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Sounding off:
Oil and gas executives look at petroleum's future

Deloitte Center for Energy Solutions

Doing business in the oil patch isn't what it used to be. Concerns about sustainability and affordability are calling decades of conventional wisdom into question — and issues such as energy security and the ailing economy are challenging even the most well established petroleum companies.

To bring clarity to a confusing situation, Deloitte conducted extensive phone interviews with more than 50 oil and gas professionals, most holding C-suite positions at petroleum companies[1]. What we learned was surprising. What it means for your company's business decisions could be critical.

[1]As used in this document, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries.

Business is no longer usual amid shifting landscape

While the survey posed a range of questions related to market conditions and the future of the petroleum industry, the responses collectively suggest that oil and gas executives are starting to think about the nation's transition to renewable energy and other alternative fuels. Few are concerned that the well will literally run dry, but many believe that the locus of affordability and sustainability is shifting away from oil and gas. This situation implies that "business as usual" no longer exists. Oil and gas companies must decide how to best position themselves amid this rapidly shifting landscape. In the following pages, we present the headline findings from the study, explore possible reasons behind them, and outline key considerations for oil and gas companies as they look for ways to ride the changing tide to greater profitability.

Companies that are determined to stay in the game must consider what kind of new relationships, behaviors, and skills they'll need to develop to become the partners of choice for those that have access to resources.

[1]Results of Energy Perceptions Sampling, Oil and Gas Executives, conducted November 2008.

Findings

Many executives foresee the end of cheap oil in 50 years, and a large number think oil and gas are only affordable and sustainable in the short term.

Fifty-six percent of the sampled oil and gas executives believe that the world will run out of reasonably priced oil in the next 50 years. A similar number of them (53 percent) believe that the U.S. might run out of reasonably priced oil within the next 25 years. Further, even though 71 percent of the surveyed executives view oil and gas as the cheapest currently available energy source, only 23 percent believe that it will be the cheapest energy source 25 years from now.

Analysis

"Cheap" and "reasonably priced" are the operative words in these findings. Oil and gas executives have always had a firm grasp on a stark reality: The easy oil really is gone — or at a minimum, it is located in increasingly inaccessible areas such as Saudi Arabia, Venezuela, and Iran. While promising new reserves still exist in more welcoming territories, they are locked in shale or are located in deepwater and Arctic regions. Drilling in these hostile terrains is not repeatable or scalable from one field to another. Each is unique, which means that future exploration and production will be much more expensive.

Considerations

As a result of the current price collapse and credit crunch, many oil and gas companies are grappling to stay healthy and viable. They are focused — and rightly so — on managing cash flows and paying down debts. But this intense focus on present realities can lead to a dangerous myopia concerning future strategies. Companies must look up from their balance sheets long enough to re-assess their risks in the face of increasingly harsh geological, territorial and financial conditions. This includes answering tough questions such as: Can we survive in an environment where more and more resources are controlled by unfriendly governments? Can we play in the Arctic or offshore? And, how can we manage our resources for the long run?

Companies that are determined to stay in the game must consider what kind of new relationships, behaviors, and skills they'll need to develop in order to become the partners of choice for those that have access to resources. In addition, technology investments should not be pushed aside despite tough financial times. Smart companies are keenly aware of how one significant development can shift the whole playing field, as horizontal drilling did with natural gas. Companies that have the means should consider investing in new technologies aimed at improving access and lowering exploration and production (E&P) costs. These types of targeted investments could help keep traditional hydrocarbons "reasonably priced" for a longer period of time.

The bottom line

There is a large gulf between present resource realities and future resource realities. Companies that thrive will address the tough long-term questions alongside their short-term thinking.

Many executives anticipate a transition to renewable energy within 25 years.

Fifty-four percent of the sampled executives see renewable energy as the most sustainable source of energy in 25 years, while only 17 percent believe oil and gas will be the most sustainable source of future supply. A significant number, or 37 percent, also regard renewables as an affordable source of energy 25 years in the future.

Analysis

Access constraints are forcing more and more oil and gas executives to acknowledge that they must look in non-traditional places not just for hydrocarbons, but also for new business opportunities. Many executives believe that alternative energy will provide these opportunities in the future even though it is very hard to be profitable in renewables now. Large, cash-rich companies have the ability to hedge their bets by investing in a broad range of up-and-coming alternative energy technologies, but many smaller companies don't have that luxury.

