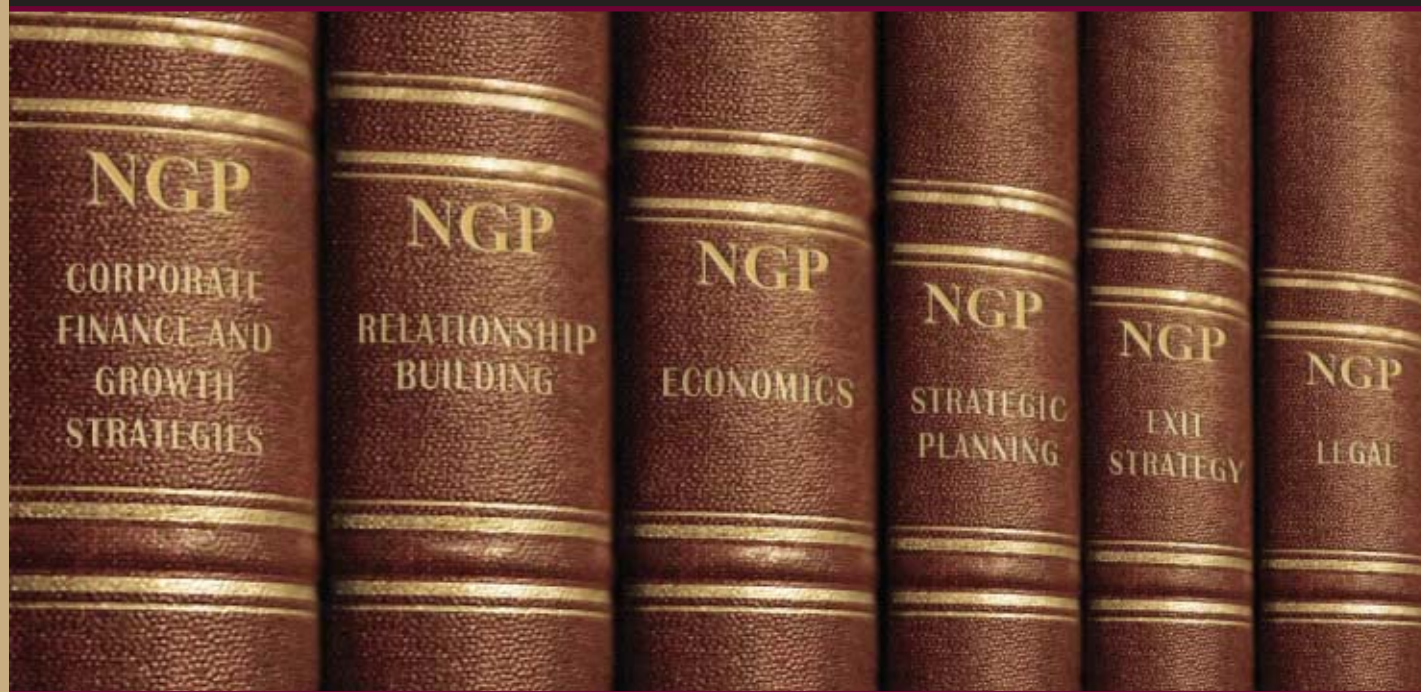


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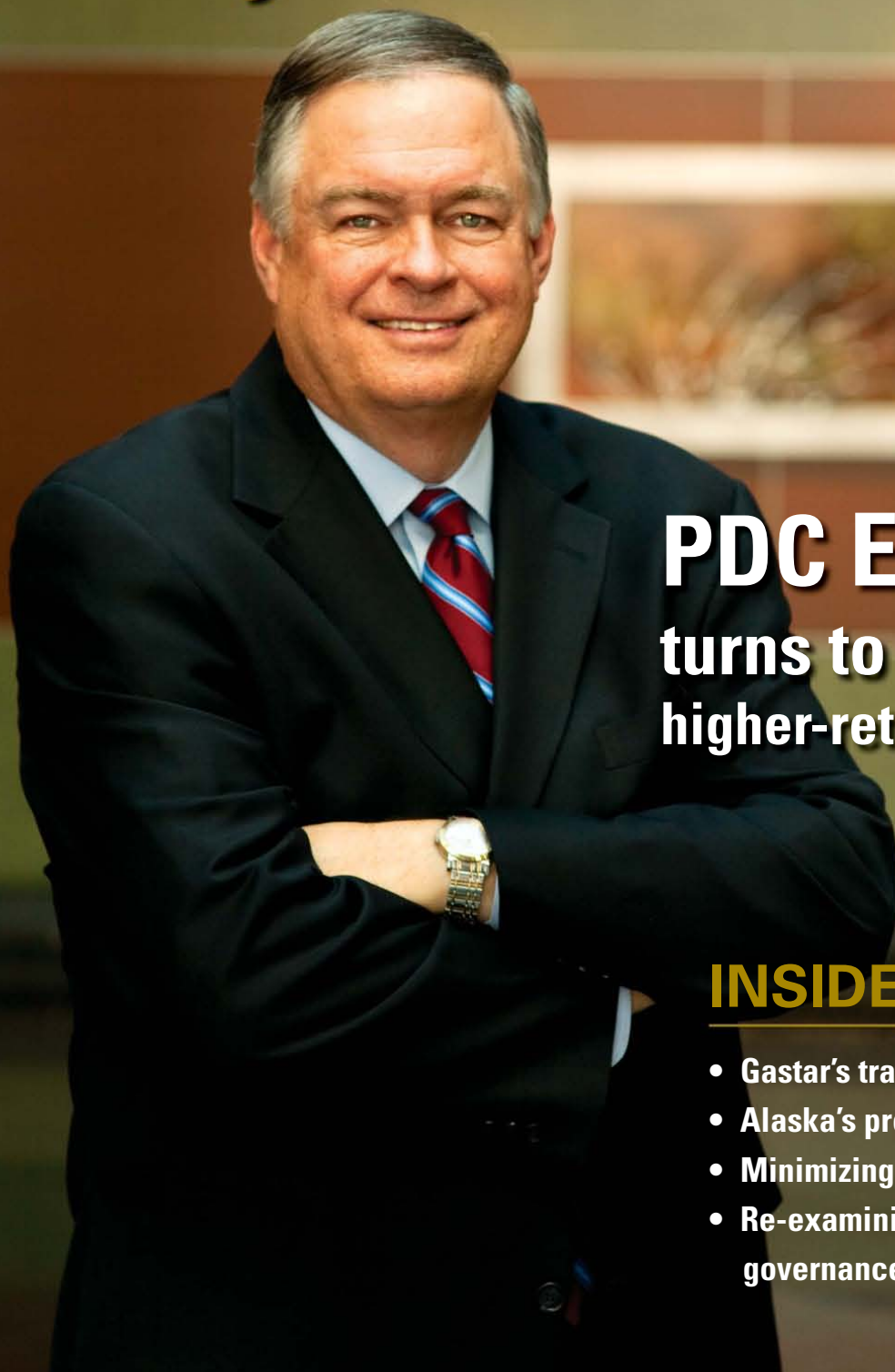
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September 2010



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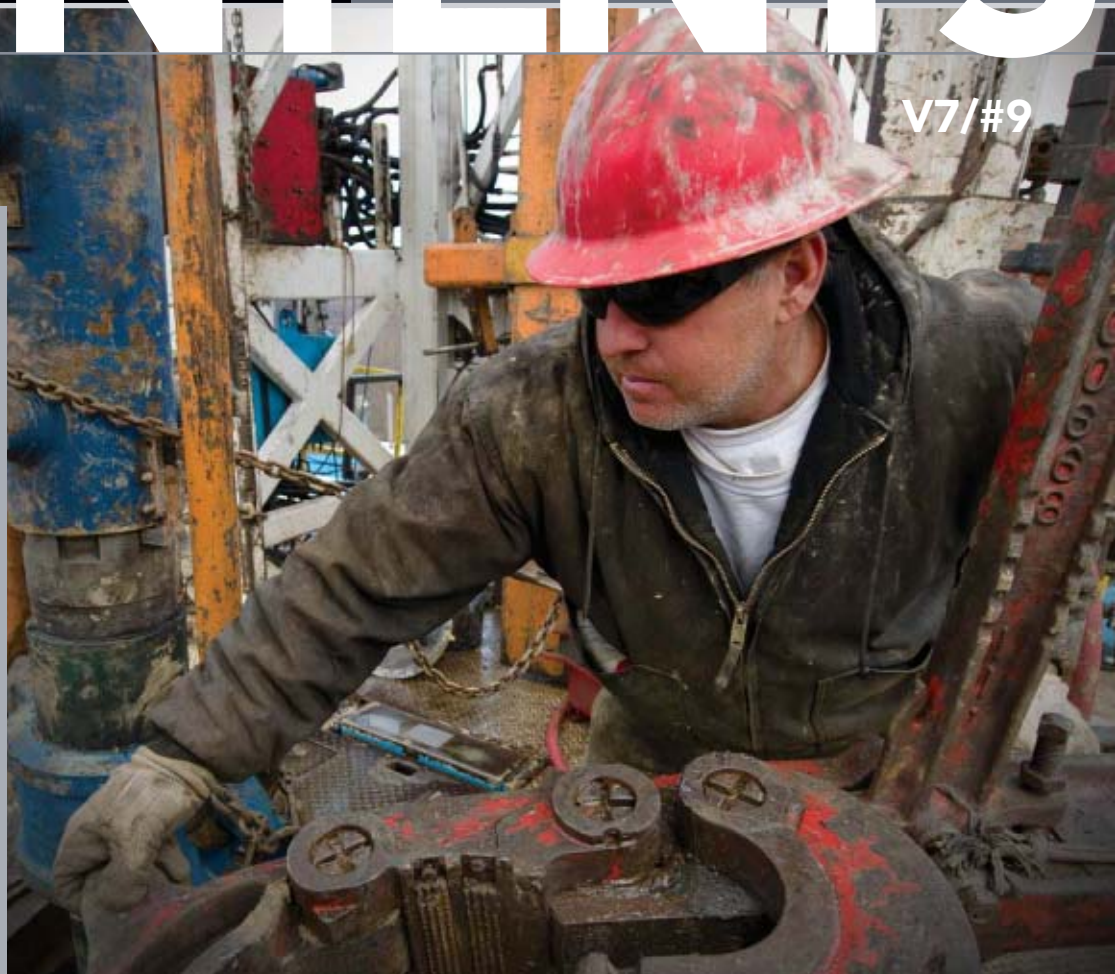


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Richard W. McCullough, chairman and CEO, PDC Energy

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PDC Energy, formerly Petroleum Development Corp., has key strongholds in the Wattenberg Field and Piceance Basin of the Rocky Mountains and recently expanded its footprint in the Marcellus Shale, the Wolfberry, and in the Niobrara. OGFJ Editor Don Stowers spoke to Richard McCullough, PDC's chairman and CEO, about the motivation behind the expansion.



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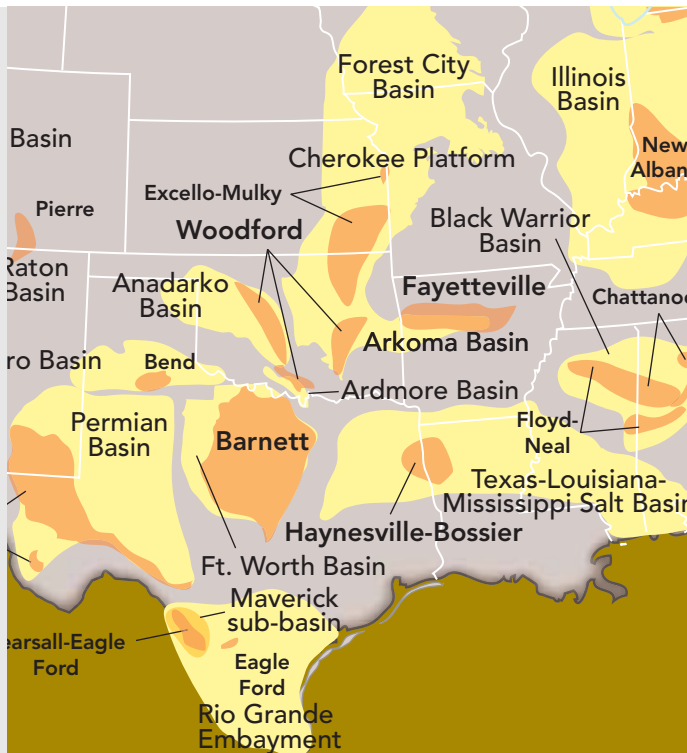
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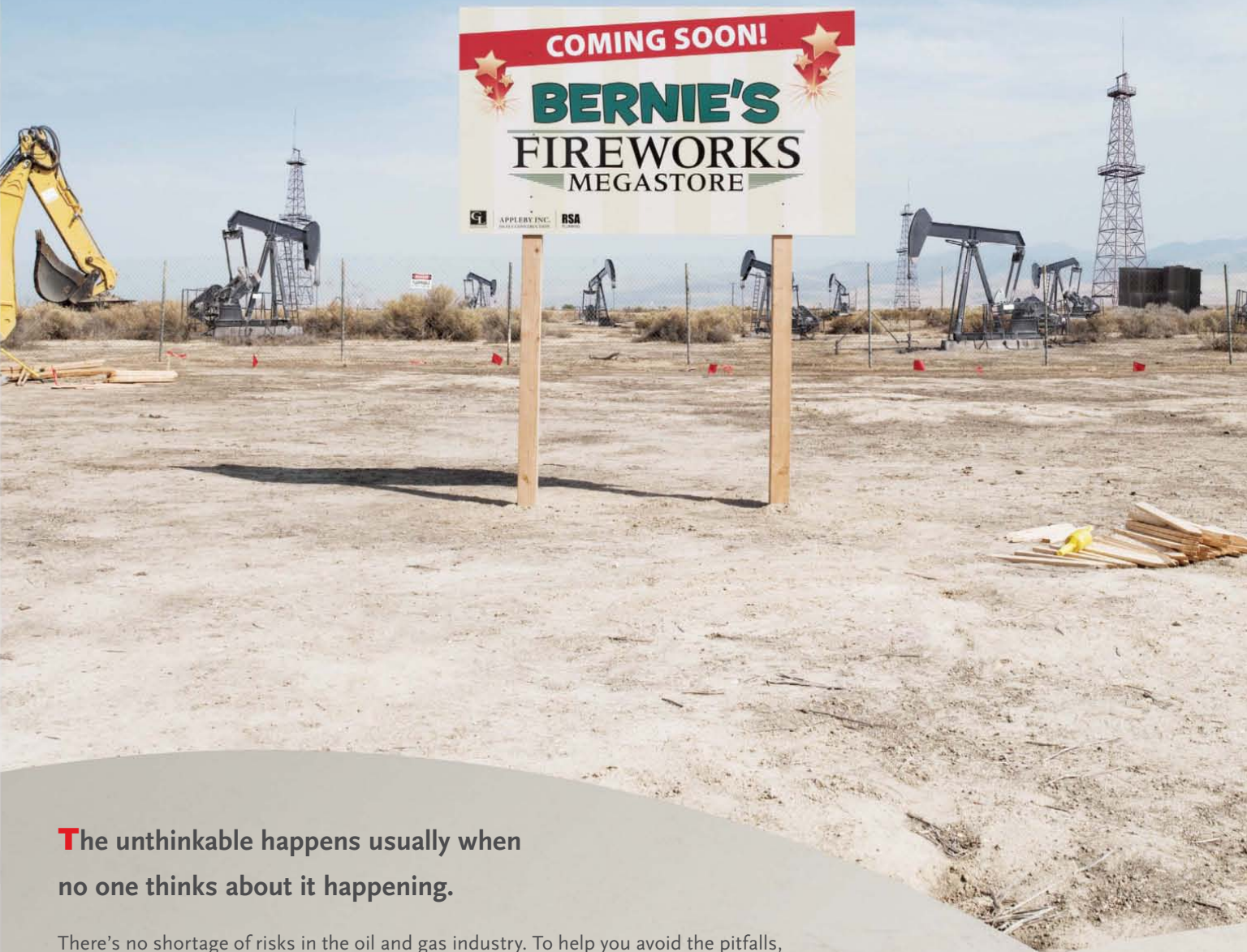
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Bruce Vincent, president of Swift Energy and current chairman of IPAA, appears on Mad Money with Jim Cramer on CNBC to talk about investing in natural gas. Watch this and other videos from around the industry.

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Editor's Comment

Shale activity **boosting M&A market**

Don Stowers
Editor-OGFJ

The US economy may be stalled, but the energy transaction market is not. At least that's the impression I got from a recent breakfast presentation by the Houston office of Madison Williams during the Summer NAPE event. There are other indicators, too, that suggest the M&A market is fairly robust, taking into consideration the overall economy.

Sylvia Barnes, who heads up the energy practice for Madison Williams (formerly SMH Energy), pointed out that her firm had been involved in 21 transactions so far this year, valued from roughly \$10 million to \$500 million. Her firm acts as a financial advisor and is often asked to issue "fairness opinions" involving energy deals.

What is driving this activity? A variety of conditions in the oil and gas industry, not the least of which is the "race to liquids" that Bentek's **Rusty Braziel** wrote about in the August issue of OGFJ. E&P companies are emphasizing liquids-rich production over natural gas because of continuing depressed prices for the latter commodity. Crude oil prices have fallen from near \$80 to closer to \$70 as of this writing, but the economics are still better for crude and natural gas liquids than natural gas for the foreseeable future.

As a result, oil- and liquids-rich plays like the Bakken, Eagle Ford, Granite Wash, and Marcellus are getting a lot of attention these days. Similarly, Permian Basin assets have become hot properties for many producers in part because horizontal oil wells are providing some of the best

economics in the US. At least that's the view of Dahlman Rose & Company's **Nicholas Pope** and **Shaan Sheikh** in their recent equity research newsletter.

I spoke with Parallel Petroleum CEO **Larry Oldham** during NAPE, who agreed with this assessment. The Midland, Tex.-based producer has been steadily increasing its oil and liquids production since going private a few years back. Larry said he didn't miss the reporting requirements and related issues of being a public company and added that Parallel Petroleum would be interested in acquiring oil or liquids-rich assets "for the right price." The company currently has holdings in the Permian Basin of West Texas and New Mexico and the Barnett Shale in North Texas.

A key question is whether or not the premium value for high-BTU gas and crude/condensate production will continue. Most of the larger shale gas producers have shifted significant budget dollars to liquid-rich plays, but as Rusty Braziel points out, "There is a catch."

To realize the higher wellhead value for high BTU gas, the producer must run what Rusty calls the "NGL Value Chain Gauntlet." NGLs must be extracted at a processing plant, the liquids must be fractionated (split into individual NGL components), transported to market, and finally, that market must be large enough to absorb the new supply without a detrimental impact on price.

Rusty concluded, "Producers in areas suffering downstream capacity constraints may find the economic benefits of high-BTU gas will be difficult to realize."

Raymond James' research agrees with this conclusion. **Darren Horowitz** and **James Allred**, two RJ energy researchers and analysts, point out that a major concern is that vastly

increased production will create a supply glut in NGL markets, similar to what has unfolded in natural gas markets, leading to a prolonged period of depressed NGL prices.

Nevertheless, both domestic and global energy players are continuing to invest in unconventional resource plays, and operators and oilfield service companies in the US and Canada say they have developed the technical expertise to make the plays economical in low-price environments. Companies such as Statoil, BP, and Total have formed partnerships with US operators in part to gain expertise in horizontal drilling and fracturing techniques in shale and other unconventional resource formations that they plan to use in other parts of the globe.

As a result, energy transaction activity – both for producers and oilfield service companies – has picked up. The same is true for investments and partnerships involving the midstream sector, which is key in building out transportation infrastructure. Just this week, Houston's Enbridge Energy Partners and Enbridge Income Fund in Calgary launched a \$550 million project in the Bakken to expand crude oil pipeline capacity to accommodate rapidly growing production in the Bakken and Three Forks formations. Scheduled for completion in 2013, the project will move about 145,000 barrels of oil per day and can be expanded to 325,000 bpd at low cost, according to a company spokesman.

It's comforting to know that the weak economy hasn't curtailed investment in the energy sector. It's also good to know there are still many opportunities available to producers, midstream companies, and service companies here in North America. **OGFJ**

Have an opinion about this? Visit www.ogfj.com to comment.

Capital Perspectives

HIRE Act offers significant tax savings

Kathleen King, *Alvarez & Marsal Taxand LLC, Vienna, Va.*

The Hiring Initiatives to Restore Employment (HIRE) Act, signed into law by President Obama on Mar. 18, includes two incentives that may provide significant tax savings for qualifying organizations that hire new employees. These incentives include a payroll tax exemption and a credit worth up to \$1,000 for retaining such employees. Because a large part of the incentive is tied to payroll taxes, the legislation can immediately enhance companies' cash flow by permitting employers to retain their portion of the Social Security tax ordinarily remitted to the Internal Revenue Service.

Qualifying employees include individuals hired between Feb. 3, 2010, and Dec. 31, 2010, who have not worked more than 40 hours within the 60 days prior to being hired. The payroll tax exemption has no cap or limit on the total amount of tax benefits that can be claimed by an employer. Employers can save up to \$6,622 per qualifying employee, whether they hire one new employee or hundreds of new employees. In addition to the current payroll tax exemption, employers may also receive an income tax credit of up to \$1,000 for each qualifying employee who is retained for at least 52 consecutive weeks after being hired.

The tax benefits are available to a broad range of businesses, including agricultural employers, tax-exempt organizations, tribal governments, and public colleges and universities. Taxpayers that historically claimed the Work Opportunity Tax Credit (WOTC) have generally adapted the HIRE Act requirements to their existing hiring procedures. However, the HIRE Act incentives have the potential for a greater positive impact on employers since they apply to a broader base of potential new employees. Despite the broad application of the rules and fairly

limited reporting requirements, the legislation has received a lukewarm reception from many potentially eligible employers.

Therefore, this article is an opportunity to address common reactions from taxpayers considering these incentives.

1. We have let employees go this year, so I'm not entitled to the tax benefits.

The payroll tax exemption does not apply to wages paid to an employee who is hired to replace an existing employee, unless the existing employee terminated employment voluntarily or was terminated for cause. The instructions to Form W-11 clarify that employees dismissed for cause will not impact entitlement to the incentive. The term "for cause" is not specifically defined.

