas market, contributing to revenue growth.²⁰

Expanding scope can also mitigate asymmetric operational risks. In this context, asymmetric risks are those that have little upside but significant downsides, and are often hard to prevent. For example, in the Permian, service costs are rising, price differentials are widening, and sourcing materials has become increasingly difficult.²¹ Perhaps more dramatically, the tremors in Oklahoma led to the state shutting-in produced water disposal wells. Shale wells often produce significant water that is usually disposed via injection.²² Reducing injection volumes in the state led to a dramatic rise in water-related costs for some operators.²³ Even if an independent chooses to remain shale-focused as part of their long-term strategy, investing in water recycling facilities, deploying novel drilling and completions technologies, and producing from multiple basins can provide optionality in case of both current and unforeseen future operational challenges.

Ultimately, the US-focused independents model resists diversification, as it is single-resource theme driven. While expanding scope may limit some risks, it can also reduce opportunity for outsized gains. For most, it may be best to tinker around the edges, and recognize that commodity prices remain volatile, and that even in a tightening crude market, price swings could hit their bottom line more than companies in other peer groups.



Diversified independents

Diversified independents often focus on multiple regions and resource themes, with some midstream or downstream exposure. In some cases, such as ConocoPhillips and Hess, the company split off its refining and retailing arm. Many diversified independents have heavy US investment with companies like Anadarko operating in US shale, the Gulf of Mexico, as well as internationally with its upstream operations in Algeria and West Africa, and its LNG project in Mozambique. Apache also seems to fit the model well with operations split between Egypt, the United Kingdom, and the United States. No matter the specifics, diversified independents have a goldilocks approach, balancing their scope and scale along with costs and running room.

Achieving that balance can be challenging because most independents lack the scale of the majors and so allocating capital across a number of resource themes and regions can be difficult, as there simply is less capital to allocate. For example, a large deepwater project cost could exceed ten billion dollars. Similarly, an integrated upstream to LNG project could take tens of billions of dollars and a decade to get from exploration to first gas. Beyond that, both of these types of projects require a different set of competencies than each other and operationally differ significantly from US onshore shale, a growing part of diversified independents' portfolios. For a company with annual capex spend of a few billion dollars, managing that portfolio can be an uphill battle.

While it is key for all peer groups to pick their battles, it should be a higher priority for diversified independents. There are three concrete steps they should consider.

Firstly, these operators should focus on narrowing scope and increasing scale. Operating several fields and integrating their upstream and midstream assets in one region would likely be preferable to spreading their operations group more thinly. Reducing total operating costs can be difficult, particularly for older facilities and infrastructure in challenging environments. Boosting throughput is one way to reduce unit costs that can improve both the top and bottom lines simultaneously.

Secondly, they should manage not just physical or financial scope, but also temporal scope. Refineries, pipelines, deepwater upstream, and shale take different amounts of time to develop from first concept to FID to startup; and they all have different operable lives. A mid-size company needs to balance its cash and project cycle for the short-, medium-, and long-term. Letting their portfolio drift to one side or another through a rapid investment in a single resource like shale can risk the company losing balance and exposing itself to risk that its diversification is supposed to mitigate.

Divesting noncore assets can help, as maintaining a long tail of smaller projects could prove distracting. Creating synergies elsewhere in a portfolio can work as well. For example, investing in LNG can kill two birds with one stone by extending the portfolio's production life while providing an outlet for produced natural gas. Similarly, they should plan to leverage infrastructure in mature producing areas like the Alaska North Slope, Gulf of Mexico, or North Sea, as that could reduce project lead times and boost commerciality of any discoveries. Moreover, older assets can generate opportunities for enhanced oil recovery through the deployment of advanced analytics combined with marginal increases in capital spend.²⁴ Leveraging physical and digital assets holistically could generate more value than using each independently.

By rebalancing and streamlining their business, diversified independents will likely be better positioned to take advantage of the current upswing in crude prices and weather the next downturn. Long-term assets can provide cash flow through leaner periods, while maintaining a hopper of exploration leads and short-term projects allows for sustainable growth. The trick is to keep the investment balanced as the portfolio expands.

Picking and choosing your strategy: Building a better portfolio for tomorrow's oil price

Whether you are running a large integrated oil and gas company whose operations span the globe or are proving up a few thousand acres in the Eagle Ford, making strategic choices is often imperative to successfully growing the business. Those choices can have a direct impact on a company's portfolio by changing scale, scope, costs, or running room. Ex ante, lower costs and longer running room should be better, but there can be too much of a good thing. Portfolio management is about making choices, some simple, but many quite complex. Companies need to decide where to play, how to win, and ultimately what their long-term vision is to grow sustainably while generating acceptable margins.

Looking to the future, it is hard to say whether oil prices will be closer to \$30 or \$130 five years from now. There appears to be more risk to upside due to low investment in recent years, but the oil and gas markets remain volatile. Business planning and portfolio management therefore is less about optimizing around a price deck and more about preparing for the inevitable boom-and-bust cycles. At this current point in time, it seems prudent to plan for expansion and production growth, but perhaps fortune favors the prepared, not the bold, so companies should position themselves for the day when prices drop again, whenever that might occur. And of course, as novel technologies come to the fore, oil and gas companies should assess, acquire, and deploy to drive the most value from their existing and future assets.



Let's talk



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