Considerations

Many larger oil and gas companies are positioning themselves to be broader "energy" companies, but some smaller businesses simply don't have the financial means or the technical capabilities to diversify. This does not necessarily mean, however, that they are destined to become dinosaurs. Any transition to renewables will be gradual, and hydrocarbons will remain critical over the next 50 years. Smaller companies should consider ways that they can play a bigger role in this transition by investing in R&D that helps them produce oil and gas cleaner and more efficiently and/or by transferring technologies that have been developed in the oil and gas industry to alternative energy applications. The adaptation of drilling technologies to geothermal energy production offers an example. Another option is exploring more creative partnerships with National Oil Companies (NOCs). For instance, petroleum companies may be able to bring knowledge and technologies — ranging from wind farms to cleaner refineries — that can provide value by helping exporting nations to become lower emitters of carbon.

The bottom line

Decide how your company is going to fit into an energy future that emphasizes alternatives. Smaller E&P companies, for example, can stick to their knitting and also play a part in the transition away from fossil fuels. Larger integrated players, for their part, should consider positioning themselves as full-fledged energy companies.

Technology advances and government policy changes could make energy independence a reality. Petroleum companies need to hasten the development of both.

Most executives believe the U.S. can achieve energy independence.

The surveyed executives expressed a strong concern about U.S. dependence on foreign oil, with three in four believing that the U.S. can realistically achieve energy independence. A majority (55 percent) think it will happen in the next 15 years.

Analysis

This finding reveals a remarkable shift in industry sentiment. In a previous era, it was widely believed that the U.S. would indefinitely require a steady stream of oil and natural gas imports to meet rising energy demand. Technological leaps have changed that perception. Developments in horizontal drilling have resulted in an abundant domestic supply of natural gas and advances in energy efficiency, ranging from smart meters to hybrid electric vehicles, are providing realistic mechanisms for curbing demand. Additionally, due to investment, technology is moving forward in the areas of cellulosic ethanol, solar and wind, making them more economical and transporting them from the realm of science fiction to the sphere of everyday reality. These factors may coalesce to make energy independence in the U.S. a much more feasible goal.

Considerations

Every existing source of energy supply, as well as some yet to be discovered, will be necessary if the U.S. is to achieve energy independence within a reasonable time frame. This implies that there is a role for everyone in this evolving landscape. Traditional oil and gas companies should continue to explore options for becoming cleaner, more efficient producers. They may also wish to consider increasing their roles in shaping policies that make developing all forms of energy more feasible. Subsidies and incentives that support the development of alternative energy will likely buoy the energy industry as a whole through the cross-pollination of technologies and expansion of the overall pool of investment capital.

The bottom line

Technology advances and government policy changes could make energy independence a reality. More involvement from petroleum companies can hasten the development of both.

A majority of oil and gas executives believe that their companies should help the U.S. transition away from its reliance on fossil fuels over the next two generations.

Three in four executives in the sample group believe that transitioning away from fossil fuels is an appropriate goal for the U.S. Interestingly, most (56 percent) also believe it is an appropriate goal for oil and gas companies.

Analysis

Access restrictions are not going to go away, and neither are the issues of climate change and energy security. Furthermore, a generational shift is in progress. Oil and gas executives are, by and large, increasing their understanding that the industry must gradually move away from hydrocarbon-based fuels. Sustained policies and aggressive investment across all sectors of the energy industry will be critical if the U.S. is to make significant progress in transitioning away from fossil fuels within the commonly cited timeframe of two generations, or 50 years.

Considerations

Given the current capital crunch and the uncertainties around which forms of alternative energy will become dominant, oil and gas companies of all sizes will need to be highly discerning in their investment choices, emphasizing the fields and technologies they know best. Smaller companies with less capital will especially need to stick close to their core competencies. Accordingly, they may wish to invest in continued R&D for traditional oil and gas production, while partnering with other organizations that have proven capabilities in burgeoning areas such as cellulosic ethanol, wind, and solar. Larger enterprises, on the other hand, may wish to scan the horizon for renewable technologies that are becoming more viable, and put a structure in place for rapidly developing expertise in these areas as they begin to expand.

The bottom line

The energy status quo has an expiration date, presenting the petroleum industry with the opportunity to drive change — especially through innovation and R&D.

Foreign oil dependency and limited access to domestic reserves are the two issues executives see as the most important.

A third of all executives think more than three-quarters of the U.S. oil supply will be coming from abroad within 25 years, and nearly two-thirds are very concerned about the availability of domestic sources of oil and gas.

Analysis

Nationalization is becoming an increasingly pervasive obstacle to global exploration and production. Meanwhile, on-shore domestic oil reserves have been declining rapidly. While current domestic production is not sufficient to meet all of our nation's needs, the gap between domestic supply and national demand continues to widen. With the most promising areas for new domestic reserves still off-limits to exploration and production, most executives believe that imports will inevitably comprise a larger portion of our country's oil supply.