The instructions for IRS Form W-11 provide that "cause" may include downsizing. Therefore, taxpayers who have laid off employees may still be eligible for these important incentives. Other reasons an employee could be terminated for cause include, but are not limited to stealing, lying, failing a drug or alcohol test, falsifying records, embezzlement, insubordination, deliberately violating company policy or rules, and other serious misconduct related to their employment. These serious acts of misconduct are often cited when an employer is not required to pay unemployment benefits.

The IRS clarified in guidance released last week that the payroll tax exemption applies to wages paid to an employee hired to replace an individual whose employment was terminated due to poor performance. Other common actions that may result in firing for cause, but that do not constitute misconduct,

include poor performance due to lack of skills, good faith errors in judgment, attendance problems, and poor relations with co-workers.

2. I don't think I hire qualifying employees.

The payroll tax exemption applies to wages paid to any qualified employee. Unlike the WOTC, the HIRE Act incentives are not limited to certain classes of individuals or employees. Employers can avoid paying the 6.2% employer Social Security tax under the HIRE Act, whether they hire an employee who earns \$30,000 or one who earns \$100,000 annually. The employee's 6.2% share of Social Security tax and the employer's and employee's shares of Medicare tax still apply to all wages.

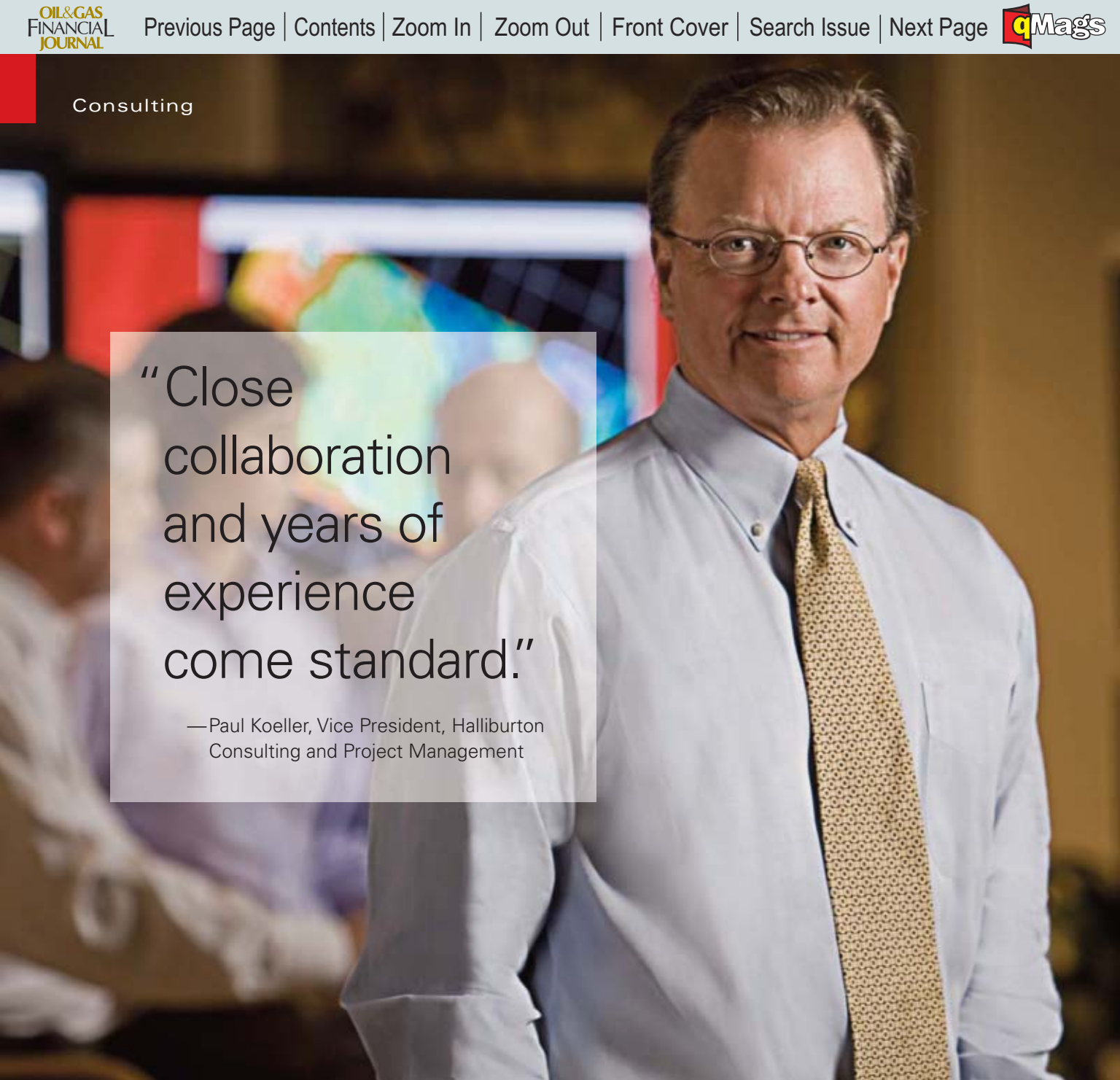
If an employer hires a recent graduate who has been in school for some or all of the 60 days preceding the date of hire, the payroll tax exemption also applies to wages paid to that employee. It is not necessary that an individual was previously employed and has lost his or her job in order to be a qualified employee under the HIRE Act.

The IRS also recently clarified that a self-employed individual may be a "qualified employee" because only work performed as an employee counts in determining whether an individual has been employed for 40 hours or less during the 60-day period.

3. I have NOLs so I can't focus on these types of opportunities.

Because a significant portion of the HIRE Act incentives relate to payroll taxes, even employers who are not currently paying income tax can benefit from these incentives.

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Capital Perspectives

4. The documentation requirements are too stringent.

There is no requirement that employers send signed employee affidavits, such as Form W-11, to the IRS. However, employers should retain these affidavits with other payroll and income tax records. A qualified employee must certify "by signed affidavit," under penalties of perjury, that he or she has "not been employed for more than 40 hours during the 60-day period ending on the date such individual begins such employment." Qualified employees will be able to fill out W-11 forms online, print them, sign them and submit them to their employer.

"Given the potential HIRE Act benefits, taxpayers should review their hiring activity during 2010 and seriously consider taking advantage of this incentive. Employers must also ensure that their books and records are in order to support the tax savings available under the HIRE Act."

Employers must secure the signed affidavit by the time the employer files an employment tax return applying the payroll tax exemption. If the employer obtains the signed affidavit from a qualified employee after wages are paid to the employee, the employer can still apply the payroll tax exemption in order to determine its liability on these wages. In some cases, this may require the filing of a corrected return for a prior quarter.

5. If I forget to claim qualified employees on my second-quarter payroll tax filing, can I still qualify for the payroll tax exemption?

Yes, employers may amend their quarterly payroll tax filings. In fact, taxpayers should not claim the exemption if they don't have Form W-11 documentation in place at

the time of the filing.

In contrast, if the otherwise qualified employee does not provide the signed affidavit until Aug. 1, 2010, employers may not claim the first-quarter credit on the second-quarter Form 941 for wages paid to the qualified employee from Mar. 19, 2010, through Mar. 31, 2010, and cannot apply the exemption to wages paid in the second quarter because the employer did not obtain the signed affidavit by the time it filed its second-quarter Form 941. Instead, employers must file a Form 941-X to correct the second quarter of 2010, if they want to claim the first-quarter credit and

apply the exemption to the second-quarter wages paid to the qualified employee.

6. What if I let employees go in one location, but I need to hire them in another?

Employers may apply the payroll tax exemption to wages paid to a rehired employee who is otherwise a qualified employee. However, the HIRE Act's 60-day period for evaluating hours worked before being hired must be continuous. The payroll tax exemption even applies to wages paid to an employee if an employer lays off an employee because of a lack of work and later, when work picks up, hires a new employee. As previously mentioned, a downsized employee may satisfy the requirement as an employee terminated for cause.

For a rehire of a downsized employee to qualify, the temporary layoff must result in an actual termination of employment. The HIRE Act does not define the term "begin employment," so the general principles relating to employment apply. This is a facts and circumstances determination regarding the establishment, maintenance and termination of the employer-employee relationship.

7. Does the qualified employee have to work a set period of time for the employer to be eligible for the exemption?

No. Application of the payroll tax exemption does not require that a qualified employee be employed for a set number of hours or a set number of weeks.

8. When should I choose the WOTC over the payroll tax exemption?

Employers may choose to apply the payroll tax exemption or claim the WOTC for an employee, but not both. An employer that wishes to claim the WOTC for a qualified employee may not apply the payroll tax exemption with respect to any wages paid to that employee from Mar. 19, 2010, through Dec. 31, 2010. Because WOTC eligibility covers the entire year (i.e., 2010), it may be advantageous to elect the WOTC rather than applying the HIRE Act incentives to employees hired towards the end of 2010.

Reporting requirements not a burden

The HIRE Act tax incentives apply to a wide range of potential new employees. In addition, the reporting requirements are fairly limited and should not be a significant burden to most employers. Given the potential HIRE Act benefits, taxpayers should review their hiring activity during 2010 and seriously consider taking

Capital Perspectives

advantage of this incentive. Employers must also ensure that their books and records are in order to support the tax savings available under the HIRE Act.

As outlined above, the HIRE Act payroll tax exemption allows employers to avoid paying their 6.2% share of Social Security tax on all wages paid to qualified employees from Mar. 19, 2010, through Dec. 31, 2010. With no limit on a qualified employee's salary that is eligible under the HIRE Act, this can be a significant incentive even for employers who are hiring a few new employees in certain high-paying areas, such as engineering.

A surprising number of taxpayers have been indifferent to the idea of applying for the HIRE Act benefits. In many cases, the HIRE Act offers significant payroll tax savings for companies that are hiring new employees during 2010.

Because it is a limited, short-term program with a definite expiration date (the payroll tax exemption program does not even last a year and expires on Dec. 31, 2010), many taxpayers seem hesitant to spend too much time developing the necessary systems and protocols required to comply with the HIRE Act rules. However, most employers already have similar systems in place to comply with their normal federal and state payroll tax reporting requirements. And, as mentioned above, if you are already taking advantage of the WOTC, it should be relatively painless to adapt your WOTC reporting procedures to the HIRE Act.

As with most tax incentives, an audit trail of proper documentation is important to sustaining the HIRE Act benefits. Standard documentation will include a Form W-11 for each new employee, maintained in an easily accessible format and location. Taxpayers should also be prepared to respond to questions about former employees who departed voluntarily or who were terminated. **OGFJ**

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Upstream News

Chevron makes natural gas discovery in Exmouth Plateau area of Carnarvon Basin offshore Western Australia

Chevron Corp. has made a natural gas discovery in the Exmouth Plateau area of the Carnarvon Basin offshore Western Australia. The Brederode-1 exploration well is located within the WA-364-P permit area approximately 217 miles northwest of Onslow. Situated in 4,550 feet of water, the well was drilled to a depth of 9,022 feet and encountered approximately 49 feet of net gas pay.

Jim Blackwell, president, Chevron Asia Pacific Exploration and Production Co., said the Brederode-1 discovery, which follows the 2009 Kentish Knock discovery in the same area, extends the gas resources farther offshore Australia and continues to grow the company's discovered gas portfolio in Australia.

Chevron's Australian subsidiary is the operator of WA-364-P with 50% interest. Shell Development (Australia) also holds 50%.

Seadrill subsidiary Seawell to acquire Allis-Chalmers in \$890 million transaction

In a move that will create one of the largest independent well services companies, Seadrill Ltd.'s majority owned subsidiary Seawell will acquire Allis-Chalmers in a transaction valued at US\$890 million.

The combined company will have approximately 6,500 employees and is projected by equity research analysts to have an estimated revenues of US\$1.3 billion and a contribution to capital or EBITDA of US\$195 million in 2010.

The combined company will operate its Drilling and Well Services in more than 30 of the world's key oil and gas regions including the US, Gulf of Mexico, Brazil, Argentina, North Sea, Middle East, Africa and Southeast Asia / Pacific.

The merger is conditioned, among other things, on the listing of Seawell on the Oslo Børs or the London Stock Exchange and Seawell raising no less than an additional US\$100 million in equity.

Upon completion of the merger, Jørgen Peter Rasmussen will be the combined company's new CEO and president, and a member of the board of directors. The new company's COO and executive vice president will be Thorleif Egeli who is currently the CEO of Seawell Management AS. The non-executive chairman of Seawell Ltd. will be Saad Bargach of Lime Rock Partners and Tor Olav Trøim will continue as vice chairman.

Lime Rock Partners V LP has agreed to entered into an agreement with Seawell pursuant to which Lime Rock

has, among other things, agreed that if it votes in favor of the merger, it will elect to receive Seawell common shares in respect of the Allis-Chalmers preferred and common stock that it holds. Pursuant to this agreement, Lime Rock has also agreed to vote its Allis-Chalmers shares against any alternative transaction for a period of nine months following any termination of the merger agreement.

The companies anticipate that the transaction could close as soon as the end of the calendar year.

Alpha Corporate Finance and Goldman Sachs International are acting as Seawell's financial advisors. Seawell's legal advisors are Skadden, Arps, Slate, Meagher & Flom LLP, and Wiersholm, Mellbye & Bech, advokatfirma AS. Andrews Kurth LLP and Thommessen are legal advisors for Allis-Chalmers. RBC Capital Markets Corp. is acting as Allis-Chalmers' financial advisor and rendered a fairness opinion to its board of directors.

After opposition, Kosmos, ExxonMobil cancel Ghana asset sale

After the deal met with resistance, US-based Kosmos Energy and ExxonMobil cancelled a Share Purchase Agreement that would have resulted in oil major Shell acquiring nearly US\$4 billion in Ghana assets.

According to the Energy Ministry of Ghana, the major challenges regarding the upstream petroleum sector is sustainably developing the industry while judiciously managing the revenue received from the industry in a way that "will ensure maximum benefits to the people of Ghana."

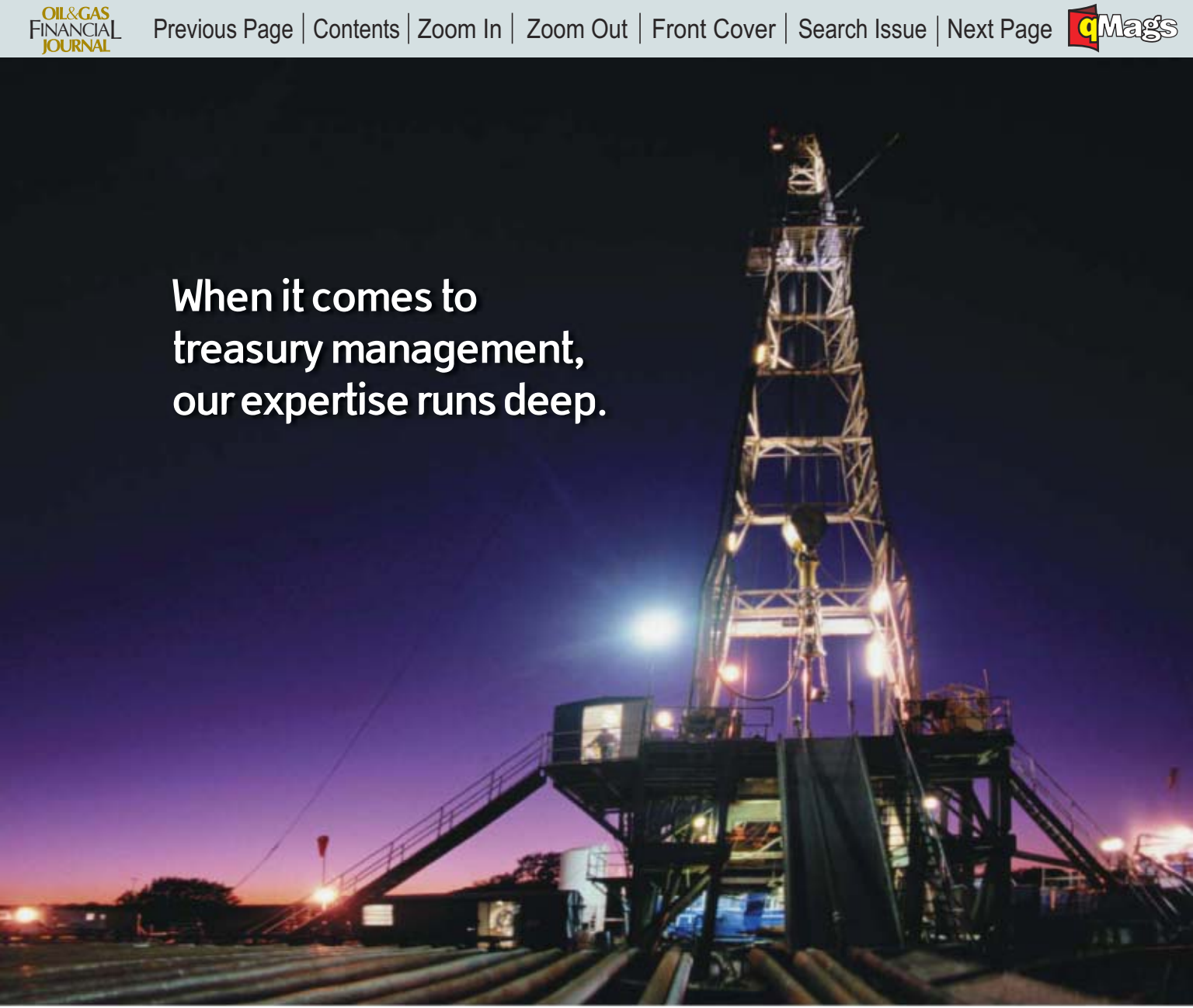
Ghana National Petroleum Corp., the state oil company, opposed the transaction on the grounds that it violated the country's laws in that it was not offered first right of refusal.

In a press release, Brian F. Maxted, Kosmos' COO, said that the company "will continue to work with our block partners and the Government of Ghana to develop these resources," noting that, "first oil from the Jubilee Field phase one development is fast approaching."

Dallas-based Kosmos Energy, established in 2003, chose West Africa as its operational venue because of its high-quality exploration prospects (OGFJ, September 2008, p. 26).

Oil production from the Jubilee Field phase one development is expected to start at the tail-end of 2010 and reach a production plateau of 120,000 barrels of oil per day during the first half of 2011.

On the Deepwater Tano Block, drilling continues on the side track of the Owo-1 discovery well to gather additional geological data and test a lower objective.



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Upstream News

The Oninya exploration prospect, also on the Deepwater Tano Block, will be drilled immediately following completion of the Owo-1 side track.

“Our focus is to ensure that Kosmos is well-positioned operationally and financially to fulfill its roles as operator of the West Cape Three Points Block, technical operator for development of the Jubilee Field, and partner in the Deepwater Tano Block,” Maxted added.

Kosmos Energy is the operator of the West Cape Three Points Block in which it holds a 30.875% interest. Partners in the block are Anadarko (30.875% working interest), Tullow Oil plc (22.896% working interest), Ghana National Petroleum Corp. (10% participating interest), E.O. Group (3.5% working interest), and Sabre Oil and Gas Ltd. (1.854% working interest).

The company also holds an 18% interest in the Deepwater Tano block. Partners in the block are Tullow Oil plc (49.95% working interest), Anadarko (18% working interest), Ghana National Petroleum Corp. (10% participating interest), and Sabre Oil and Gas Ltd. (4.05% working interest).

The US firm is backed by private equity investors Warburg Pincus and Blackstone Capital Partners.

– Mikaila Adams

Tests from two discoveries, appraisal well, total 8,855 barrels of oil, 4.9 MMcf/d for Apache

Apache Corp. has reported two new oil discoveries and a significant appraisal in the Faghur Basin in the far southwest of Egypt’s Western Desert oil and gas province.

- The Pepi-1X, drilled approximately 6 miles (10 km) south of Apache’s Phiops Field, test-flowed at 4,216 barrels of oil and 4.9 million cubic feet (MMcf) of gas per day from a 68-foot gross interval in the Lower Safa formation.
- The Buchis South-1X, also about 6 miles south of Phiops, logged 131 feet of pay in several Cretaceous zones, including the Kharita and Alam El Buieb (AEB) sands. A test in one AEB zone flowed 1,647 barrels of oil per day.
- The Faghur-8X step-out appraisal extended the Faghur Field by 1.6 miles (2.7 km) to the east. The well logged 79 feet of stacked Cretaceous pay in multiple AEB sands. A well test in one AEB sand flowed at an average rate of 2,992 barrels per day.

The Pepi and Buchis discoveries set up several additional exploration drilling opportunities on trend, and the Faghur-8X significantly increased the size of the field and set up a number of follow-up development drilling

opportunities.

Current gross production from the Faghur Basin is approximately 24,000 barrels of oil per day. Additional infrastructure projects are expected to bring processing and transportation capacity from the basin to 40,000 barrels of oil per day before year-end 2010. In the second quarter, Apache’s gross production in Egypt totaled approximately 181,000 barrels of oil and 789 MMcf of gas per day; Apache’s net production during the period totaled approximately 98,500 barrels of oil and 388 MMcf of gas per day.

Apache has drilled five discoveries among eight exploration wells in the Faghur Basin during 2010. Drilling is under way on two wells - WKAL I-3X and Nebra-1X - and five additional exploration wells are planned. Apache continues to evaluate 3-D seismic surveys - including a recently completed 155-square-mile survey - to identify additional exploration opportunities in the basin.

OGX finds hydrocarbons in Campos Basin offshore Brazil

OGX SA has identified the presence of hydrocarbons in the Albian and Santonian sections of well I-OGX-18-RJS, located in the BM-C-40 block, in the shallow waters of the Campos Basin offshore Brazil. OGX holds a 100% working interest in this block.

“The OGX-18 well is located 2 kilometers away from OGX-14, the Perú prospect. The proximity of these discoveries, combined with the fact that the Albian section of this well is structurally 56 meters higher than at OGX-14, points to a potentially superior column than the one already encountered in this block,” commented Paulo Mendonça, general executive officer of OGX.

To date, an oil column of approximately 12 meters was encountered in carbonate reservoirs in the Albian section of well OGX-18, also known as Ingá. The well was in a hydrocarbon zone when drilling was interrupted due to sampling. Drilling continues to determine the total column and net pay.

Additionally in the Santonian section, high porosity sands with hydrocarbons were encountered. The drilling of well OGX-18 is still in progress and is expected to continue to a maximum final depth of approximately 2,800 meters.

The OGX-18 well, located in the BM-C-40 block, is situated approximately 95km off the coast of the state of Rio de Janeiro at a water depth of approximately 105 meters. The rig, Diamond Offshore’s Ocean Lexington, initiated drilling activities there on July 29.

For more information on the oil and gas industry in Brazil, turn to the Special Report on p. 54.

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AN INTERVIEW WITH
RICHARD W. MCCULLOUGH,
CHAIRMAN AND CEO,
PDC ENERGY

A black and white portrait of Richard W. McCulloch, Chairman and CEO of PDC Energy. He is a middle-aged man with short, dark hair, smiling slightly. He is wearing a light-colored suit jacket, a white shirt, and a dark tie with diagonal stripes. The background is a soft, out-of-focus landscape.

PDC Energy finds new home in Rockies, **repositions itself**

OIL & GAS FINANCIAL JOURNAL: PDC Energy, formerly Petroleum Development Corporation, has key strongholds in the Wattenberg Field and Piceance Basin of the Rocky Mountains. Recently, you've expanded your footprint in the Marcellus Shale, the Wolfberry, and in the Niobrara. What motivated this expansion and development?

RICHARD W. MCCULLOUGH: Our expansion into the Marcellus, Wolfberry, and the Niobrara was the result of an extensive strategic planning process we completed in 2009. We recognize that we need to add assets capable of delivering higher growth and higher capital efficiency. In addition, we seek to add assets that provide strong drill well returns even in a \$4 to \$7 per mcf gas world.

As we looked at our core assets, we concluded that we need to (1) drive down our costs in assets like Piceance; (2) accelerate development of our Wattenberg oil and liquid rich field; (3) exploit our Marcellus shale gas position; and (3) increase our oil and liquid rich mix by adding assets in the Permian Wolfberry and by de-risking and delineating our exciting new horizontal oil play in the Niobrara.

By building our portfolio with growth and higher return assets, along with our emphasis in 2009 on strengthening our balance sheet and hedging our gas exposures, we have positioned the company for a very promising future and as a result, the stock is up over 80% in the last year.

OGFJ: Approximately 80% of your company's production stream stems from natural gas. With the Wolfberry and Niobrara acquisitions and your current operating position in the Wattenberg, it appears that you're shifting toward a more balanced oil and natural gas portfolio. What is the genesis of this transition?

MCCULLOUGH: As we compete in a low gas environment, we have set a target to take our oil mix from 20% today to 35% in five years. Our existing Wattenberg vertical drilling program and re-frac opportunities, combined with our new positions and opportunities in the Permian and Niobrara make that a real possibility. We plan to

spend approximately \$140 million in 2010 developmental capex – up from \$68 million in 2009, with the majority of it being spent in Wattenberg. In addition, we are spending another \$100 million in acquisitions, mostly in assets with oil and high liquids content.

We are very fortunate in that we currently have about 200,000 acres in our four large project areas with only about 10,000 acres subject to drilling requirements to hold the leases. We believe this is a very strategic advantage and one of the reasons why we continue to look at additional JVs or drill to earn opportunities to earn our way into additional lease positions.

OGFJ: In 2010, you made the decision to redeploy a rig in the Piceance Basin. Why deploy resources into the Piceance in today's low-priced natural gas environment?



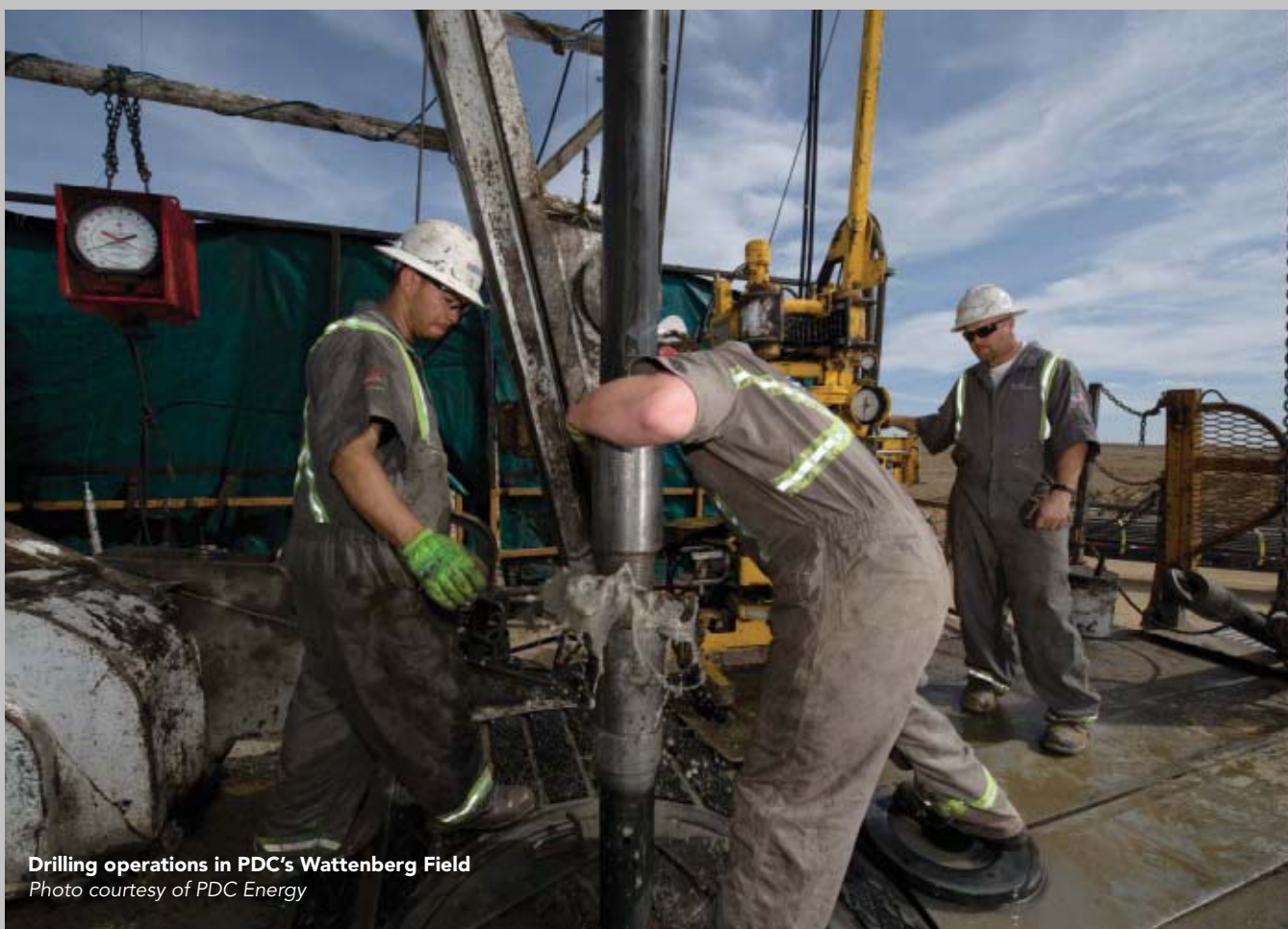
MCCULLOUGH:

While our drilling inventory is expanding and we have more options to drill higher return wells (i.e., Marcellus, Wolfberry, and Niobrara horizontals), Piceance is still a major project area for PDC with substantial reserves, low finding and development costs, and predictable production growth. We have a sizeable investment in the play and our

economics are attractive enough for us to drill today. We continue to pursue enhancement projects in our Piceance field designed to improve operating margins. These projects include our planned water disposal facility, super fracs, and other initiatives.

Given the current price environment, we will likely maintain a one-rig program in our Piceance field to maintain production and convert PUDs to cash-flowing PDPs. As gas prices rebound and our economics improve, we will likely ramp up our Piceance drilling. If some of our enhancement projects drive better economics, we hopefully could add another rig sooner.

OGFJ: Since assuming the helm at PDC Energy two years ago, you've moved the company's headquarters from Bridgeport, West Virginia; built a new management team; and expanded the company's portfolio of projects. Do you currently have the staff in place to execute on these changes, and what metrics will you use to measure success?



Drilling operations in PDC's Wattenberg Field
Photo courtesy of PDC Energy

MCCULLOUGH: We have a very capable team in place. Our board has been extremely supportive of our strategic plan, and as we have built our management team, we have added people who have many years of E&P experience gained in much larger organizations with track records of adding shareholder value.

In March of this year, we rolled out five new corporate metrics that we use to evaluate our success. We are very focused on driving shareholder value and have focused on key metrics that we think drive an E&P company's long-term value. We selected both operational and financial measures. Executive compensation is closely tied to how the company meets the targets for these metrics. We are now implementing a new bonus program for non-executives that will link their compensation to supporting business unit metrics.

The five metrics we use are: (1) cash flow per share; (2) Capital efficiency; (3) TTM Operating and G&A expense per mcf; (4) reserve replacement; and (5) annual production volumes.

OGFJ: PDC Energy is among the top in its peer group in capital efficiency and production replacement. The company also has low finding and development costs. Despite this, the company continues

to trade at a significant discount to its peer group. What are investors missing? And in a related manner, in July of this year, you announced a detailed three-year growth plan. How are investors better prepared with this information?

MCCULLOUGH: At our Analyst Day on July 15, we outlined several reasons why we believe we traded at a discount as well as the steps we are taking to improve our valuation.

The natural gas price declines of 2008 combined with substantial negative basis in the Rockies hurt all stocks of Rockies producers. But, it may have hurt PDC the most because of our extensive drilling inventory in the Piceance play. Like other small operators, we had to substantially cut our drilling capital, and as a result, our production began to decline in late 2009 and 2010.

In response, we became very focused on driving down our costs, improving our balance sheet, hedging our gas to protect our cash flows, and built out a top notch A&D team and began doing acquisitions to build our drilling inventory and production. Today we are drilling in all of our projects, and our production is again on a substantial growth pace. However, I

think there was a legitimate market sentiment regarding whether PDC could return to its growth years. Between 2005 and 2009, PDC grew production at a 34% annual rate. We know we can grow again, but we have to overcome this market perception and we understand it.

So, on Analyst Day, we rolled out our three-year plan showing how we could achieve an annual production growth target of 15% to 20% and potential reserve adds of 600 bcfe to over one tcf with very little external capital. In addition, we have redoubled our efforts to meet with investors and prospective investors. Our stock is up more than 80% in the past year, and we are one of the best performing stocks in our peer group. We believe our future growth plans are exciting and achievable.

OGFJ: In PDC's early days, the company used drilling partnerships to raise capital. In the past two years, however, you've started repurchasing those partnerships. What is the rationale behind this decision and how will PDC benefit when all of the drilling partnerships are repurchased?

MCCULLOUGH: Our business strategy is to grow our company through an acquire and exploit approach with an initial emphasis on driving down costs in our core projects through scale and operational efficiencies. The buying back of partnerships helps with both objectives.

At one time we operated as many as 75 partnerships. Today we operate 31, with most of them in our Piceance and Wattenberg fields. Current production net to the LPs is approximately 25 mmcf/d with proved reserves of about 125 bcfe. As operator, we obviously know these assets very well, and they are actually interspersed among our core PDC assets. To re-acquire the partners' interest in these wells, cleans up our story for investors, simplifies our financial reporting and eliminates a significant amount of administrative burden, consolidates our operations, makes the general maintenance of the wells more effective, and improves our per unit costs metrics of G&A, LOE, etc.

OGFJ: Natural gas prices continue to hover in the \$4 to \$6 per million cubic foot range. Must companies be prepared to operate in this price environment long-term? How well is PDC Energy equipped to operate in this pricing environment?

"By building our portfolio with growth and higher return assets, along with our emphasis in 2009 on strengthening our balance sheet and hedging our gas exposures, we have positioned the company for a very promising future and as a result, the stock is up over 80% in the last year."

MCCULLOUGH: We are committed and prepared to compete in a \$4 to \$7 price environment. One of the ways we do that is by continuing to drive down costs and improve efficiencies in our projects. Our drilling times in our Piceance and vertical Wattenberg program have improved, and we are seeing improving EURs in Wattenberg from improved fracture technology. Also, in Piceance we have a water disposal well being implemented in the third quarter which will further drive our costs down in that play. And, finally, our increasing oil mix and economies of scale associated with our planned growth will be huge positive factors in the future.

OGFJ: Earlier this year, EOG Resources and Noble Energy announced successful drilling results in the Niobrara. More importantly, Noble announced that it had drilled horizontally in areas where they had previously drilled vertical wells. What is the impact of this to PDC's 70,000-acre position? What is your company's upside potential in the Niobrara?

MCCULLOUGH: The EOG well drilled in late 2009 and the early results announced by Noble have everyone in the play, including us, very excited. If you have seen the maps that Noble used to show its initial four-well results, three of these wells are in the northeast quadrant of the core Wattenberg field where we operate. Their



First horizontal Marcellus well in the Appalachian Basin
Photo courtesy of PDC Energy

"We became very focused on driving down our costs, improving our balance sheet, hedging our gas to protect our cash flows, and built out a top notch A&D team and began doing acquisitions to build our drilling inventory and production."

fourth well, the Gemini, was their best and was drilled among previously developed vertical wells.

We are in the early stages of evaluating our core Wattenberg position and will be drilling our first horizontal wells on 5,600 acres that we recently acquired. Based on other operators' results, our initial estimates are that there may be as much as 13 tcf of gas equivalent in place on our acreage. Using a 5% recovery factor, which seems to be the early norm for the play, could put total reserves in the 650 bcf range. PDC's total IP reserve base at the end of 2009 was a little over 700 bcf and these horizontal Niobrara wells have a 70% higher capital efficiency factor than our existing vertical Wattenberg wells that generate 40% to 45% IRRs in today's markets.

Suffice it to say, the horizontal Niobrara opportunity could be a game changer for PDC. It is very important to note that our three-year growth targets of 15% to 20% do not yet include any volumes from this horizontal play. We

will update these projections once we have initial results from our first wells.

OGFJ: The Marcellus Shale is perhaps the largest natural gas play in North America. Along with your joint venture partner, Lime Rock, you control more than 58,000 acres in Pennsylvania and West Virginia. What is the status of your horizontal drilling program?

MCCULLOUGH: We've drilled eight vertical wells, seven of which were drilled in West Virginia. The program was highly focused on obtaining geologic information through coring and confirming rock thicknesses, porosity, the pressure regime and gas in place estimates. We were very encouraged by these results, and it confirmed that our best results should come from a horizontal drilling program, which we began earlier this year.

To date we have drilled and completed three horizontal wells in West Virginia, which are currently on flow back and clean up. We have recently executed a midstream capacity arrangement and are negotiating a two-year drilling rig contract.

OGFJ: It seems that PDC will be very busy in the next few years. Thanks very much for taking the time from all this to talk to us. **OGFJ**



From left to right: Lance Lauck, senior vice president, business development; Richard McCullough, chairman and CEO; Gysle Shellum, CFO; Daniel Amidon, general counsel; Barton Brookman, senior vice president, exploration and production
Photo courtesy of PDC Energy

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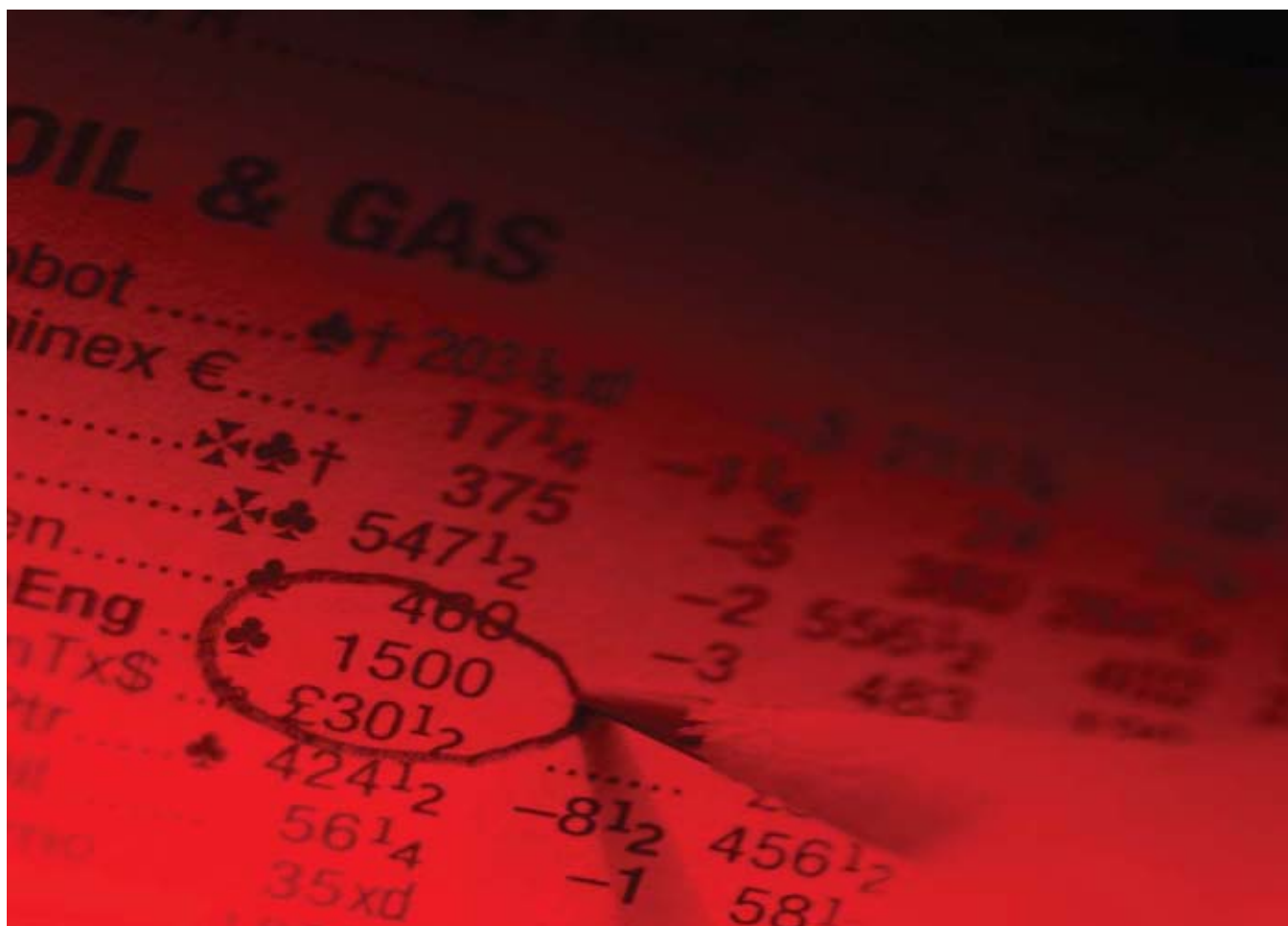
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Some simple rules for investing in oil and gas private placements

Stephen I. Burr, *Foley & Lardner LLP, Boston*

As the recession recedes, the focus of individual accredited investors will likely shift from concern over protecting assets to concern over inflation and increasing taxes. Tax-advantaged investment opportunities with attractive current returns and/or significant potential residual value will compare well to low-yielding, fixed-return bonds; volatile stocks; or real estate or private equity investments that involve use of leverage to achieve desired return on equity.

After a few tough years, investment programs based on upstream oil and gas assets (and perhaps midstream as well) should return to favor with individual accredited investors. Many of these investors will likely be new to the oil and gas industry. While some will gravitate toward the liquidity of the pass-through publicly traded structures such as master limited partnerships (MLPs) and royalty trusts, others will

prefer the greater simplicity and transparency of private placements.

Here are a few simple guidelines for accredited investors new to oil and gas investing through the private placement marketplace:

Types of offerings

Private placements of oil and gas interests typically involve either royalty or “working” interests and are organized either as a direct participation/specified asset offering or a blind pool.

Royalties

Royalties are a landowner’s interest in the cash flow generated by oil and gas production on that landowner’s property. The lessee/operator has an obligation to develop the prop-

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erty, to bear all of the development costs and risks, and to pay the landowner “rent” (i.e. a royalty) in the form of a percentage of net cash flow. Once a stable stream of revenue is established the landowner may elect to monetize his interest by selling percentages of his royalty interests, or even “overriding” royalty interests (i.e. royalty interests with a preferred right of payment over other royalty interests) to third parties.

Working interests

The working interest holder/lessee has both the right and the obligation to drill, operate and maintain wells on the leased property. He retains whatever interest in cash flow is left after paying all of the costs of drilling, operating and maintenance, as well as royalties to the landowner.

small percentage of the direct interests in the property as part of his compensation for structuring the offering.

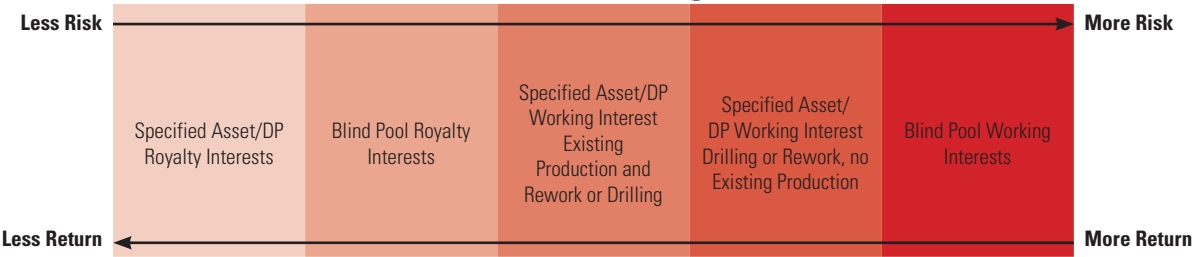
Blind pools

Blind pool offerings are offerings to raise investment dollars to be deployed on certain types of assets, but without the assets being specifically identified. In these offerings the investors are relying on the skill of the acquisition team of the sponsor. They are structured as funds, using a limited liability company or limited partnership structure, with the sponsor as manager or general partner.

Structure risk/reward

Figure 1 shows the general rule of thumb for risk and reward in oil and gas investment structures.

Fig.1: General rule of thumb for risk, reward in oil and gas investment structures



The holder of the working interest may operate the property himself, i.e. act as his own general contractor, or may delegate that responsibility and risk to a third-party operator.