Considerations

Don't underestimate the technology wild card. The whole gas play in the U.S. was radically transformed with new technologies such as horizontal drilling. Executives should be asking: Can new technologies and production processes be developed that can help the industry produce oil more economically and extract more reserves out of the field? Even though renewables are currently getting a lot of attention, progressive companies will still put money and effort toward developing new, more efficient methods for tapping traditional hydrocarbons.

The bottom line

Maximizing our current domestic resources is a critical complement to advancing alternative energies.

Large, cash-rich companies have the ability to hedge their bets by investing in a broad range of up-and-coming alternative energy technologies, but many smaller companies don't have that luxury.

The best alternatives to imported oil and gas are renewable energy sources. However, in terms of transportation fuel alternatives to crude oil derivatives, natural gas is a clear winner.

While many of the sampled oil and gas executives (46 percent) feel renewable fuels are the best alternative when diversifying energy sources overall, most (54 percent) think the best alternative in transportation fuels is natural gas.

Analysis

The popularity of natural gas as a transportation fuel alternative is likely linked to the massive changes that have swept this sector of the industry. Technological advances have created a glut of domestic supply, which has depressed prices. This situation has caused industry luminaries to call for infrastructure changes that would allow natural gas to be used as a transportation fuel, creating a promising "win-win" for the nation and the industry: Demand and correspondingly prices would increase while the U.S. would benefit from lessened dependency on foreign oil and lower carbon emissions from a cleaner-burning alternative to gasoline and diesel.

Considerations

Despite the fact that oil and gas executives show a strong affinity for natural gas, it is unlikely that this fuel alone will transform our transportation sector in the near term. The use of natural-gas-powered vehicles will probably continue to grow, but so will the use of gasoline and diesel hybrids, plug-in electric cars, flex-fuel vehicles, and many variations thereof. A vast number of companies, both large and small, are competing to develop technologies that will address climate change and reduce U.S. dependence on foreign oil. This diversity almost assures that a mix of fuels, which includes and extends well beyond natural gas, will be the reality for some time to come.

The bottom line

Despite the affinity for natural gas as a budding transportation fuel, it is a part of a broad spectrum of non-traditional transportation fuels.

Executives say that government regulations are the most significant risks they face.

Forty-two percent of the surveyed executives believe that government regulation is the most significant risk that U.S. oil and gas companies face. Twenty-nine percent cited geopolitical risk as the most significant, which corroborated general concerns expressed throughout the survey about dependency on foreign oil.

Analysis

Historically, the industry's experience with regulation has not been positive, which undoubtedly contributes to the healthy skepticism expressed in this response. Additionally, the survey was undertaken only a few months after oil prices had reached all-time highs. This situation thrust the threat of tax penalties on excess profits into prominence.

Considerations

U.S. energy independence cannot be achieved without boosting our domestic oil and gas production. The Obama administration likely understands this but wants to make sure that traditional hydrocarbons are produced in environmentally acceptable and socially responsible ways. This creates an opportunity for oil and gas executives to work with the administration, presenting feasible, cleaner options for boosting production and realistic timeframes for reaching mutually beneficial targets. The goal should be to collaborate with policymakers, helping them define and devise reasonable regulations that provide direction rather than impose control or new costs.

The bottom line

President Obama and the new Congress have stated their commitment to a new energy direction. The industry has a unique opportunity to set mutually satisfactory and achievable goals.

When it comes to selecting pro-oil government policies, encouraging investments into all types of energy is the top choice among oil and gas executives. Opening access to off-limits domestic resources is a top choice of only 17 percent of executives.

Thirty-seven percent of oil and gas executives believe that leveraging tax policy to promote investment in all energy resources, inclusive of oil and gas, nuclear, and alternatives, is the most effective policy tool the federal government could employ to support U.S. energy independence. The popularity of this response stood in bold contrast to the relatively small proportion (17 percent) who felt that energy independence could best be promoted by opening access to domestic resources that are currently off-limits.

Analysis

A changing of the guard is in progress. Many up-and-coming oil and gas professionals have grown up with the belief that U.S. energy independence is not only possible but also essential over the long term. While increasing the domestic supply of oil and gas is seen as vital to achieving this goal, it is viewed as a stopgap measure to enhance energy security. For instance, half of sampled oil and gas executives believe that the main benefit of lifting restrictions on offshore drilling would be to create a buffer zone during the period it takes to transition to alternative and renewable energy.