Offerings of working interests can occur at different stages of development. The land subject to the working interest may be completely undeveloped, that is have no existing wells, partially developed but with more drilling opportunities or partially developed with opportunities primarily to improve production from existing wells (known as “re-works”).

Specified properties/direct participation

Oil and gas offerings, particularly by newer sponsors, are typically based on specified properties. In other words, the oil and gas company sponsor tells you exactly what assets are going to be purchased with your money. This type of offering in turn can be structured in two ways. The sponsor may form a fund, typically a limited liability company or limited partnership of which it acts as manager or general partner, which owns the assets and sells membership or limited partner interests to investors, or it may sell direct participation interests.

Purchasing a direct participation interest is the equivalent of getting a deed. The sponsor is selling you a direct interest which you can sell, borrow against or devise to heirs. The sponsor typically offers to “manage” the interest for you, i.e. collect and distribute the revenue and keep an eye on the operator, but you are not obligated to take advantage of this offer. The sponsor may also retain a

Advantages of oil and gas investing

Investing in oil and gas interests shares common characteristics with investing in other types of alternative investments, the most obvious being real estate, in particular that such an investment is typically specific to a certain type of asset, looks to provide a substantial return through a combination of current income and appreciation upon sale and is generally subject to legal and practical limitations on free transferability.

However, there are some characteristics of oil and gas investments generally which differentiate it from real estate and other alternative investment strategies, including the following:

Absence of leverage

Debt or “leverage,” is rarely used in oil and gas offerings. While real estate investors are subject to foreclosure risk when loans default or cannot be refinanced on maturity, the oil and gas investor simply tolerates a reduced return on equity, and has no personal liability on recourse debt or so-called non-recourse carve-out guaranties.

Diversification

The benefits of diversification are notable primarily in royalty offerings, where risk can be spread through packages of royalties across different fields, counties and states, across predominantly oil or predominantly gas producing properties (or a balanced mix of both), across relatively mature and less developed properties and across a broad range of qualified operators and distribution networks.

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\$60,000,000 TAMMANY OIL & GAS LLC SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN AGENT AND SOLE LENDER MARCH 2007	\$36,500,000 ALDEN RESOURCES LLC SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN AGENT AND SOLE LENDER JANUARY 2007	\$50,000,000 RUBICON ENERGY PARTNERS, LLC SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN AGENT AND SOLE LENDER NOVEMBER 2006	\$325,000,000 ENERGY XXI GULF COAST, INC. SECOND LIEN TERM LOAN PARTICIPANT SEPTEMBER 2006	\$15,000,000 BSR ALTO, LLC SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN AGENT AND SOLE LENDER AUGUST 2006
\$4,000,000 RUBICON ENERGY PARTNERS, LLC PURCHASE OF MEMBERSHIP UNITS PURCHASER JULY 2006	\$12,000,000 CROSSROADS ENERGY, LP SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN AGENT AND SOLE LENDER JUNE 2006	\$95,000,000 RESACA EXPLOITATION, LP SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN, SENIOR SECURED TERM LOAN AND SENIOR SUBORDINATED SECURED CONVERTIBLE TERM LOAN ARRANGER AND AGENT MAY 2006	\$25,000,000 RABBIT ISLAND, L.P. SENIOR SECURED REVOLVING CREDIT FACILITY ARRANGER AND AGENT MARCH 2006	\$17,000,000 PRENANCE BASIN PROPERTIES, LLC SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN AGENT AND SOLE LENDER JANUARY 2006
\$50,000,000 CHROMA EXPLORATION & PRODUCTION, INC. SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN ARRANGER AND AGENT SEPTEMBER 2005	\$19,660,000 CHROMA EXPLORATION & PRODUCTION, INC. SERIES A PARTICIPATING CONVERTIBLE PREFERRED STOCK PURCHASER \$2,000,000 SEPTEMBER 2005	\$25,000,000 MILLENNIUM OFFSHORE GROUP, INC. SENIOR SECURED BRIDGE LOAN AGENT AND SOLE LENDER AUGUST 2005	\$20,000,000 TERRAMAR ENERGY, LLC SENIOR SECURED MULTIPLE-ADVANCE TERM LOAN AGENT AND SOLE LENDER MAY 2005	\$59,050,000 CRESCENT RESOURCES, LLC SENIOR SUBORDINATED SECURED TERM LOAN AND SENIOR SUBORDINATED SECURED BRIDGE LOAN AGENT AND SOLE LENDER DECEMBER 2004

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The opportunities for diversification are less evident in working interest offerings, although some sponsors are including more than one opportunity in an offering, and mixing existing production, rework and drilling opportunities into the same package.

Transferability

There is a long history of fractionalized oil and gas interests. Direct participation royalty interests are generally freely transferable without the types of securities law concerns and other obstacles which make fractionalized real estate interests difficult to transfer. Working interests and interests in funds are less transferable.

Tax benefits

Many oil and gas programs, particularly working interest programs, involve significant tax benefits. Be cautious of programs that appear to “push the envelope” on tax benefits, and always review the offering with your personal tax advisor before investing.

Risks common to oil and gas investments

Outlined below are some of the risks unique to oil and gas investing, both with respect to royalty interest and working interest offerings. Most of these risks are common to both the royalty and working interest offerings. Royalty interests are essentially income strips, more separated from the risks inherent in operating and developing oil and gas wells than working interests. On the other hand, holders of royalty interests tend to have less control over what happens on an oil and gas property than holders of working interests. If additional production is important this can be a negative, although generally the interests of royalty holders and operators are aligned.

Working interests carry the potential for more reward and therefore not surprisingly more risk. The risks inherent primarily in only working interests are specifically identified below. The first two risks listed below are the most significant for both royalty and working interest offerings.

Price volatility

Real estate investors are used to cycles in the value of real estate, typically spread over years with a few key indicators, e.g. overbuilding, interest rates, etc. Oil and gas prices are much more volatile over much shorter periods of time than real estate, and can be affected by many more factors, e.g. foreign wars or insurrections, decisions by cartels, hurricanes, technological advances, pollution concerns, etc. An offering involving primarily natural gas wells projected to produce a 10% return assuming natural gas prices at \$5/million btu can look pretty sad if prices fall to \$2/million btu. Here are a few ways to mitigate that risk:

- *Take a long view.* As with real estate, an investor looking for a quick buck is likely to be disappointed. If you

believe that over time oil and gas prices should at least keep pace with inflation, and you have patience, you will sleep better.

- *Look for balance.* Oil and gas prices do not always move in tandem (witness the last two years). Give some more weight to offerings with a combination of oil and gas production.
- *Sensitivity analysis.* The offering document for an oil and gas deal should have a sensitivity analysis, assuming production at current levels, based on oil and gas prices at different levels. If you are trying to achieve an 8% return at \$50/barrel oil and \$4/million btu gas and today’s prices are \$70 and \$5 respectively, you have some room for error.

Depletion and decline

Perhaps the largest risk, which is also the least understood in oil and gas investing, is the risk of depletion. Oil and gas wells are depleting assets. In other words, all wells run dry over some period of time. It is important to understand not only when the wells are likely to be fully depleted, but also what the rate of decline is. Thirty percent (30%) less production in the second year will of course dramatically affect the yield to investors even if prices are stable. Unlike real estate, there are no alternative uses for the assets in these offerings. They either produce or they do not. Here are a few ways to mitigate that risk:

- *Diversification.* Wells in certain fields, counties, states and regions deplete faster than others. Oil wells and gas wells can also deplete at different rates within the same field. The best protection against these variances in depletion rates is diversification. Look for portfolios being offered which have product and geographic diversification.
- *Replacement wells.* Offerings which include interests in properties where existing wells are widely spaced afford opportunities for additional drilling. The risk associated with this drilling is not being assumed by the investors, at least in royalty interest offerings, but they can reap the benefit if the new wells are successful. If old wells are regularly supplemented by new, “in-fill” wells, production can reasonably be projected to remain stable for extended periods.
- *Secondary or Tertiary Recovery.* Waterflood, carbon dioxide injection or injecting fluids to fracture oil or gas bearing rock formations are ways to stabilize or increase production. They also involve additional costs, regulatory requirements and environmental concerns.
- *Engineering.* Offerings should be supplemented by internal and third-party engineering. Great strides have been made in recording the historical performance of wells or fields and projecting that performance into the future, as well as in three-dimensional mapping of underground formations. Look for this information, and review it with someone who has the appropriate technical expertise.

Operating risk (primarily a working interest risk)

As the name implies, working interests involve the risk and reward of increasing production, whether by drilling new wells or improving the production of existing wells. The investors' capital in these deals pays not only for the real estate interest, i.e. the right to drill, but also in many cases for the cost of drilling.

In a royalty deal the investor is essentially buying an income strip in producing wells, and the risks are primarily price volatility and depletion. The price paid for the royalty interest is presumably closer to the actual value of the asset being purchased than the amount invested in a working interest deal.

Another way of saying this is if you pay the cost of exploration, and the exploration is unsuccessful, you have a greater chance of losing a significant portion of your investment in a working interest deal than in a royalty interest deal. You also have a greater upside.

In addition, state and federal laws impose potential liabilities on holders of working interests which are not imposed upon holders of royalty interests, e.g. environmental, property damage, personal injury, plugging, and subsurface damage. It is difficult to separate the investor from personal liability for these risks. Some ways to mitigate these risks with respect to working interests are:

- *Established fields.* Look for offerings focused on historically successful locations in historically successful fields.
- *Costs.* Understand what costs you are being asked to cover, whether those costs are reasonable and capped by a creditworthy contractor, and whether the capital being raised will cover those costs with a reasonable margin for error. No one likes to receive notice of an additional capital call.
- *Tax benefit offsets.* The increased economic risks in working interest deals can be *partially* offset by increased tax benefits. Caution: do not count on these without expert tax advice, as the rules governing such benefits are more complex than those for real estate, and in any event never invest based only on apparent tax benefits. In particular, trying to assure maximum tax benefits may be inconsistent with trying to shield the investor from personal liability.
- *Track record.* Nothing is a better predictor of future success than past performance. Look for a table of prior performance on the sponsor in the offering document, and make sure that that performance is recent and presented in a transparent manner.

Quality of sponsors

The segment of the oil and gas industry offering oil and gas interests to private investors as securities tends to be non-institutional and thinly capitalized, without audited financial statements. Many of the sponsors are newly formed with little track record, whether in terms of delivering the returns they project, asset management, financial reporting or investor relations. A few suggestions:

- *Experience.* Some experience is better than none. Try to find sponsors who have some, even if limited, history of delivering what they promise. If they do not have any history, view the projections with additional caution.
- *Breadth and depth of resources.* Look for sponsors who have made a substantial investment of time and money to enter the business, and have not only acquisition and sales people, but due diligence, asset management, financial reporting, and investor relations personnel.
- *Third-party reports.* Look for third-party sponsor and project due diligence reports done by credible third party due diligence firms, as well as third-party engineering.
- *Avoid Ponzi schemes.* A good way to minimize the risk of being victimized by Ponzi schemes is to request a letter from the principals of the sponsor in which they certify that (i) any investor funds will only be used to acquire assets and pay the costs of the offering; and (ii) any distributions made to investors will be paid only from income generated by the assets. Be very cautious of any offering that projects an immediate high return or suggests that the return is "guaranteed."

"Many oil and gas programs, particularly working interest programs, involve significant tax benefits. Be cautious of programs that appear to 'push the envelope' on tax benefits, and always review the offering with your personal tax advisor before investing."

Who is doing the selling?

Look for offerings that are being marketed either through a credible managing broker dealer or through securities representatives who have made a commitment to understanding the industry. Historically, the greatest portion of private oil and gas offerings have been sold under exemptions in the securities laws by sponsor principals. While this approach eliminates the cost of broker-dealer commission, which can run 8% to 10% of the equity raised, they significantly increase the risk, as the only information you are relying on comes from the seller.

Obviously no investment is without risk, but by following these simple guidelines risk can be reduced significantly. **OGFI**

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INTERVIEW WITH J. RUSSELL PORTER, PRESIDENT AND CEO OF GASTAR EXPLORATION

Sale of Australian assets helps transform Gastar

Don Stowers, *Editor, OGfJ*

OIL & GAS FINANCIAL JOURNAL: About a year ago, Gastar sold its assets in Australia to Santos for about \$240 million. This enabled your company to pay down debt and fund US projects. Can you talk a little about the importance of this sale and what's in store for Gastar going forward?

J. RUSSELL PORTER: We sold those assets at a price that was the equivalent of our entire enterprise value at the time. We didn't sell any proven reserves, and we didn't lose any cashflow or production. Selling that asset gave us the chance to completely redefine and reposition the company by using the proceeds to pay down all our debt, continue to expand in the Marcellus, and continue to exploit the Deep Bossier. I don't think it's an overstatement to say that, had we not done that, we probably wouldn't be here in the same way we are now.

OGfJ: What kind of assets did you have in Australia?

PORTER: We were involved in a shallow coalbed methane project.

OGfJ: How exactly did you redeploy the capital from this sale?

PORTER: The first thing we did after we paid the Australian taxes that were due was to use the proceeds almost dollar for dollar and reduced our debt to zero. We then, in November of last year, sold a high-pressure gathering system that we had constructed in East Texas and realized about a five times return on investment on that. We realized about a six times ROI on the Australian sale. So with

those two actions, we had the liquidity that I think gave the market a lot of comfort. We continued to build our position in the Marcellus Shale and continued to drill the Bossier play in East Texas.

OGfJ: Which of your assets would you describe as your core area – the Bossier or the Marcellus? I know you also have some assets in the Powder River Basin.



PORTER: We do have some assets in the Power River Basin, but they're very minor. They would be a candidate for divestiture in the right market. Right now, you'd have to say that the East Texas Bossier play and, hopefully, the developing Eagle Ford play on our acreage is core. The Marcellus is just behind that based on the amount of capital spent. We'll spend more capital in East Texas this year than in the Marcellus, but next year we'll probably be close to equal capital deployed in both areas. The Marcellus has a tremendous amount of upside – 35,000 net acres we have there. We think this easily exposes us to a TCF net to the company. So I really see Gastar continuing to transform into more of a resource-oriented type company as we put more of our capital into the Marcellus, as opposed to the East Texas plays.

OGfJ: Do you have Canadian assets?

PORTER: We're a Canadian corporation by domestication, but we never had Canadian assets. We're a US-reporting company to the SEC. We do not report to the Canadian authorities. We're based in the US. All our assets are in the US. All our employees are US citizens.

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OGFJ: But aren't you listed on the Toronto Stock Exchange?

PORTER: Not any more. We delisted from the Toronto exchange when we sold the assets in Australia. So we're only listed on the NYSE-AMEX Exchange.

OGFJ: Can you describe your holdings in the Bossier and Marcellus? And the second part to that question is – are your assets in predominantly dry gas areas or liquids-rich areas in each of those two plays?

PORTER: First of all, we have about 16,000 net acres in East Texas, and I mentioned that we have 35,000 in the Marcellus. In the Marcellus, we're concentrated in the northwest corner of West Virginia, in Marshall, Wetzel, and Monongalia Counties. And that is in the liquids-rich portion of the play. We also have a concentration of acreage in Butler County, Pennsylvania, and also in Clarion and Clearfield Counties. That also is a liquids-rich part of the play. We're also developing a holding in the Fayette-Somerset area of Pennsylvania, which is dry gas.

"We sold that asset for a price equal to our enterprise value. So it was a just matter of having to prove the value to the world by a sale rather than having it demonstrated in our stock. Had that value been reflected in our stock, we would have gone out and sold stock and paid off the debt."
– Russ Porter

OGFJ: What about the Eagle Ford, which you mentioned earlier?

PORTER: We believe that we have some meaningful Eagle Ford potential that's on our existing acreage in Leon and Robertson counties in East Texas, where we're pursuing the Bossier play. We've seen meaningful Eagle Ford shows as we've drilled through it to these deeper Bossier wells, and there's been some recent industry activity very near us that has resulted in Eagle Ford liquids production. We're going to test the Eagle Ford potential on it with a well, probably in the next 30 to 60 days.

OGFJ: When you mention Eagle Ford, most people think of it in South Texas.

PORTER: We've seen the Eagle Ford play extending up into the area where we are in East Texas. Historically, that same stratigraphic section has been referred to as the Woodbine in East Texas.

OGFJ: How much of your current production is natural gas versus liquids?

PORTER: We're at 99% natural gas right now, but we have a goal of bringing more liquids production into our portfolio, and that's one of the reasons why we're pursuing the Eagle Ford on our Texas acreage.

OGFJ: You're not alone. With current market prices, quite a few companies are trying to change their production mix to include more liquids. Companies like Chesapeake and Petrohawk are increasingly looking to add more liquids to their production.

PORTER: We're not out trying to compete with those guys, who are paying huge dollars per acre to add liquids to their portfolios. We're really focused on exploiting what we've got now. However, we think we have a potentially impactful additional dimension to our company if we can prove up the Eagle Ford on our East Texas acreage. On our existing acreage today, we would have about 125 potential locations for Eagle Ford wells.

OGFJ: Is Gastar the operator in most of your assets?

PORTER: Yes we are.

OGFJ: Do you partner with anyone or have any joint venture agreements?

PORTER: We have a couple of private companies that are partners with us in East Texas. Our average working interest is just over 50% in the Deep Bossier play. We have been approached and have had some discussions with potential joint venture partners in the Marcellus.

OGFJ: So are you the operator in all the areas where you have assets?

PORTER: All the areas except the Powder River Basin, but that is just a minor asset for us.

OGFJ: Are you doing vertical and horizontal drilling in the Bossier and Marcellus?

PORTER: In the Bossier, it's strictly vertical because that's way too deep for any of the horizontal tools to function. We are drilling horizontal wells in East Texas to test the Eagle Ford and to test the Glen Rose limestone. And we're looking at the potential to drill horizontal wells in the Upper Bossier formation. In the Marcellus, we drilled our first vertical well in Wetzel County, West Virginia, and got very good results. It came online at 1.5 million cubic feet per day and 120 barrels of condensate a day. We will test most of our areas in the Marcellus with a vertical well, but our goal is horizontal development and we should be spudding our first operated horizontal well in the Marcellus prior to the end of this year.

OGFJ: Do you have sufficient expertise drilling horizontal wells in the Marcellus? I know you've done this in East Texas.

PORTER: Yes. The horizontal wells we've drilled in East Texas are much more complicated. They're deeper with higher temperatures and higher pressures. We've hired a general manager for our Marcellus assets who has experience in managing Appalachian drilling operations. Our drilling team and completions team here in Houston has horizontal drilling experience. The operational aspects of the physical drilling of wells in the Marcellus are pretty easy to manage. The more difficult part of that play is the permitting and the mid-stream infrastructure type issues.

OGFJ: Do you have projections for the next quarter?

PORTER: We don't provide a cashflow or an earnings guidance. We did project production in the 21 to 22 million cubic feet a day range on a net basis, which would be significantly higher than the second quarter due to some operational issues with a couple of our high-rate wells in East Texas, which have all been resolved. So third-quarter production will exceed second-quarter figures, and we expect the fourth quarter will be even higher.

OGFJ: It will help if commodity prices rise during the quarter.

PORTER: Well, that's why everybody is chasing oil.

OGFJ: What effect did hedging have on your bottom line and what impact will it have in the next quarter?

PORTER: Our hedging program was quite beneficial in the most recently reported quarter. It took our realized price of from about \$3.50 per Mcf up to about \$4.62 per Mcf. We're about 50% hedged into 2011 with positions that establish around \$6 floors and some \$6 - \$4 short-puts. So basically, if we get down to \$4, we get \$6. And below \$4, we get market plus \$2. We've capped the price

in the \$7.50 to \$8 range on a portion of that, and I pray every night we lose money on those. Going forward, hedging will continue to be a part of our strategy but not because of a high leverage level. Relative to other companies in our peer group, we will be under-levered. We are doing it strictly to assure that we will have a minimal level of cashflow to reinvest in these very attractive projects.

OGFJ: What was the reaction of the analysts to Gastar's sale of its Australian assets with your six times ROI on that and five times ROI on the sale of your East Texas gathering system?

PORTER: The reaction from the analysts and from the market was very positive. Most of the analysts agreed with our assessment that this was a transformational series of events for the company. It took us from being one of the more levered companies to one that is debt free. Honestly, I have to tell you that most of the world had probably decided that we were going to have to go through a reorganization to clean up the balance sheet, and we were able to essentially save 100% of our equity value for our equity owners, pay off all our debt, and reposition the company. So it's a turn of events that we are quite proud of.

OGFJ: That's great. So Santos turned out to be a white knight for you.

PORTER: Well, we always felt that those assets in Australia had value, and we felt the value was not reflected in our stock price. We sold that asset for a price equal to our enterprise value. So it was a just matter of having to prove the value to the world by a sale rather than having it demonstrated in our stock. Had that value been reflected in our stock, we would have gone out and sold stock and paid off the debt. We were either going to do through the equity market or through the asset market, and the asset market was much more lucrative than the equity market.

OGFJ: Thanks for taking time to talk with us, Russ. **OGFJ**



A rig sits atop the company's Hilltop location in East Texas.
Photo courtesy of Gastar.



Alaska's oil and gas production tax severely limits upside profit potential

Roger Marks, *Consulting Petroleum Economist, Anchorage, Alaska*

Alaska's oil (and gas) production (or severance) tax, called "ACES" (Alaska's Clear and Equitable Share), was enacted in 2007 (effective July 1 of that year). The tax has a base tax rate of 25% on the net value of oil, the value after all exploration, development, production, operating, and transportation costs are deducted.

There is also a progressivity element (calculated monthly) that is added to the base tax rate. Progressivity is the practice of increasing the tax rate as income increases. In ACES the tax rate rises as per barrel net value increases, and is applied to the total net value. Progressivity starts as per barrel net value rises above \$30/bbl. (At current [summer 2010] costs [about \$25/bbl] this is equal to about a \$55/bbl US West Coast Alaska North Slope [ANS] crude oil market price.) Progressiv-

ity rises at a rate of 0.4% for every per barrel dollar of net value above \$30. Above \$92.50/bbl in net value the progressivity rate increase drops to 0.1%/dollar of net value. The formula for the total tax rate, including the base rate and progressivity is:

$$0.25 + ((\text{Net per barrel value} - \$30) \times .004)$$

ACES also contains a 20% tax credit for capital costs, with potential greater credits for exploration depending on location. For example, let's assume the following:

- 100 barrels sold on the US West Coast
- ANS West Coast price of \$50
- Transportation cost (pipeline and marine shipping) of \$5
- Upstream (exploration, development, production) costs of \$20: \$10 capital and \$10 operating
- No royalties (for simplification)

The net value of the oil would be:
 $100 \times (\$50 - \$5 - \$20) = \$2,500$

The per barrel net value would be:
 $\$2,500 / 100 = \$25/\text{bbl}$

Since this is less than \$30/bbl there is no progressivity and only the base tax rate would apply. Thus the tax before credits would be:
 $.25 \times \$2,500 = \$625$

The capital credits would be:
 $.20 \times \$10 = \$200$

The tax net of credits would be:
 $\$625 - \$200 = \$425$

Now let's say the price of oil goes up to \$70.
The net value of the oil would be:
 $100 \times (\$70 - \$5 - \$20) = \$4,500$

The per barrel net value would be:
 $\$4,500 / 100 = \$45/\text{bbl}$

Since this is more than \$30/bbl there would be a progressivity surcharge. The surcharge would be:
 $(\$45 - \$30) \times .004 = .06$

Thus 6% would be added to the base tax rate of 25% for a total tax rate of 31%. Thus the tax before credits would be:
 $.31 \times \$4,500 = \$1,395$

The capital credits would be:
 $.20 \times \$10 = \$200$

The tax net of credits would be:
 $\$1,395 - \$200 = \$1,195$

Table 1 summarizes this example. Notice that the progressivity surcharge applies to the entire net value. Also notice that as the price increased 40% (from \$50 to \$70), the tax increased 181% (from \$425 to \$1,195).

Bracketed vs non-bracketed progressivity

Progressivity is not unique among oil and gas jurisdictions, or even among non-oil taxes. In fact, the US personal income tax code contains progressivity. The tax rate for a single taxpayer in 2009 is shown in Table 2:

No matter how much money you make, the first \$8,350 of taxable income pays at a 10% rate. The next \$25,600 pays at a 15% rate, and so forth, until if you have more than \$372,950 in taxable income, only anything above that amount pays at the highest rate.

Nearly all progressive tax systems, domestic and international, oil or non-oil, operate like this. There

Table 1: Summary of example tax calculation

Row	Item	\$50 ANS Market Price	\$70 ANS Market Price
1	Barrels	100	100
2	ANS US West Coast market price	\$50	\$70
3	Market value (R1 X R2)	\$5,000	\$7,000
4	Transportation cost @ \$5/bbl (R1 X \$5)	\$500	\$500
5	Upstream capital cost @ \$10/bbl (R1 X \$10)	\$1,000	\$1,000
6	Upstream operating cost @ \$10/bbl (R1 X \$10)	\$1,000	\$1,000
7	Net value (R3 – R4 – R5 – R6)	\$2,500	\$4,500
8	Net value per barrel (R7 / R1)	\$25	\$45
9	Base tax rate	25.00%	25.00%
10	Progressivity rate (R8 - \$30) X .004	0.00%	6.00%
11	Total tax rate (R9 + R10)	25.00%	31.00%
12	Tax before credits (R7 X R11)	\$625	\$1,395
13	Credits (.2 X R5)	\$200	\$200
14	Total net tax (R12 – R13)	\$425	\$1,195

are incremental income brackets and only the amounts in the higher brackets pay the higher rates. The tax rates for the income made in the lower brackets never change.

Table 2: US tax rate for single taxpayer

First	\$8,350	10%
Next	\$25,600	15%
Next	\$48,300	25%
Next	\$89,300	28%
Next	\$201,400	33%
Anything over \$372,950		35%

With ACES, however, there are no brackets; as the price goes up, the new higher tax rate applies to the total net value, so the tax increases for every single dollar of net value. So if there is \$1/bbl in net value, the tax rate would be just the base rate of 25%. And if there is \$30/bbl in net value, the tax rate would be just the base rate of 25%. But if net value goes to \$31/bbl, progressivity kicks in, and the higher rate applies not only to the 31st dollar, but to all the previous first 30 dollars as well.

Figure 1 shows what happens to the taxation on the first dollar of value as net value per barrel goes up. It is difficult to find any other progressivity structure anywhere that operates similarly. (See International Comparison section.)

Marginal tax rates

The result is that as prices go up, and the tax rate goes up, the higher tax rate applies to every previous dollar of value, not just the last one. Whereas Figure 1 illustrated what happens to the first dollar, we can also examine what happens simultaneously to all the previous dollars of value together as prices go up.

Fig. 1: What happens to the first dollar of value under ACES

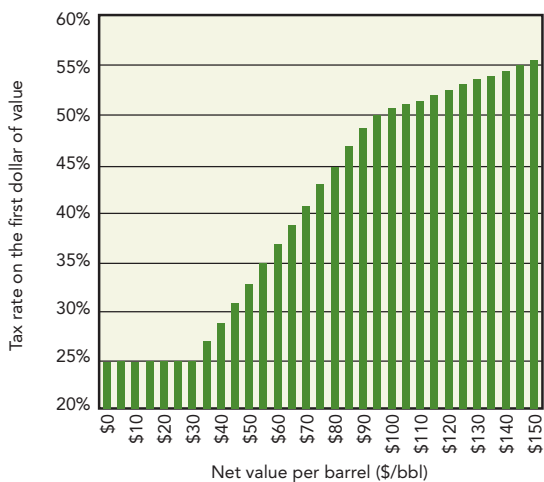


Fig. 2: What happens to all subsequent dollars of value under ACES: Marginal tax rate

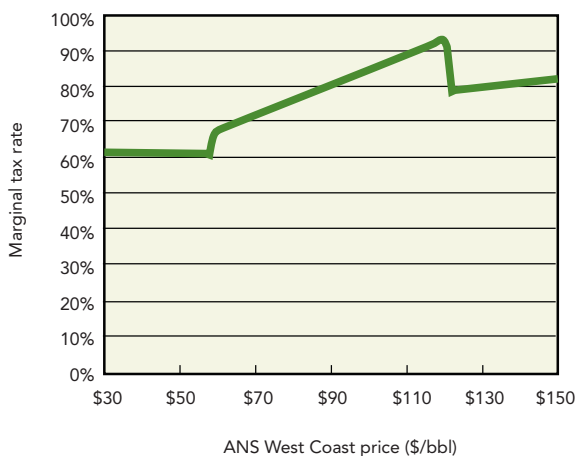
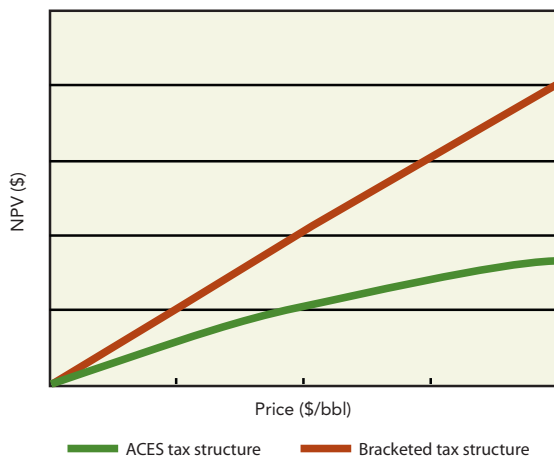


Fig. 3: Net present value: ACES vs. Bracketed tax structure



This is shown through the marginal tax rate; when the price of oil goes up a dollar, the marginal tax rate is how much of that dollar goes to government. Under the ACES structure, when price goes up a dollar, the increased taxes from all the previous dollars get rolled into the last one, and the marginal tax rate is ever increasing.

This is shown on in Figure 2. The graph shows the marginal tax rate at various ANS *market prices*. (Note that Figure 1 was based on *net values* [market prices less costs.]) These were derived from publicly available cost data from the Alaska Department of Revenue, amounting to about \$25 per barrel. (Estimated capital costs are \$10.20/bbl, operating costs are \$9.30/bbl, and transportation costs are \$5.79/bbl.) The payments to government include royalties, property tax, and state and federal corporate income taxes, as well as the production tax (which is the biggest piece: see Appendix).

At the current (summer 2010) oil market price of about \$80 per barrel the marginal tax rate is 77%. This means as price goes from \$79 per barrel to \$80 per barrel the government would get 77 cents out of that dollar increase, 47 cents of which is the production tax. (The other 30 cents are 13 cents for the royalty and 17 cents for the income tax. (See Appendix for depiction of the detailed derivation of the marginal tax rate.)

(Because the rate of increase drops from 0.4% to 0.1% when net value exceeds \$92.50 [a market price of about \$120], the marginal tax rate declines to about 80% at that point and then starts increasing again, albeit at a slower rate.)

The rate increases are entirely attributable to the production tax. The property tax is based on property value so it is a flat nominal amount regardless of price (about \$1.50 per barrel). The royalty is a fixed percentage of the wellhead value (market price less transportation costs). The state and federal corporate income tax rates are effectively flat nominal percentages of pre-production tax income as well, and since the production tax is deductible, they decrease as the production tax rate increases.

A large share of the increase in value is captured by the government. Thus the producer does not get that much more at a market price of \$80 than it received at \$70 prices. Under these cost assumptions the marginal tax rate peaks at 93% at \$120 per barrel market price.

Figure 3 conceptually illustrates the potential difference directionally in net present value between tax structures where progressivity is bracketed and the ACES tax structure where higher tax rates apply to all previous dollars of value. In the latter the returns to the producers may be greatly contained at high prices.

High marginal tax rates can also create non-productive spending. Progressivity works in reverse as price goes down. As market price declines from \$80/bbl to \$79/bbl, 77 cents out of the decrease is realized by the

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government. Net value also declines as spending goes up, as well as when prices go down. So if prices are at \$80/bbl, if there is an extra dollar of spending, again, the government realizes 77 cents less.

Insofar as the marginal tax represents what government gets as price goes up, it also represents what government gives up as either price goes down or costs go up. Regarding the latter, the marginal tax rate represents the government contribution to spending.

Thus high marginal tax rates create an incentive to “gold-plate,” spending more than you ordinarily would because someone else is picking up most of the tab. Although the incentive is present whenever the extra value of an item exceeds the after-tax cost actually paid, the higher the marginal tax rate the more important this effect.

Curtailment of upside potential

Investment decisions for oil production activity depend, of course, on a myriad of factors, price being one of the most important. And oil price is notoriously volatile.

Accordingly, investment decisions are heavily cloaked in uncertainty. Thus rather than analyze a potential project at one price, investors will often look at performance over a range of prices. For many oil companies this will be conducted stochastically, often through a Monte Carlo, or similar simulation method.

In such practices, the input for price will consist of a distribution of expectations over a spectrum of probabilities. One such hypothetical distribution is shown in Figure 4.

Such a shape for the distribution curve may not be atypical. For instance, the current US Department of Energy long-run forecast for annual price growth is -1% in the low case, +1% in the reference case, and +3% in the high case.

Where the most likely price (the mode), the one with the highest probability, may be \$90, (the approximate current long-run consensus forecast), due to a number of factors reflecting price outlook, there may be higher probabilities price could be higher than \$90 rather than lower. There is just more room and possible reasons for price to move up rather than down.

Hence, the curve is skewed to the right. Investors would not focus on just the one price with the highest probability, but on the spectrum

of prices. In this particular distribution the mode is \$90, the median price is about \$110, and the mean is about \$130, both much higher than the \$90, reflecting greater upside (high price) potential than downside (low price) potential. Investors would use the median or mode in their project analysis. They would not use the \$90.

Consequently, what happens on the upside can have a dramatic effect on the expected result weighted over the entire distribution. If the upside (profit) potential is not suppressed it can markedly improve these expected results. Even if the upside potential is of relatively low probability, it represents an opportunity for a great deal of cash flow, and can have such a dramatic effect when it does occur that it can play a pivotal role in feasibility analysis. Thus the importance of upside potential should not be negated.

This is intensified by exploration risk. A serious exploration program may cost hundreds of millions of dollars, and there may be a 50% chance an explorer will come up dry and lose money. It takes a lot of upside potential to offset the high risk of losing large sums of money 50% of the time.

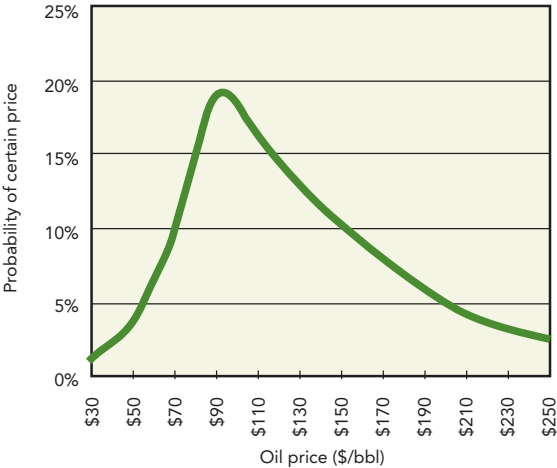
However, since the marginal tax rates are so high under Alaska’s structure, the progressivity takes away much upside potential from producers.

Is the curtailment of upside potential balanced with commensurate sharing of downside price risk? As price falls the production tax rate goes down to the base rate of 25%

of net value and then stops. Contrast this, for example, with the lowest federal corporate income tax rate of 15%. In competitive terms, as we will intimate in the International Comparison section below, Alaska’s floor may not be a very low rate. Accordingly, the government does not share equitably in downside price risk. There is little risk symmetry.

The role of capital credits in tempering the asymmetry is modest. The credits will be a fixed amount regardless of price, juxtaposed against a high percentage of a large amount of value on the upside. The cash flow difference is substantial. (The production tax structure was initially devised in 2006, without progressivity, with international competitiveness as a design criterion, using a 5 percentage point difference between the tax rate and the credit rate. See Van Meurs.)

Fig. 4: Hypothetical expected price distribution





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INTERNATIONAL COMPARISON:
TWO CASE STUDIES

Case study 1: ConocoPhillips worldwide
operating results

ConocoPhillips (CP) is one of the three major working interest owners on the North Slope. (The others are BP and ExxonMobil.) Alaska constitutes a major portion of CP’s assets, and it reports the result of their Alaska operations separately. (Other companies do not.) CP’s operating results are presented in their Annual Report and Securities and Exchange Commission (SEC) Form 10-K.

Another way to get a perspective on upside potential is to compare the 2008 (the first full year ACES was in effect), and 2009 financial operating results for CP inside and outside Alaska. Oil prices in 2008 were high, peaking near \$150/bbl and averaging nearly \$100/bbl, and quite a bit lower in 2009, averaging around \$60/bbl. By comparing what happens to taxes in high and low price years we can get a good picture as to how much upside potential is captured by taxes.

ConocoPhillips has a presence in over 30 countries, and by nearly any measure is one of the world’s largest private (not state-owned) exploration and production companies. Their tax situation is a good representation of international tendencies, and a comparison between their Alaska and non-Alaska taxes provides a barometer of Alaska’s relative tax picture.

CP’s production in Alaska is nearly all crude oil (and natural gas liquids). Outside Alaska CP operations are about half oil and half gas. Their worldwide gas prices in 2008 and 2009 were \$8.28 per thousand cubic feet (mcf) and \$4.30/mcf, respectively.

Table 3 shows ConocoPhillips reported operating results inside and outside Alaska for 2008 and 2009. (The figures include the results of natural gas operations, as well.)

In Alaska, where pre-tax income was \$3,673 million higher in 2008, after-tax income was only \$775 million higher. Only 21% of the additional pre-tax income was retained after-tax. About 80% of the additional taxes were non-income taxes, nearly all of which was the production tax.

Outside Alaska 51% of the pre-tax income was retained after-tax. This illustration would suggest the production tax significantly limits upside potential.

Case study 2: PFC Energy study

In October 2007 PFC Energy produced for the State of Alaska a publicly available report comparing worldwide government take. PFC’s data set contains 190 of the largest international oil projects from 18 countries.

The report showed that at an \$80 market price only 20% of the projects have higher marginal tax rates than Alaska. (The report was prepared prior to the run-up of prices in 2008, and \$80 was the highest price examined.) The report also showed that the jurisdictions with higher marginal tax rates are areas under production sharing agreements, where resource potential is higher, the operating environment is lower cost/less harsh, and fiscal stability terms are available.

As far as downside price risk is concerned, PFC showed that at \$30 only about 28% of the other worldwide projects have higher marginal tax rates than Alaska. This underscores the risk asymmetry discussed above.

Conclusion

Progressivity is an accepted and widely utilized instrument of taxation, and there is certainly a role for it. The philosophy is straightforward. At lower income there is less ability to pay taxes and there is a lower tax rate. At higher income there is more ability and there are higher rates.

The lowest dollars of value retain their diminutiveness regardless of what higher value ones follow. These dollars

Table 3: ConocoPhillips financial performance:
Alaska vs. rest of world 2008 & 2009 (\$ millions)

	Alaska			– Non-Alaska Rest of World –		
	2009	2008	Difference	2009	2008	Difference
Average annual oil price (\$/bbl)	\$59.23	\$99.10		\$55.47	\$89.35	
Daily oil production (bbls/day)	252,000	261,000		638,000	661,000	
Gross Revenues	\$5,675	\$9,093		\$21,391	\$36,286	
Production cost	864	960		4,048	4,176	
Exploration cost	74	99		1,106	1,240	
Depreciation	611	559		7,444	7,119	
Transportation	548	409		934	1,115	
Other	187	2		1,060	1,130	
Total cost	2,284	2,029		14,592	14,780	
Pre-tax income	3,391	7,064	3,673	6,799	21,506	14,707
Taxes other than income taxes	1,135	3,432	2,297	690	1,383	693
Income taxes	716	1,317	601	4,147	10,617	6,470
Total taxes	1,851	4,749	2,898	4,837	12,000	7,163
After-tax income	1,540	2,315	775	1,962	9,506	7,544
Percentage of additional pre-tax income retained after-tax			21%			51%

have a limited ability to pay taxes, and most jurisdictions in their tax structures protect these low dollars from progressivity through bracketing. In bracketing, only incremental value is subject to higher tax rates.

Alaska's production tax is unique in that there is no bracketing. When progressivity occurs it applies to the very first dollar of value, as well as all subsequent dollars. Thus as value increases, additional tax is extracted from all previous value.

This can create high marginal tax rates. At higher prices a large share of incremental value goes to the government, which can significantly suppress upside potential. Given the importance of upside potential in portfolio analysis, Alaska's international attractiveness for investment may be uncompetitive.

Many proposals have been floated within Alaska to address the effects of high marginal rates. However, most simply reduce the slope of the progressivity curve or create additional credits; few actually correct the underlying problem. **OGFJ**

About the author

Roger Marks is a petroleum economist based in Anchorage, Alaska. He focuses on tax, regulatory, and resource issues. He also writes on oil and gas issues and teaches economics locally. His previous article for OGFJ, "Pitfalls abound in Alaskan effort to make gas pipeline a reality," ran in the June 2009 issue.



References

Alaska Department of Revenue, "Spring 2010 Forecast," p. 8. (<http://www.tax.alaska.gov/programs/documentviewer/viewer.aspx?1943f>)

ConocoPhillips, "2009 SEC Form 10-K", February 25, 2010, pp. 148-154. (http://phx.corporate-ir.net/phoenix.zhtml?c=132222&p=irol-sec&seccat01.1_rs=21&seccat01.1_rc=10)

Energy Information Agency, US Department of Energy, 2010 Annual Energy Outlook. (<http://www.eia.doe.gov/oiaf/aeo/>)

PFC Energy, "Government Take Comparison," a report prepared for the Alaska Department of Revenue, October 20, 2007, p.3. (<http://www.revenue.state.ak.us/ACESDocuments/PFCenergy/pfc%20torsten%20legis%20slides.pdf>)

Van Meurs, Pedro, "Proposal for a Profit Based Production Tax for Alaska," a report prepared for the State of Alaska Department of Revenue, February 14, 2006. (http://www.revenue.state.ak.us/gasline/ContractDocuments/Contractors/VanMeurs&Associates/CDP_703835.pdf)

Appendix
Derivation of marginal tax rate at \$80/bbl price

Row	Item	Base Price	One \$ higher than base price	Difference
1	ANS West Coast oil price (\$/bbl)	\$79.00	\$80.00	
2	Downstream (transportation) cost (pipeline, marine shipping) (\$/bbl)	\$5.79	\$5.79	
3	Wellhead value (\$/bbl) (R1 – R2)	\$73.21	\$74.21	
4	Upstream (Exp, Dev, Prod) capital cost (\$/bbl) *	\$11.72	\$11.72	
5	Upstream (Exp, Dev, Prod) operating cost (\$/bbl) **	\$10.69	\$10.69	
6	Net value (\$/bbl) (R3 – R4 – R5)	\$50.80	\$51.80	
	Royalty			
7	Royalty rate	13.00%	13.00%	
8	Royalty (\$/bbl) (R3 x R7)	\$9.52	\$9.65	
	Production tax			
9	Base rate	25.00%	25.00%	
10	Progressivity rate ((R6 – 30) x .004)	8.32%	8.72%	
11	Total rate (R9 + R10)	33.32%	33.72%	
12	Production tax before credits ((1 – R7) x R6 x R11)	\$14.72	\$15.19	
13	Credits (.2 x R4)	\$2.34	\$2.34	
14	Production tax after credits (R12 – R13)	\$12.38	\$12.85	
15	Property tax	\$1.50	\$1.50	
	State and federal corporate income tax			
16	State rate	9.40%	9.40%	
17	Federal rate	35.00%	35.00%	
18	Combined rate (R17 + ((1 – R17 x R16))	41.11%	41.11%	
19	State and federal corporate income tax (R18 x (R6 – R8 – R14 – R15))	\$11.26	\$11.43	
	Total payments to government			
20	Royalty (R8)	\$9.52	\$9.65	\$0.13
21	Production tax (R14)	\$12.38	\$12.85	\$0.47
22	Property tax (15)	\$1.50	\$1.50	\$0.00
23	State and federal corporate income tax (R19)	\$11.26	\$11.43	\$0.16
24	Total (R20 + R21 + R22 + R23)	\$34.66	\$35.43	\$0.77
25	Marginal tax rate (add'l payments to gov't at one dollar higher price) (R24)			\$0.77

* (\$10.20/(1-.13)) The cost to produce royalty barrels is also deductible.