Considerations

Energy industry participants across all sectors need a transparent, durable tax policy — not one that changes every couple of years. Bearing in mind that most investments in the oil and gas industry take 5-7 years to come online, tax-related decisions must have even longer shelf lives if the industry is to attract the enormous amount of investment capital that will be needed to increase domestic fuel supplies and reduce reliance on imports in a carbon-constrained environment. With an administration that has named energy independence as a top priority, the industry as a whole finally has a receptive ear. This creates an opportunity for encouraging more sensible tax policies by proactively educating policymakers regarding the realities, risks and long-term timeframes of energy-related investments.

The bottom line

The key to effective change is consistency. Government needs to do its part to incentivize this type of change.

Three in four executives believe that transitioning away from fossil fuels is an appropriate goal for the U.S. for the long term.

The biggest capital expenditure increase in the oil and gas industry is expected in drilling on the outer continental shelf (OCS) and in the Arctic National Wildlife Refuge (ANWR), together with onshore natural gas exploration.

Twenty-five percent of the sampled oil and gas executives say that drilling on the OCS will be the most likely place we will see an increase in capital expenditures in the oil and gas industry. Onshore natural gas exploration was also a prominent choice (21 percent), followed by drilling in ANWR (13 percent.)

Analysis

Executives in cash-rich companies are increasingly facing the dilemma of what to do with their capital. Access in many regions is fully blocked, and where it is available, the geologic, political and financial risks are often too great. Considering the severity of the situation, many companies are turning their attention to pursuing existing domestic opportunities or creating new ones. The question is: Can policy be sufficiently altered to allow new domestic reserves to be discovered and tapped? Many believe that opening up the OCS is more likely than loosening restrictions on ANWR. This perception is probably based on the ideas that offshore drilling is more economically sound than land-based E&P and that many states desperately need the revenue amid the current economic downturn.

Considerations

Greater public education is needed to communicate the importance of increasing domestic oil and gas supplies to stabilize prices and enhance energy security. While citizens are demanding cleaner fuels, the public's ability to grasp the complexity of the situation is often underestimated. During the recent presidential race, citizens responded positively to public relations efforts by the McCain camp that explained how greater access to offshore reserves would positively impact supplies. The industry may wish to engage in a similar program to enlist the public's support in encouraging policymakers to take a balanced and reasonable approach to decisions concerning access.

The bottom line

The nation cannot realistically transition away from fossil fuels without also tapping new domestic reserves. The industry must make this clear to policy makers and the public.

Conclusion

The survey data collectively suggest that a sea change is underway. The conventional thinking within the industry has become more expansive, with senior oil and gas executives expressing a surprisingly strong belief in the viability of renewables as a growing part of our nation's energy mix. This shift in sentiment likely comes in response to the realities of access constraints and demands from the American public for clean fuels that can both reduce our dependence upon foreign oil and address climate change.

A separate Deloitte survey of registered voters across the U.S. supports this assertion with renewables like solar and wind power scoring an 86 percent public favorability rating, consistent across all age and education groups[2]. While the survey clearly indicates that most citizens believe renewable energy is the way of the future, it also suggests that they may not realize the need for more hydrocarbons like oil and gas, which are projected to account for the majority of the world's transportation fuels through 2030.

A significant communications effort is needed to educate the public on the challenges ahead and the important role that traditional oil and gas companies must play if the nation is to successfully transition to a new, cleaner energy era. Policymakers, too, must be brought to a fuller understanding of our energy realities. America urgently needs a comprehensive energy policy that simultaneously encourages local exploration and production of oil and gas, as well as the development of economical alternative fuels, such as renewables.

Oil and gas represent the bridge to tomorrow; however, just how rapidly that bridge gets built will depend upon our government's willingness to implement intelligent, sustained energy policies and the industry's ability to innovatively apply the expertise and capital they have today.

For more information on the Deloitte surveys referenced herein, please contact Jon Rucket at +1 713 982 4217 or jrucket@deloitte.com.

[2]Results of Energy Perceptions Survey, Registered Voters, December 10, 2008.

Methodology

Deloitte, working with the survey firm Penn, Schoen & Berland Associates, conducted 52 phone interviews with director-level and higher level executives at oil and gas companies (more than half of the interviews, 33, were C-level executives). It conducted the sampling between November 5 and 7, 2008.

Some data is compared to an online survey of 1,001 registered voters nationwide. Deloitte and Penn, Schoen & Berland Associates conducted that survey between November 5 and 12, 2008.

Deloitte Center for Energy Solutions

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