** (\$9.30/(1-.13)) The cost to produce royalty barrels is also deductible.



Re-examining corporate governance

Regulatory agencies worldwide are taking a close look at how management and the boards of public companies can best protect the interests of customers, shareholders, and employees.

Doug Tymkiw, Allison Plaisance, and Warren Breaux, *Ernst & Young LLP, New Orleans*

In response to the financial crisis, governments across much of the world are adopting measures designed to enhance corporate governance, including the management of risk and compliance. With changes looming, the oil and gas industry should re-examine its risks, looking at current operations, future projects, and corporate social responsibility practices. Effectively managing risks is vital, not only to short-term profitability but also to long-term sustainability.

One key area of focus for policy reforms of oil and gas companies is enhancing compliance and risk management. This includes how management and the boards of public companies could and should work better in the interests of their customers, employees, shareholders, and other key stakeholders. Policymakers are taking proactive steps to advise companies on what needs to change as well as increasing their emphasis on enforcement.

Below is a listing of new and pending requirements for oil and gas companies.

United Kingdom Bribery Act 2010

Passed in April 2010, the United Kingdom Bribery Act gives the UK the power to penalize companies based on the actions of individuals or company representatives, if those individuals or company representatives are found guilty of bribing either government officials or government-run organizations. Oil and gas companies operating in the UK should be aware that the act allows companies to defend themselves against unauthorized actions if the company can prove that it had adequate procedures in place to prevent such conduct. The Bribery Act also allows for additional guidance to be added by the Secretary of State based on what constitutes adequate procedures.

Recent US legislative actions

The US Congress is reviewing several actions that would result in more compliance and oversight of US corporations.

- The Dodd-Frank Wall Street Reform and Consumer Protection Act imposes new compliance requirements on oil and gas companies concerning the reporting of payments to foreign governments. Section 1504 – Disclosure of Payments by Resources Extraction Issuers requires disclosures for payments relating to commercial development of oil, natural gas or minerals, and includes activities of extraction, processing, exporting, and even obtaining a license for these activities.
- In other developments, the Minerals Management Service, which was renamed as the Bureau of Ocean Energy Management, Regulation, and Enforcement within the Department of the Interior, is now comprised of two major programs, the Offshore Energy and Minerals Management and the Minerals Revenue Management. Additional legislation that would affect oil and gas companies operating domestically is under consideration, including measures that would increase safety and environmental compliance requirements as well as the civil penalties and fines levied for violations of various environmental laws. Companies will have to continue to monitor legislation to follow these and other proposed changes as they develop.

United States Sentencing Guidelines (USSG)

Chapter 8 of the USSG is aimed at strengthening the compliance programs of companies operating under US laws. The US government amended the USSG in April 2010. The proposed changes, effective Nov. 1, 2010, give guidance to companies on the reporting structure of a company's compliance program, self-reporting and cooperating with authorities as well as remediation and communication efforts to employees.

Regulatory penalties

US government and regulatory agencies are also using fines, disgorgement, and other penalties to entice companies to focus on governance and compliance. In recent months, agencies such as the Federal Energy Regulatory Commission (FERC), the Department of Justice (DOJ), the Environmental Protection Agency (EPA), and the Occupational Safety and Health Administration (OSHA) have been imposing fines for various violations including falsifying information, Foreign Corrupt Practices Act (FCPA) violations, pollution, inspection violations, etc.

So, what are companies doing?

Setting a company's compliance program in the context of strategy

Boards and management need to set their company's tolerance for risk and ensure they structure an effective compliance program so that it is reflected in the company's operations, including appropriate controls docu-

mentation and monitoring procedures to manage risks. More companies are establishing compliance departments with senior-level executives responsible for designing the overall program and business units implementing the compliance responsibilities.

- *Compliance risk assessment.* A foundational element of an effective compliance and ethics program, and a core piece of enterprise risk management, is a dedicated assessment of compliance risks based on established criteria. A compliance risk assessment can be performed on either a stand-alone basis or in coordination with an enterprise-wide risk management process.
- *Information access and flow.* Board members should be provided, on an on-going and timely basis, detailed information on the full spectrum of risks faced by the companies they oversee. They should receive regular reports concerning identified risks, compliance and performance issues, and should also have the ability to obtain information from external sources, as necessary.
- *Monitoring of key compliance areas.* Based on their risk profile and key strategic operations, companies are performing internal audits of individual compliance programs as a subset of their overall compliance management structure. These audits can help management and the board assess how they carry out their responsibilities and interact with management, external stakeholders, and manage their most significant risks. Companies can use compliance personnel or external consultants to help them measure their effectiveness and alternate between internal resources and external consultants to provide a level of objectivity.
- *Increased focus on due diligence.* In today's economic environment, oil and gas companies seeking to grow internationally through acquisitions can no longer limit their due diligence procedures to the areas of accounting, human resources, operational, or information technology. The US Department of Justice has been vigilant in assessing these acquisitions for potential FCPA violations by the acquired company. Failure to identify and report potential violations can result in fines or sanctions for actions taken by the acquired company prior to the acquisition. Effective FCPA due diligence through analyzing the acquired company's books and records can reduce the risk inherent in acquiring a company with international operations. It is the responsibility of the board and management to conduct due diligence procedures with respect to several key areas of operations including, but not limited to, contact with foreign government officials/representatives, contact with agents/sponsors, vendor contracts and background checks, disbursements, expense reporting, petty cash and general ledger activity.

Board responsibilities

An effective board develops the policies, processes, and procedures necessary to carry out its responsibilities,

including oversight of strategic planning, crisis management, and shareholder communication. This sets the foundation for good corporate governance and sound risk management. Well-governed companies are better positioned to identify and manage significant risks. They are therefore more likely to operate effectively, driving long-term value.

Board members cannot do it all themselves. They are increasingly providing guidance to executives and forming committees to oversee the important aspects of their governance responsibilities as has traditionally been the case with audit and compensation committees. Boards are also forming risk and compliance committees because of the increasing focus of regulatory agencies and market risks affecting their companies.

In conclusion, boards can stay ahead of the regulatory enforcement curve by having compliance personnel implement or improve their organization's internal compliance, anti-bribery, and corruption policies. Board members should also approve policies and guidelines that are proactive and call for self-monitoring and reporting rather than reactive policies. **OGFJ**

The views expressed herein are those of the authors and do not necessarily reflect the views of Ernst & Young LLP.

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A safer bet

Balancing energy hedge fund risk appetite with risk aggregation and analytics

Louis Caron, RiskAdvisory, a division of SAS, Calgary

Energy hedge funds have a very particular set of technology needs when it comes to trading and risk management. A larger risk appetite, and the potential for exponentially larger yield, is a key to attracting sophisticated investors for these aggressively managed investment vehicles. Because they take such an aggressive stance toward the market, hedge funds can reap major benefits from information technology that enables them to measure and monitor market movements and their own position accurately – and quickly. That’s especially true in the fast-moving world of energy commodities.

Recall the energy commodities run-up of 2008. The activities of energy hedge funds stoked controversy on Capitol Hill about the role of so-called “speculators.” Arguably, the popularity of energy futures as an investment does add a premium to their price beyond fundamentals. The argument in Congress, of course, is how big a premium.

We’d say hedge funds add stability and much-needed liquidity to futures markets. In truth they are more focused on playing the spread between energy commodities than acting solely as directional players. And the reality in the trenches in 2008 was that, in pursuit of those cross-commodity arbitrage opportunities in the energy complex, energy hedge fund managers and traders had to navigate an unprecedented level of volatility in their portfolios.

In the first half of that year, oil repeatedly hit record-breaking levels above \$100 and then quickly retreated, before peaking at \$147 in July and falling back below \$60 by November. The rest of a hedge fund’s portfolio was subject to similar spasms as commodities from gas to wheat underwent massive fluctuations. Don’t forget that in 2008 the price of rice more than doubled in less than seven months.

Faced with such dramatic movement throughout the portfolio, hedge fund managers rightly looked to technology for an assist. Historical data is of limited value in such a price environment – oil has only hit these relative heights twice in a century, in the late 1970s and the early 1860s. What's needed is accurate deal capture, actionable risk analysis, and increasingly robust scenario modeling – all on the fly.

Enter energy trading and risk management (ETRM) solutions for hedge funds. The ability to manage many different products and commodities in a single system is vital to a hedge fund, where it's common to find arbitrage strategies between energy commodities as well as between those commodities and other markets such as currency. Hedge funds should seek systems with computational power to enable a risk manager to collect a vast array of disparate data into a centralized data store, empowering analyses that draw out both strengths and weaknesses across the portfolio.

Beyond arbitrage, one of the challenges for hedge funds is that they won't see the upside if they don't put some money on directional trades, which sometimes means intentionally foregoing their established risk metrics. Crossing over those lines in search of opportunity, hedge funds can substantially mitigate

the inherent risk through technology-driven monitoring and analysis.

ETRM technologies should help mitigate that inherent risk through reliable position management, intraday portfolio valuation, customized curve generation, and real-time analytics that allow a hedge fund to, for instance, stress-test around value, credit- or margin-at-risk while the market is liquid and volatile mid-session. Critically, an ETRM system empowers risk managers to aggregate risks and offsets between multiple commodities and positions across the portfolio, teasing out relationships that are otherwise often overlooked.

But there's more to hedge fund ETRM use than what amounts to crisis management during periods of atypically volatile commodity market fluctuations. At its most fundamental element, an ETRM system acts as de facto risk officer, auditor, and regulator on a trading desk with a small staff, where duties often overlap and the risk manager is very likely also to be a trader.

The small size of a hedge fund trading team allows it to be relatively nimble, but it also may allow the lines of authority to become blurred. An ETRM system offers ballast when a few people wear many hats.

Unlike a utility or refinery, the ETRM system is an integral part of the initial investment in a hedge fund. High net-worth investors consider system selection a critical part of their due diligence when deciding to place their money with a hedge fund manager. The trading group has to show acumen and a good strategy, but it also has to demonstrate that it has solid risk management processes and a good risk management system.

As a result, the decision to invest in an ETRM system often accompanies the influx of investment capital into a new hedge fund. Fund managers should ensure that their vendor is capable of implementing a system quickly – eight days should be enough in our experience – so that capital starts producing right away. That'll put a smile on a hedge fund manager's face as surely as a killer arb. **OGFJ**

About the Author

Louis Caron is the Global Lead for Energy Commodity Risk Management at RiskAdvisory. Originally a financial and physical commodities trader with TransCanada Energy Management and Western Gas Marketing, in 1995 he was a founder of RiskAdvisory, leading the formation and growth of the software group that develops and markets SAS BookRunner. Caron led the transition of business activities when RiskAdvisory was acquired by SAS in 2003. Currently he provides software consulting to RiskAdvisory clients around the world based on his extensive energy trading and risk management domain expertise.



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Controlling the hidden liability in backup tapes

Jim McGann, *Index Engines, Holmdel, NJ*

Information, including contracts, e-mail conversations, and intellectual property, is the lifeblood of every company. These records are typically very difficult for the legal department to obtain when the need arises due to the sheer volume and complexity of the corporate infrastructure. Finding an e-mail conversation that discussed offshore leases or the engineering specifications related to specific facilities can be a nightmare.

Over time, many legal teams have reluctantly accepted that finding specific files and e-mail on corporate networks is a lost cause. Going back in time two or three years ago to find a specific conversation between an engineering manager and a vendor has been next to impossible. As a result, legal teams are resigned to the fact that this information is inaccessible and cannot be collected in support of the current case at hand. Therefore, the use of the “undue burden” argument has become a standard tactic when faced with the time-consuming and expensive collection of electronically stored information (ESI).

However, the use of the burden argument is rapidly eroding. Technology is now in place that simplifies the complex task of finding and collecting relevant data in support of litigation. Many judges have become educated on this technology. Look at Judge Shira Scheindlin’s opinion in the Pension Committee of the University of Montreal Pension Plan et al., v. Banc of America Securities LLC, et al., where the judge slapped the hands of plaintiffs who didn’t come to court equipped with the data they needed.

How can you best manage this data and ensure you are prepared for current and future litigation? You should ask your IT department. They have been backing up this data for years. In fact, they have a snapshot of all important business records on backup tapes

stockpiled offsite for safekeeping. These backup tapes represent a valuable repository of information, as well as a major liability, because all records, including sensitive content, are archived and may be requested by the courts.

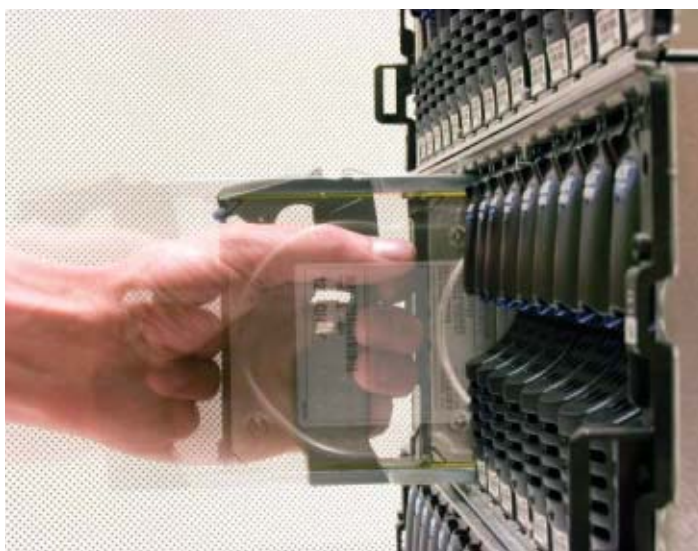
Leveraging backup tapes

You need to take advantage of these historical backup tapes and cull the relevant data, loading it into a litigation hold database, and purge the remainder of the content that is no longer required. Doing this allows streamlined access to the data required to support current and future litigation, as well as controlling liability of unknown data hidden in these tapes.

Historically, this has been very expensive. However, new technology now makes access to legacy backup tape data affordable and simplified. Therefore, many organizations, especially energy firms facing oversight and scrutiny from federal agencies, are undergoing backup tape remediation to get their electronically stored information in order.

Access to legacy backup tape data has typically been expensive and painful. The only option was to employ the original software used to create the tapes to fully restore the content. This is a challenge as these tapes are old and the environment used to create them is usually no longer in place. Additionally, since less than 5% of the tape content are relevant business records, the rest being irrelevant documents and e-mail, moving the 95% of useless information from tape is a massive waste of time and resources.

A new intelligent, cost-effective method now exists to access backup tape data. This process bypasses the traditional restoration of the content, and scans the tapes to generate a searchable index of the content. Searching the full text index of the files and e-mail that



exists on tape allows you to find relevant data based on content, dates, owner, and more.

Once you find what you need, the data can then be extracted from tape, even if it is only one e-mail. You can avoid moving the volume of junk from tape, and also negate the need to re-create the original backup environment. This new approach enables affordable, efficient access to historical records on tape for litigation and allows organizations to gain control of the unknown records on these historical tapes, and to remediate data and tapes that are not required based on corporate policy, hence controlling liability.

Consider remediation

The liability of unknown content on these tapes is something that keeps many people up at night. With government agencies looking over your shoulders and enforcing federal regulations, understanding the historical data assets on these tapes is important now more than ever. So how can your organization get this

Table 1: Tape remediation project

Tape profile	10,000 LT02 Tapes (a combination of NetBackup, ArcServe and BackupExec)
Hardware environment	Tape Indexing Appliance, PC with browser access, Tape Library (3 active drives and capacity for 50 cartridges in this example).
Phase 1: Cataloging	All 10,000 tapes are scanned; 1-2 minutes per tape. Total cataloging time 26 days (24x7 w/ 10% downtime) or 381 tapes/day.
Phase 2: First pass culling	Catalog analysis identifies tapes to be eliminated from further processing: blanks, backups from non-user data servers, and incremental backups. This is typically 80% of the total tapes; 8,000 are eliminated, leaving 2,000 tapes for full indexing.
Phase 3: Indexing	Full scan of the 2,000 remaining tapes (approx 400TB of data). The index contains the complete text and metadata of the content. Total indexing time 17 weeks. The total index size, typically 4 to 8% of the data, is approximately 16-32 TB.
Phase 4: Discovery	Using the browser-based interface, legal can then search the index generated from the tape content and find what they need. The relevant content (typically 1% or less) will be tagged, ~4 TB
Phase 5: Extraction	Extraction of tagged data is an automated process that does not require the original backup software, just that the appropriate tape be loaded in the library. Total extraction time ~18 hours
Phase 6: Recycle tapes	Once relevant content is extracted and delivered to legal, tapes can be recycled.
Total time	Cataloging (3.7 weeks) + Indexing (17 weeks) + Extraction (.2 weeks) = 20.9 weeks
Tape storage costs	Approximately \$30/tape/year. For 10,000 tapes the storage costs equals \$300,000 annually.
Cost to purchase new tapes	\$100 per tape at 25/week would cost \$130,000 annually

content under control? How can you remediate historical backup tapes in a defensible and affordable manner?

New intelligent tape discovery solutions have rendered tape remediation achievable in less time than an IT department can process tapes in house, find what legal needs, archive it, and make it available when needed. This efficient, cost-effective process enables tape remediation allowing IT departments to recapture tape storage budgets, while providing legal with the data they need.

Cull data quickly considering the following steps:

1. Load tapes in a tape library; this will automate the process of reading the tape content and eliminate the manpower requirement to handle tapes.
2. Scan tapes to determine the high-level content. You can eliminate up to 80% of the total tapes by purging blank tapes and those with non-user data or “incremental” network backups that are not required as the “full” backup is what you want.
3. Perform a deep scan of the remaining tapes to fully index the content without ever moving anything from tape.
4. Search the index, based on keywords and metadata, to find what is relevant: typically less than 5% of tape content.
5. Extract relevant content from tape and load to litigation hold platform or archive, then recycle or shred the tapes.

The process of tape remediation is now reality, eliminating the requirement to have the original environment used to create the tapes. Not only will tape remediation control liability, but it will also save IT departments the expense of maintaining and storing these tapes, which can easily be millions of dollars annually.

A case study: automated tape processing

Imagine a situation where 10,000 tapes are stored by your IT organization – tapes containing valuable yet unknown records. Loading these tapes in a tape library will quickly produce a catalog – a basic guide as to the overall tape content. Analysis of this catalog will allow you to eliminate incremental backups, as well as backups of non-user data and blank tapes. This typically reduces the volume by 80%, turning a 10,000 tape job into a 2,000 tape job. Stopping here eliminates 80% of the tapes and achieves significant cost savings.

With cataloging complete, the balance of the tapes will now contain the relevant data. The challenge then is to separate relevant from useless content. This requires a full scan of the tapes, which does not change or move any data from tape. It simply generates a searchable index of the content. Legal teams can now search this index and find relevant data based on keyword and metadata searches.

Once the data has been searched, tagged and culled, it can then be extracted. The cost savings here is that

the original environment that created the tape is no longer needed. Extraction of the content is done directly and allows only the migration of the relevant data (typically less than 5% of the total content) from tape. When this process is complete, the tapes can then be recycled.

Details of a 10,000 tape remediation project currently underway with a global energy provider with new automated technology are shown in Table 1.

If you combine the cost to store tapes offsite with the cost to acquire new tapes in support of the existing backup process, it equals \$430,000 per year. As the volume of tapes grows each week, this number will continue to increase over time. The expenditure for manpower, tape libraries, tape indexing hardware and software will show an ROI in less than one year. This does not include any costs associated with ongoing litigation where tapes are pulled from storage for restoration. These litigation support costs could easily reach hundreds of thousands of dollars annually, which would result in an accelerated ROI.

Conclusion

In the past, it was not cost-effective to remediate the mountains of tape stored offsite. Alongside the cost concern is also the need to archive documents that grant

"New technology now makes access to legacy backup tape data affordable and simplified... many organizations, especially energy firms facing oversight and scrutiny from federal agencies, are undergoing backup tape remediation to get their electronically stored information in order."

energy companies the land access they need. New technology now makes it feasible to identify what to keep and what is no longer needed, and remediation is quickly becoming a best practice for any organization that is faced with constant legal events. As legal and IT work together, tape remediation is quickly becoming the preferred method to reduce corporate liability and expand what IT can accomplish despite its ever-shrinking budget. **OGF**

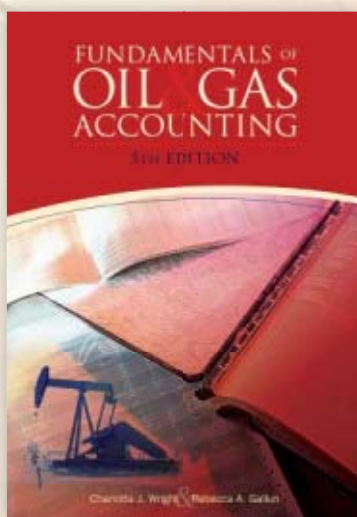
About the author

Jim McGann is vice president of information discovery at Index Engines, a tape discovery and remediation company based in Holmdel, NJ. McGann is a frequent speaker on the topic of electronic discovery and has authored multiple articles for legal technology and information management publications.



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Deal Monitor

BP-Apache's \$7 billion deal is month's largest

By far the biggest upstream petroleum transaction of the past month was the deal between BP and Apache Corp. On July 20, the companies announce an agreement whereby Apache would acquire all of BP's oil and gas operations, acreage, and infrastructure in the Permian Basin of West Texas and New Mexico, and in Egypt's Western Desert. Apache also will obtain substantially all of BP's upstream natural gas business in western Alberta and British Columbia. Apache will pay \$7 billion for the assets,

which include estimated proved reserves of 385 million barrels of oil equivalent.

"This is a rare opportunity to acquire legacy positions from a major oil company, with oil and gas production, acreage, infrastructure, seismic data, field studies, exploration prospects, and other essential aspects of our business," said G. Steven Farris, Apache's chairman and CEO. "We seldom have an opportunity like this in one of our core areas let alone three."

Rodman & Renshaw - Deal Monitor — *Select transactions* 7/16/10 - 8/15/10

US Transactions

Date Announced	Buyer	Seller	Asset Location
2010/08/10	EV Energy Partners	Petrohawk	Mid Continent
2010/08/05	Reliance Industries	Avista Capital; Carizzo Oil & Gas	Appalachia
2010/07/27	Hess	American Oil & Gas	Rocky Mountains
2010/07/26	Wapiti Energy	Delta Petroleum	Multi States
2010/07/21	Double Eagle Petroleum	SM Energy	Rocky Mountains
2010/07/21	Undisclosed	Ellora Energy	Gulf Coast Onshore
2010/07/20	Apache	BP	Mid Continent
2010/07/20	Concho Resources	Marbob Energy	Mid Continent
2010/07/20	Republic Energy	Trans Energy	Appalachia
2010/07/19	Linn Energy	Undisclosed	Gulf Coast Onshore
2010/07/19	Sun Cal Energy	Undisclosed	West Coast

International Transactions

Date Announced	Buyer	Seller	Asset Location
8/12/10	Centrica; Direct Energy	Suncor Energy	Canada
2010/08/11	Beach Energy	Lakes Oil	Australia
2010/08/09	Harvest Operations	Korea National Oil Corporation	Canada
2010/08/09	Gas Plus	Eni SpA	Western Europe
2010/08/04	Ithaca Energy	GDF Suez	Offshore Europe
2010/08/03	Empresa Colombiana de Petroleos; Talisman	BP	South America
2010/07/29	Undisclosed	Cenovus Energy	Canada
2010/07/26	Kallisto Energy	Undisclosed	Canada
2010/07/20	Apache	BP	North Africa
2010/07/20	Salamander Energy	SOCO International	Southeast Asia
2010/07/20	Apache	BP	Canada
2010/07/19	Talisman; Talisman Energy Norge	Norwegian Energy Company	Offshore Europe
2010/07/16	Sino Oil and Gas Holdings	Orion Energy	East Asia

Source: The Rodman Energy Group and IHS Herold. Validity of data is not guaranteed and is based on information available at time of publication.
 Prepared by Jason Reimbold, Vice President, Rodman Energy Group. For more information, email to jreimbold@rodm.com.
 Rodman & Renshaw LLC (Member FINRA, SIPC) is a full-service Investment Bank with offices in New York and Houston.

Deal Monitor

In another transaction involved BP, a consortium of Colombia's national oil company, Ecopetrol, and Talisman of Canada, will acquire BP Exploration Co. (Colombia) Ltd. (BPXE), a wholly owned BP subsidiary that holds BP's oil and gas exploration, production, and transportation interests in Colombia.

BPXE's assets include interests in five producing fields in four association contracts, four separate pipeline interests, and two offshore exploration blocks. Net proved reserves total some 60 million boe, and production is about 25,000 boe/day.

The sale of all these assets by BP is part of the company's plan to divest up to \$30 billion of assets over the next 18 months.

One other deal of note is Midland, Tex.-based Concho Resources' acquisition of all the oil and gas assets of Marbob Energy Corp. and certain affiliates for \$1.65 billion in cash and Concho securities. Marbob is a privately-held E&P company with operations in the Permian Basin of Southeast New Mexico. The acquisition includes a significant acreage position in the emerging Bone Spring play in Southeast New Mexico.

"Marbob's Bone Spring acreage, when coupled with our existing acreage, gives [us] over 100,000 net acres in one of the most exciting emerging plays in the industry today," said Timothy Leach, Concho's chairman and CEO. **OGFJ**

Proved Reserve Value (\$MM)	Non Proved Reserve Value (\$MM)	Reserves (MMBoe)	Production (Boe/D)	Reserves (\$/Boe)	Production (\$/Boe/d)	Reserves (\$/Mcfe)	Production (\$/Mcfe/d)	%Gas
123.0	—	12.4	2,583	9.91	47,613	1.65	7,935	42
392.0	—	NA	NA	NA	NA	NA	NA	99
358.9	19.6	NA	NA	NA	NA	NA	NA	96
130.0	—	NA	NA	NA	NA	NA	NA	0
7.8	—	1.5	NA	5.20	NA	0.87	NA	0
110.0	460.0	10.2	2,200	10.82	50,000	1.80	8,333	94
2,662.2	437.8	140.9	28,533	18.89	93,301	3.15	15,550	86
1,409.6	249.0	76.0	14,000	18.55	100,687	3.09	16,781	0
—	27.0	NA	NA	NA	NA	NA	NA	0
95.0	—	8	900	11.88	105,556	1.98	17,593	0
—	0.2	NA	NA	NA	NA	NA	NA	0
Number of Transactions 12			Median	11.35	93,301	1.89	15,550	
			Mean	12.54	79,431	2.09	13,239	

Proved Reserve Value (\$MM)	Non Proved Reserve Value (\$MM)	Reserves (MMBoe)	Production (Boe/D)	Reserves (\$/Boe)	Production (\$/Boe/d)	Reserves (\$/Mcfe)	Production (\$/Mcfe/d)	%Gas
344.0	18.9	21.4	10,686	16.09	32,196	2.68	5,366	100
45.9	—	NA	NA	NA	NA	NA	NA	100
350.8	17.8	NA	NA	NA	NA	NA	NA	0
—	230.5	NA	NA	NA	NA	NA	NA	0
14.9	3.0	NA	1,000	NA	14,947	NA	2,491	0
1,176.3	718.7	95.0	25,000	12.38	47,052	2.06	7,842	14
158.9	—	NA	4,933	NA	32,200	NA	5,367	7
—	2.5	NA	NA	NA	NA	NA	NA	0
440.9	209.1	20.2	7,767	21.83	56,765	3.64	9,461	35
105.0	—	NA	2,991	NA	35,105	NA	5,851	41
2,241.3	1,008.7	223.7	46,483	10.02	48,217	1.67	8,036	0
43.0	—	NA	NA	NA	NA	NA	NA	100
301.2	—	NA	NA	NA	NA	NA	NA	0
Number of Transactions 13			Median	\$14.24	\$35,105	\$2.37	\$5,851	
			Mean	\$15.08	\$38,069	\$2.51	\$6,345	
Number of Global Transactions 25			Median	\$12.13	\$47,915	\$2.02	\$7,986	
			Mean	\$13.56	\$55,303	\$2.26	\$9,217	



Renewed interest in royalty trusts

From a tax and cash distribution perspective, royalty trusts are similar to an upstream master limited partnership. However, unlike an MLP, a royalty trust does not have employees, operate its properties, make acquisitions, incur debt, or operate in perpetuity.

Upstream royalty trusts are experiencing a renewed interest as demonstrated by the recent \$182 million IPO of ECA Marcellus Trust I (NYSE: ECT) on July 1, which was sponsored by Energy Corporation of America (ECA).

Essentially, a trust is formed by a sponsor conveying mineral interests to the trust and retaining operations of the assets conveyed. Royalty trusts are an attractive vehicle for sponsors to raise capital as a trust can be strategically structured to fit a sponsor's assets and desired amount of capital to be raised; a common theme of recent royalty trusts is the ability for both public and private sponsor companies to monetize proved reserves, including non-producing reserves, at an attractive valuation typically exceeding valuations generated as a public c-corporation, joint venture, or in the acquisition and divestiture market.

From a tax and quarterly cash distribution point of view, a royalty trust has similarities to an upstream master limited partnership (MLP). However, a royalty trust is structurally different from an MLP in that a royalty does not have employees, operate its properties, make acquisitions, incur debt, or operate in perpetuity. Another key difference is a trust should be valued based on its expected internal rate of return (IRR) generated by forecasted distributions over the life of the trust compared to an MLP that is largely valued off its current annualized yield.

An MLP must continue to drill and make acquisitions to maintain its yield over the long term. At formation, a trust's assets are fixed. Modern day trusts typically have terms of 15 to 20 years or terminate after certain volume of hydrocarbons are produced.

Since the last royalty trust IPO in 1999, the IPO market for royalty trusts was dormant until the \$230 million IPO of MVO Oil Trust (NYSE: MVO) on January 19, 2007, which was sponsored by a private company. Shortly thereafter, Whiting Petroleum Corporation (NYSE: WLL) formed Whiting USA Trust I (NYSE: WHX) in a \$277 million IPO on April 24, 2008. Mike Ames, a managing director at Raymond James & Associates, noted, "Both sponsors selected mature, predominantly producing assets to contribute to their respective trusts, which were ideal given the assets' predictable production profiles used to forecast distributions over the life of the trust and both received attractive valuations." At IPO, WHX was able to monetize its reserves at \$33.80 per boe and redeploy the proceeds into other areas of operations.

Shortly after the IPO of WHX, the public equity markets collapsed with the subprime mortgage fallout in 2008 essentially shutting down the IPO market. The first royalty trust to go public since the severe market disruption was ECA Marcellus Trust I with a \$182 million IPO on July 1, 2010. ECT is a 20-year royalty trust with 14 gross proved developed wells (12.6 net wells) and 52 gross proved undeveloped wells (26 net wells) on 9,300 acres in Greene County, Pennsylvania.

ECA retained operations and the remainder of the working interests in the wells as well and owned approximately 50% of ECT's units. At IPO, ECT had a \$352 million market capitalization.

ECT is a unique trust in that it is the first modern trust to have such a large portion of the reserves classified as proved undeveloped, thus, requiring a sizeable drilling program. With the advent of shale drilling, the risk of drilling PUD wells had significantly decreased compared to drilling conventional PUD wells. As a result, the decreased risk of drilling Marcellus Shale PUDs made the PUDs appropriate for a trust. Furthermore, retail investors have the possibility of distributions exceeding the targeted distributions if the PUD wells outperform the Ryder Scott reserve report, which was used to forecast target distributions.

ECA was looking to raise capital to accelerate its drilling on its one million net acres in the Appalachian Basin. ECA also wanted to be able to continue to run as a private company. The company favored raising the capital via a royalty trust over a JV as a JV invites competition into a company's operating area, requires a significant portion of the property to be sold to a JV partner and typically receives a valuation inferior to a royalty trust.

ECA underwent the process of filing an S-1 registration statement with the Securities and Exchange Commission and marketing the trust via a road show, but once the trust was public, ECA no longer had any public company responsibilities or costs. The ECT trust was structured so that at expiration of the 20-year term

of the trust, half of the remaining reserves will revert automatically to ECA and the other half will be sold via a competitive bid process with ECA having the right of first refusal.

Howard House, co-head of energy banking and managing director at Raymond James commented, "I have been structuring royalty trusts since the early 1990s, and I believe the royalty trust vehicle has never had more application than it does today with the amount of capital needed to drill the multiple shale plays in the US and the number of retail investors demanding yield type of securities."

ECT and other modern-day trusts are attractive to retail investors due to these trusts' quarterly cash distributions with estimated IRRs that are forecasted at IPO to match or exceed current annualized yields of upstream MLPs. In addition, trusts have no management risk, meaning the assets and hedges contributed to the trust are fixed at formation of the trust.

Trusts do not and cannot make any additional acquisitions or divestitures or layer in additional hedges after formation. Realized distributions and IRRs are predominantly generated by actual quarterly production

"The royalty trust vehicle has never had more application than it does today with the amount of capital needed to drill the multiple shale plays in the US and the number of retail investors demanding yield type of securities."

and realized commodity prices. The production targets are usually generated from production assumptions from a third-party engineer, and the commodity price is typically based off some variation of consensus Wall Street commodity prices and the NYMEX strip net of the impact of commodity hedges in place.

Two key structural items of a trust are the decision to form the trust as a Net Profits Interests (NPI) versus a pure Royalty Interest (RI) and perpetual trust versus a term structure trust. In an NPI, the trust receives a set percentage of the net profits from the sale of production. The trust unitholders and sponsor would typically share all capital costs, operating costs, and workover expenses. Due to the sharing of costs, unitholders would receive tax shield from intangible drilling costs when the trust is structured as a perpetual trust.

The advantage of an NPI to the sponsor is that the unitholders share all operating and capital costs with the sponsor. However, due to the sharing of costs, the up-front proceeds to the sponsor are lower than with a RI trust. In an RI trust, the trust receives a set percentage of the net proceeds from the sale of the production and the sponsor bears all capital costs, operating costs, and workover expenses.

The advantage of an RI trust to the sponsor is there are greater upfront proceeds than an NPI trust and somewhat improved marketability given that unitholders are not burdened by operating or capital costs. The disadvantage is that the sponsor bears all operating and capital costs. Recently formed trusts have been structured as both NPI and RI trusts.

An NPI trust is appropriate when predominantly older producing assets are being contributed to the trust and little to no drilling is required. An RI trust is more appropriate for a trust that will have a significant amount of very low-risk PUD drilling, such as drilling Marcellus Shale PUDs.

To make a low-risk PUD royalty trust marketable to retail investors and provide the proper amount of investor protection, the sponsor must have the requisite creditworthiness, an established long history of operating in the area, and be willing to take 100% of the drilling cost risks via a RI trust structure.

Another key structural issue is making a trust perpetual, term, or a combination of both. The term structure trust effectively means that at the end of the trust life the properties automatically revert back to the sponsor. In addition, a term trust is treated as a deferred gain on sale. The deferred gain on sale is booked as a liability on the sponsor's balance sheet,

which is amortized into income on a units-of-production basis over the life of the trust. The trust is treated as a debt instrument for federal income tax purposes.

Essentially a perpetual trust means that when the trust ends, the properties are sold with the proceeds distributed to unitholders on a pro-rata basis. A perpetual trust is treated as a gain on sale. Balance sheet and income statement items are proportionately reduced and transferred to the trust. The perpetual trust has a marketing advantage over a term trust in that the distributable income payable to the unitholder is subject to depletion allowances.

According to Jimmy Murchison, a vice president at Raymond James, "The formation of a royalty trust starts off with a brainstorming session between the sponsor company and the bankers to create a security that offers an attractive IRR and the proper amount of protection to retail investors and appropriate amount of capital to the sponsor." Raymond James has structured and been the physical bookrunner on the last three royalty trust IPOs.

With the successful IPO of ECT, a PUD-heavy royalty trust, interest in royalty trusts has never been higher due to the large amount of capital needed to develop the US shale plays. **OGFJ**



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Industry Briefs

Penn Virginia buys into Eagle Ford with \$31.1M

Penn Virginia Corp. has acquired roughly 6,800 net Eagle Ford Shale acres located primarily in Gonzales County, Texas for \$31.1 million. The acquisition was funded with cash on hand. The acreage is estimated to contain over 40 horizontal well locations, with the company holding an average working interest of 73% (net revenue interest averaging approximately 55%). Penn Virginia completed the transition to a “pure play” E&P company in June, when it sold its remaining interests in Penn Virginia GP Holdings LP at a pre-tax gain of \$84.7 million.

Quorum gets capital from The Carlyle Group, Riverstone Holdings

Quorum Business Solutions Inc., a provider of business and information technology solutions for the oil, gas, and renewable energy industry, has received capital investments from The Carlyle Group, a global alternative asset manager, and Riverstone Holdings LLC, an energy-focused private equity firm. Financial terms were not disclosed. R. Scott Leeds, the company’s president and a co-founder, was named CEO, succeeding co-founder Paul Weidman, who remains chairman. Quorum veteran and former chief commercial officer, Perry Turbes, has assumed the title of COO. Acquisition financing was arranged by Silicon Valley Bank. Quorum was advised by Revolution Partners, a division of Morgan Keegan & Co. Inc., and Hogan Lovells US LLP. The Carlyle Group and Riverstone Holdings LLC were advised by PricewaterhouseCoopers and Latham & Watkins LLP. Equity capital for the transaction came from Carlyle Growth Partners III LP, Carlyle’s North American growth equity fund; Riverstone/Carlyle Global Energy & Power Fund IV LP; and management.

Oilsands cancels oil shale asset sale to Canshale

Oilsands Quest Inc. has cancelled the sale of its oil shale assets located near Pasquia Hills, Saskatchewan to Canshale Corp. Canshale was unable to raise a minimum of CDN\$12.5 million by July 30 – a condition of the agreement. Total consideration for the sale would have been CDN\$1 million in cash and 10 million shares of Canshale.

Wapiti pays \$130M for Delta Petroleum assets

Wapiti Oil & Gas LLC has purchased \$130 million in assets from Delta Petroleum Corp. The acquisition includes all of Delta’s acreage position in Laramie County Wyoming in the Niobrara section of the DJ Basin, and Eagle Ford Shale acreage in Atascosa and McMullen Counties, Texas. Also included is a position in the Garden Gulch Development Project in the Piceance Basin. Wapiti Oil & Gas LLC, an affiliate of Houston based Wapiti Energy LLC, is a privately held E&P company. In conjunction with the acquisition, Wapiti added a group of strategic equity investors, including Zell Credit Opportunities Master Fund LP and Mantucket Capital.

Devon finalizes Azerbaijan asset sale to BP for \$2B

Oklahoma City-based Devon Energy Corp. has completed the sale of its ACG field located offshore Azerbaijan in the Caspian Sea to BP for \$2 billion. Devon’s current production from the ACG field is nearly 17 thousand barrels of oil per day. The sale is one of the last parts of Devon’s strategic repositioning to focus on its North American onshore assets.

Select Energy Services expands in Haynesville

Gainsville, Tex.-based Select Energy Services LLC, an oil service and supply company, has acquired Kerkis LLC, doing business as Rebel Well

Testing and Rental. Rebel is an oil service company based in Troup, Tex. that specializes in well testing and flowback services for high-pressure oil and gas wells. Founded in 2005, the company provides its services throughout the continental US with primary concentration in the Haynesville, Barnett, Marcellus, and Bakken shales. The acquisition adds roughly \$15 million of revenue and 60 employees to Select. Chris Bruegger, Rebel’s founder, will remain with Select as a shareholder and the Service Line vice president for Flowback Services.

Nabors Industries to acquire Superior Well Services

Onshore contract drilling firm Nabors Industries Inc. will acquire oilfield services company Superior Well Services Inc. in an all-cash transaction for \$22.12 per common share, or \$900 million. Should the transaction not close, Superior Well Services may be required to pay Nabors a \$22.5 million termination fee and reimbursable expenses of up to \$5 million. UBS Investment Bank and Milbank, Tweed, Hadley & McCloy LLP acted as advisors to Nabors, while Simmons & Co. International and Latham & Watkins LLP advised Superior Well Services. Standard & Poor’s placed its ‘BBB+’ corporate credit and issue-level ratings on Nabors on CreditWatch with negative implications. The rating comes as financing for the transaction has yet to be announced.

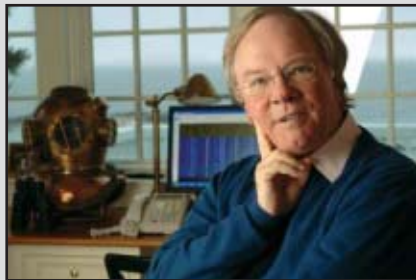
Regency Energy Partners to acquire Zephyr Gas Services

Regency Energy Partners LP plans to acquire Houston-based Zephyr Gas Services for \$185 million, funded under its revolving credit facility. Zephyr’s assets closely align with Regency’s Gathering and Processing and Compression segments. Regency expects to integrate Zephyr’s management into its Contract Compression segment.

Energy Players

Notable energy industry figure Matt Simmons dead at 67

Matt R. Simmons, founder and former head of Simmons & Co. International, passed away from an apparent heart attack on Aug. 8 at his home in North Haven, Maine. Simmons, 67, was a former adviser to US President George W. Bush and was well known in the energy industry and around the world for his bold predictions on “peak oil” and the future of energy. Simmons had recently parted ways with Simmons & Co. International to concentrate his efforts on another venture, The Ocean Energy Institute, a think-tank and venture capital fund addressing the challenges of US offshore renewable energy. He founded the institute in 2007. “We are deeply saddened by the unexpected loss of a true visionary and friend,” said Simmons & Co. chairman, president, and CEO Michael E. Frazier. “His dedication, enthusiasm and passion for all things involving energy were unparalleled by anyone in the industry. Matt’s devotion to our firm was an inspiration to all of us to work hard to achieve the highest standards. He was a mentor to many, but none more than me. I will deeply miss my friend,” said Frazier. Simmons leaves behind five daughters, a devoted wife, Ellen, and many friends, supporters, and colleagues.



Expro’s main board. Graeme Coutts will revert to the position of chairman, a role he had occupied previously until February when he stepped back in as chief executive.

Mey joins Atwood Oceanics as CFO

Atwood Oceanics Inc., a Houston-based international drilling contractor, has hired Mark L. Mey as senior vice president and CFO. Mey will oversee Atwood’s financial function, investor relations, and global supply chain. Mey brings more than 20 years of experience in the energy and financial services industries in the US and South Africa. He was most recently senior vice president and CFO and director of Scorpion Offshore Ltd. Previously, he was at Noble Corp. for 12 years serving, most recently, as vice president and treasurer. Mey holds an advanced diploma in accounting and a bachelor of commerce degree from the University of Port Elizabeth, South Africa. He is a chartered accountant and attended the Harvard Business School Executive MBA Advanced Management Program.



Mey

Occidental Petroleum makes top management changes

Occidental Petroleum Corp. has made changes in executive management, naming James M. Lienert executive vice president and CFO, and electing Stephen I. Chazen president and COO. Lienert served as the company’s executive vice president, finance and planning since 2006. Previously, Lienert served as president of Occidental Chemical Corp. (OxyChem). He joined OxyChem in 1974. He holds a bachelor’s degree and an MBA from the State University of New York at Buffalo. Chazen has served as president and CFO since 2007. He has 30 years experience in the industry. He joined Occidental in 1994 as executive



Chazen



Lienert

vice president – corporate development. He was named CFO in 1999 and elected president and CFO in 2007. He was elected to the board of directors in 2010. Prior to joining Occidental, Chazen was a managing director in the investment banking group of Merrill Lynch & Co.

Expro taps Woodburn CEO

International oilfield service company Expro has appointed Charles Woodburn as CEO. Woodburn is a UK national who graduated from Cambridge with a PhD. He joins Expro following a 15-year career with Schlumberger where he held senior management roles including president of Wireline up to 2009. Latterly he was in charge of Schlumberger’s engineering and manufacturing, reporting directly to the executive vice president of oilfield services. He has been appointed to



Woodburn

Sanchez joins RiskAdvisory as ETRM consultant

RiskAdvisory, a division of SAS, has named Charlie Sanchez an Energy Trading & Risk Management (ETRM) industry consultant focusing on oil and gas trading operations. Sanchez comes to RiskAdvisory with over 11 years of experience in the energy industry. He held several senior positions with the international energy commodity risk management services consultancy Gelber & Associates, including vice president for



Sanchez

Energy Players

energy markets, director for Energy Risk & Trading, and quantitative analyst/energy commodities broker. Most recently, he served as director of risk controls with SourceGas LLC. He received his bachelor's degree from Rice University.

Cullen/Frost Bankers adds former ExxonMobil general counsel to board

Charles W. Matthews, former general counsel of Exxon and Exxon Mobil Corp., has been named to the board of directors of Cullen/Frost Bankers Inc., the financial holding company of Frost, as a Houston director. Matthews spent his entire career at Exxon, joining the company's law department in 1971 and rising to become vice president and general counsel of Exxon Mobil Corp. He was responsible for coordinating the legal and regulatory efforts to facilitate the merger between Exxon Corp. and Mobil Corp. He retired from Exxon Mobil earlier this year. A graduate of the University of Texas at Austin, Matthews earned a JD degree from the University of Houston. Among his many accomplishments, Matthews is an active member of the American, Texas, Houston and Dallas Bar Associations and a Bar Foundation Fellow. He serves on the board of the National Center for State Courts and has served as co-chair of its General Counsel Committee. He serves on the board of The Center for American and International Law, and on the board of the Texas Judicial Foundation and also served on the board of the Texas Center for Legal Ethics and Professionalism. In 2008, the Texas Supreme Court appointed him for a second term as Commissioner of the Texas Access to Justice Commission. He is a member of the advisory board and the past chairman of the University of Houston Law Foundation. He is



Matthews

chair-elect of the University of Texas Development board and is a member of the board of the University of Texas System Foundation.

Miriam Westmoreland joins Burleson Cooke

Miriam P. Westmoreland has joined law firm Burleson Cooke as director of marketing and recruiting. Westmoreland has more than 20 years of experience in retail marketing and business development, and is a member of the Association for Corporate Growth, the Houston Association of Legal Recruitment Administrators, and the Legal Marketing Association. She earned her undergraduate degree from the University of Texas at Austin.



Westmoreland

GE Energy appoints Ottawa energy official as Canada country executive

GE has appointed former federal government and petroleum industry veteran Keith Trigriner as GE Energy's new country executive in Canada to oversee the company's commercial initiatives in the region. Trigriner will be responsible for leading GE Energy's commercial strategy in Canada as the federal and provincial governments intensify their efforts to modernize the country's energy infrastructure, boost alternative energy production, and reduce greenhouse gas emissions. Prior to joining GE Energy, Trigriner served as director of strategic policy and emerging issues in the oil, gas, and alternative energy division of Environment Canada, the federal environmental agency in Ottawa. Trigriner also will oversee GE Energy's business initiatives in the Canadian petroleum industry. Before joining the government, Trigriner served as vice president of industry issues for the Canadian Petroleum

Products Institute after a 25-year career in energy business development with Siemens Canada, Foxboro, and Esso. He holds an MBA from Simon Fraser University, B.C. Canada Faculty of Business.

Price elected to replace Rooney as Gstar chairman

Gstar Exploration Ltd. has elected Floyd R. Price as chairman of Gstar's board of directors replacing John Rooney who stepped down as chairman due to the increased demands related to his role with Northern Blizzard Resources Inc. Rooney continues to serve as a director on Gstar's board. Price was elected to Gstar's board in June 2010. He recently retired from Apache Corp. where he most recently served as executive vice president and exploration officer. He holds a bachelor's degree from Rutgers College and a master's degree from the University of Michigan. Price is currently the chairman of the board of directors of Tamarack Valley Energy and also serves on the board of Source Energy.

Energy, transactions attorney White joins Thompson & Knight

Law firm Thompson & Knight LLP has added energy and transactions attorney Hunter H. White as a partner in the oil and gas practice group in the firm's Houston office. He holds 20 years of legal experience including a wide range of oil and gas transactions, in addition to other work in the energy industry that includes asset and stock sales, operational and financial transactions, management agreements, and other energy-related matters. White joins the firm from Andrews Kurth LLP, where he served as a partner in the business transaction section. White is an honors graduate of the University of Houston Law Center. He earned his undergraduate degree, with high honors, from The University of Texas.



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DEEP WATER SAMBA

As part of the team planning and designing the evaluation and production development phases of one of the world's most outstanding exploration frontiers, José Formigli, executive manager of Petrobras E&P Pre-salt, considers himself fortunate. Petrobras will invest \$30.9 billion in pre-salt up to 2014.

"Via radio and fax, when working offshore back in the 1980s", Formigli recalled, "we knew we were doing something special and we also could identify how difficult it might be for the decision makers at the time to tell us what the best move would be to make."

Brazil is the rising star of the Western Hemisphere for the oil & gas industry following the offshore finds in pre-salt. With a predicted production level of 2.7 million bpd and a domestic consumption level of 2.5 million bpd in 2010, the nation is only beginning to assert itself as a net exporter and has set a course to be the next big oil powerhouse.

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Brazil's goal to rank fifth among the world's top oil powerhouses

Last June Petrobras CFO and investor relations director Almir Guilherme Barbassa announced the 2010-2014 Business Plan. Investments total \$224 billion, representing an average of \$44.8 billion per year.

The plan foresees \$212.3 billion (95%) will be invested in Brazil and \$11.7 billion (5%) abroad and includes significant utilization of the domestic supplier market, with local content forming 67% of total investment. The E&P segment will invest \$118.8 billion to target production of 3.9 million barrels of oil equivalent per day (boe) in 2014 and 5.4 million boe in 2020.

The lower production target for 2020, when compared to the previous 2009-2013 plan (of 5.7 million boe) is a consequence of reducing international production goals due to lower future investments. "Because of our opportunities in Brazil, reduced emphasis will be placed on Petrobras' international E&P activities," said Barbassa.

As a first step for establishing a new regulatory framework regarding the exploitation of crude oil under Brazil's pre-salt layer offshore, President Ignacio Lula da Silva signed a landmark bill last July governing the capitalization of Petrobras.

Business Segment	Domestic Investment 2010-14	Purchased in the Domestic Market 2010-14	Brazilian Content (%)
E&P	108.2	57.8	53%
Downstream	78.6	62.8	80%
G&E	17.6	14.4	82%
Distribution	2.3	2.3	100%
Corporate Areas	2.3	2.3w	100%
E&P	3.3	2.6	80%
Total	212.3	142.2	67%

Source: Petrobras

In a favorable context, Petrobras expects to have the largest availability of drilling rigs for deep-water than any other oil company, with a total of 26 rigs by 2014 and 53 by 2020 and 504 support vessels by 2020 (254 in 2009). Projected investments in refining, transportation, and marketing are budgeted for \$73.6 billion.

The feedstock processed in Brazil is expected to reach 2.3 million bpd in 2014 and 3.2 million barrels in 2020. Thus, Petrobras will be prepared for the increasing demand for derivatives in the domestic market, projected to reach 2.4 million bpd in 2014 and 2.8 million bpd by 2020, Barbassa concluded.

The Brazilian content is expected to represent approximately \$28.4 billion per year of Petrobras' capex and will help to create a supply hub in Brazil.

Entering a new phase

Due to uncertainties in the market caused by changing rules and canceling bidding rounds and by reviewing the distribution of royalties, expectations for the acquisition of blocks in the pre-salt region did not materialize.

It's not really a question of what share of the market a company conquers, but rather a question of understanding what Petrobras's requirements are and where they would like to go in terms of developing a better understanding of the geology of their own blocks or preparing for blocks to be awarded by the ANP in a future round.

CGGVeritas' country manager in Brazil, Patrick Postal, identifies at least 3 major periods wherein independent or international operators came to explore the Brazilian market. The first was from 1997 to 2006 when the business model ran more or less as it was originally set up to run. During this period, a number of global companies entered Brazil and local companies entered the oil and gas business.

Unexpectedly, from 2006 to 2009, bidding rounds were cancelled and blocks taken out of bidding. "It was nothing serious but at the end of the day it cast a different light on a system that had succeeded in attracting a lot of interest," he said.

"Now we are in a third phase where we can see a form of a secondary market with companies leaving and selling assets while other players are looking to buy these



Jose Formigli, executive manager, E&P Pre-salt Petrobras



Patrick Postal, country manager, CGGVeritas

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GE imagination at work

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assets," Postal explained.

Globally for the geophysics industry, it has been a rougher time than in 2007. "But it has been somewhat different in Brazil," Postal thinks. "Firstly, like many large National Oil Companies (NOCs) that manage their assets over the long term, Petrobras did not change its capital expenditure program in Brazil. Secondly, concession-holders were still in the process of building their oil and gas properties. People received their concessions and they had obligations to invest in seismic surveys in a set period of time."

He continues, "To stay one step ahead in the offshore acquisition segment, CGGVeritas presented its SerCEL Nautilus steered Sentinel solid streamers."

Postal also affirmed that "wide-azimuth is a very effective advanced technology CGGVeritas operationally brought to the market, particularly as the pre-salt fields are developed as it provides information previously unavailable with older techniques and a much clearer image for a more accurate interpretation of the reservoirs in this complex salt environment."

Industry waiting new bidding rounds

In general, executives hope that with the changes in the market out of the way, a new ANP auction will be announced, either in the later months of this year or next year, and the offshore acquisition segment of the market will be able to sell data to many interested parties.

Another option is that there may be large oil and gas companies with strong offshore deepwater operation capabilities who would like to partner with Petrobras, if the new model is adopted the way it is being proposed to the Congress (regarding royalties).

"We need other options to develop in Brazil and be a bigger part of the business," noted Statoil's president Kjetil Hove.

"At present, Statoil's very attractive portfolio will carry the company over the coming 18 months. However, I think it's important both for Statoil and every other operator in Brazil that new opportunities are put on the market," he concludes.



Kjetil Hove, country president, Statoil Brazil



Paulo Mendonça, general director, OGX

"We must increase our portfolio to grow the company, and after such an aggressive exploratory campaign, it will be very hard for us to develop more fields if the ANP does not offer more blocks," concurs Paulo Mendonça, general director of OGX.

OGX, founded in 2007, has shaken up Brazil's oil industry with its huge success. Today OGX is the second largest oil company in Brazil after Petrobras with the amount of offshore acreage it owns.

OGX announced on August 12 that, through its subsidiary OGX Maranhão, it has identified gas in the onshore basin of Parnaíba. "This discovery opens a new exploratory frontier in an onshore basin, the first in two decades. It is important to note that this exploratory campaign was initiated in October 2009 and is conducted by Brazilian companies, obtaining important results in record time," commented Mendonça.

Room for smaller players

"If we look at the future, as I see Brazil looking much the same in the coming three years. Petrobras will have a better understanding of the pre-salt and there will be other pilot projects up and running. I hope that the license rounds will return in the non-pre-salt regions as well as clarification for the pre-salt itself," Kjetil Solbræke, NBH/Panoro's CEO forecasted.

He hopes, "I would like to see our company starting up production in the BS-3 area as well as discovering new potential in our round 9 licenses. I also expect to see consolidation in the market between independent operators as companies realize cooperation is the best approach to the Brazilian market and I think we will play a role in this. When you compare us to Petrobras – who is a giant – or OGX – who wants to be a giant – as well as the IOCs that are here, we are very different."

NBH/Panoro Energy ASA is an international independent oil & gas company with offices in Rio de Janeiro, London and Oslo. The Company holds a balanced portfolio of production, development and exploration assets in the Santos and Camamu-Almada basins offshore Brazil, as partner and operator.

The merger with Pan-Petroleum, a company with assets in Nigeria, Gabon and Congo, will create a strong E&P independent with a significant resource base of approximately 200 million boe, focusing on both sides of the South Atlantic.

Developing the supporting technologies

Javier Moro, Repsol Brazil president recalls, "We were the first part-



Kjetil Solbraekke, CEO, NBH/Panoro

ner of Petrobras which was an interesting experience both for them and for us."

"The Campos basin is receiving a lot of renewed attention due to the production figures Petrobras wants to reach. That being said, BM-S 9 with whom we are partnered with BG and Petrobras, is going to be our biggest asset in the next two to three years," "Santos basin is one of the key projects for Repsol internationally," he added.

"The government today is trying to define what the pre-salt region is but this is a country-making find. What government in this world would allow



Javier Moro, president director,
Repsol Brasil

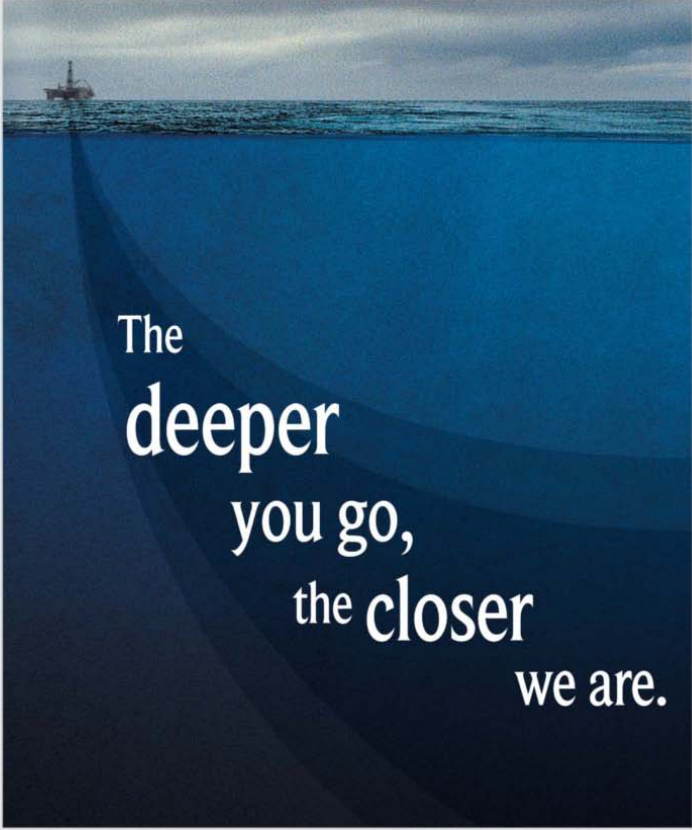
this discovery to be developed without having a say? Brazil had a goal of obtaining hydrocarbon resources and accessing them which they fulfilled. The problem today is in the secondary sector, with the development of supporting technologies and a workforce that can keep up with the growth. This is a big opportunity for companies all over the world to come to Brazil and be a part of developing what has already been found," observed Moro.



Manati Field, NBH/ PANORO ENERGY

LOOKING PAST CARNIVAL AND SOCCER Real opportunities ahead

Fernando Martins, responsible for all GE's Oil & Gas portfolio in Brazil, including VetcoGray, recalled that CEO Jeff Immelt announced early this year the decision to build GE's fifth Global Research Center (GRC) in Brazil.

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Fernando Martins, VP Latin America,
GE Oil & Gas

"We are considering the hiring of more than 200 engineers to work in the R&D facility," he said. "GE Oil & Gas in Brazil started the year very well by securing some important orders such as a contract for Petrobras' new Comperj petrochemical complex. Serving the market both in the upstream and downstream in Brazil, GE is another player acknowledging a tremendous amount of growth in the market. Main clients

are Petrobras and OGX. To provide technical support, GE has a field services unit in Macaé."

"So far, the eight drillships being ordered by Petrobras to the local market will require 32 turbines as well as 48 compressors. It's just the beginning of the 28 unit plan (drillships and vessels) that has been detailed to the industry."

"Just a few weeks ago GE delivered two complete compression modules for the P-56 platform. At a certain point, the building process required 600 employees. This was an initiative to increase our local content so we

imported the skids but managed to make the modules with 65% local."

"GE Oil & Gas secured the largest contract with Petrobras for well-heads for \$250 million worth of orders. Petrobras has strict technical requirements and they usually ask for customized systems. For instance, for the contract mentioned takes an estimated 200,000 engineering hours for the four custom systems."

"When it comes to Subsea Wellhead Systems we are very well positioned and we want to keep that way. On subsea production systems, subsea trees and manifolds, for example, we have a lot of opportunities to improve."

Critical success factor

John Oliver, senior vice-president of M-I Swaco South America said, "In the last 18 months, Brazil has been a critical factor for our success." Indeed, "In recent years M-I Swaco invested some \$100 million in infrastructure in the Brazilian market and has facilities in all of the key operational areas."

All four of M-I Swaco segments are represented locally. The drilling and the environmental solutions segments; the wellbore productivity group, and the production technologies segment providing production chemicals.

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John Oliver, senior VP South America, M-I Swaco

A new addition is the Deeptec Brasil joint-venture, formed to provide expertise to Operators and the shipyards in rig, FPSO and supply vessel construction. "This is a departure from M-I Swaco normal four segments," noted Oliver, "but it is important to help build the shipbuilding industry here in Brazil using both foreign expertise and local content."

"All credit has to be given to our Brazilian staff who have believed in the market and maintained a relationship with Petrobras which represented much of the industry for many years," highlighted Oliver. "Our employees also seized the opportunity to pursue the IOCs market when it first opened up. They believed in the future and made the necessary investments to serve this segment."

"However, it's very competitive so while the top line growth is there it can be a struggle in terms of profitability. That being said, the activity levels here have been a significant help over a period when worldwide, the rest of the industry was really struggling," warned Oliver.

Oliver concluded, "The dream projects in Brazil are participating in the new rig builds because what we want to do is bring customization to the design process. This is why we've founded a Brazilian joint venture to establish Brazilian expertise."

The leading directional drilling company

"Today, we are the leading directional drilling company for Petrobras with 50% of the market share for the past three years. In order to maintain this position, we need to continue investing within the country, not only in infrastructure but also people. Therefore, we are engage in significant knowledge transfer to develop the local talent," explained Ney, Baker Hughes' president for Latin America.

The company's overall scope of operations includes from reservoir characterization to production. "Our artificial lift product line enjoys the highest market share in electrical submersible pumping (ESP) systems in Brazil and will continue to grow as more subsea and deepwater projects develop. Of course, drilling is a big focus in the market now, given the exploration and development of the newest offshore fields," he said.

"We have broken our own drilling records in the new discoveries. The faster and more efficiently you drill the more money you can save," said Ney. "We have also signed agreements with five different universities



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for technical cooperation, personnel development and sourcing."

Recently, Baker Hughes signed a technology cooperation agreement with Petrobras as they seek to lower the cost of production in new fields in order to make it feasible at oil price levels of \$45 per barrel. "They feel the best way to do this is to develop the technology locally," noted Ney.

Baker Hughes has five geo-markets in Latin America and the growth has not come from every one of them. "We have seen considerable growth in Mexico, Brazil and the Andean countries - including Colombia, Ecuador and Peru. Two geo-markets have been relatively flat in recent years, Venezuela and the South Cone, mainly driven by Argentina."

Minds are changing

"The people here are open and cognizant of the fact that we cannot live without foreign capital. The challenge to explore the pre-salt region is enormous and it's impossible to think that Brazil alone



Nelson Ney, president - Latin America, Baker Hughes

can face it, regardless of what the politicians say. Starting in the early 1990s we began to redesign Brazil so the country today is very different to that of yesterday," Eduardo Gouvêa Vieira, president of the Federation of Rio de Janeiro's Industries (Firjan), explained.

For him, the combination of these factors makes Brazil an attractive nation for outside companies to invest in as they know they are protected by the environment established here. "The changes are evident, for example the Brazilian National Development Bank BNDES used to be exclusively for domestic companies yet today is open for all," explained Firjan's president.

"We (Firjan) work to develop local companies as well as bring business to the city. To do this we need to make sure the community has the necessary qualifications for business and provide economic studies on the region. On top of these responsibilities we seek to aid those employed to receive appropriate healthcare in order to create a better life for them and the companies. Firjan is completely apolitical but we work alongside municipal, state and federal governments in order to fulfill our responsibilities," he concluded.



Eduardo Eugenio Gouvêa Vieira, chairman, Firjan

Exporting the experience

"Although it's not the easiest market to work in, Brazil is booming at the moment. Many companies invested in locations like Europe when maybe they should have invested in Brazil and this is especially true in segments like shipbuilding," said Trico Marine's director Per Thuestad.

Trico Marine Group derives from the 2008 addition of Deep Ocean and CTC to Trico Offshore, which coincidentally occurred just after Trico arrived in Brazil to establish operations and just before the start-up of





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Having recently merged with Pan-Petroleum, a company with assets in Nigeria, Gabon and Congo, Panoro Energy is a strong E&P independent with a significant resource base of approximately 200 MMBOE, leveraging global experience to focus on both sides of the South Atlantic.



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Per Thuestad & Matheus Vilela, general manager & marketing-sales manager, Trico Marine Group

the group's first contract with Petrobras.

"The offshore operations are important to the group as they allow us to bring in vessels to Brazil which supports the rest of our operations as a local subsea company. As a whole, the group is changing its strategy from a towing and supply focused company into a more subsea-centered business. Today, this means we are selling older vessels, keeping the new ones and transferring some into our subsea services segment," he explained.

"A good example of how our know-how can be taken from the Brazilian market to be applied elsewhere would be our plans to offer our subsea services in West Africa based on our experiences here. As a result of this initiative, the Trico Marine Group VP Americas and West Africa is actually relocating to Brazil. These locations have similar aspects when it comes to deepwater possibilities and we want to take advantage of that," complimented Trico Marine's marketing and sales manager for Brazil, Matheus Vilela.

WHERE THE PARTY IS !

The fast success of Lupatech, which only recently decided to create a new company called Lupatech Oilfield Services, reflects booming opportunities in Brazil.

"As a result of our efforts we've recently been able to capture a five year, \$779 million contract with Petrobras to provide offshore services. We're offering a technical solution at or above the level of others in the market and we're doing it at the best price so this was not a decision of national or international but rather a technical one. That being said, we're a young player in the oil and gas arena and at the beginning of our history as an upstream services provider. Looking at the market today, the conditions to grow are there," anticipates Nestor Perini, Lupatech's president.

No bad weather for deeper tow-depths

In 2008 Petroleum Geo Services' (PGS) with Petrobras signed a \$250 million high-density 4D contract. At the time, Jon Erik Reinhardsen, CEO of PGS, commented that this was a big breakthrough for the company because it was not only industry-leading technology but also industry-leading design meeting one of the biggest markets in the world right now.

PGS strategy is to refocus on marine acquisition and the deployment of its Ramform technology, meaning that PGS sees a market for its new technology in Brazil. Later this year PGS will bring in a 3D vessel to shoot a 3D GeoStreamer program.

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**Alex Vartan, managing director,
Petroleum Geo-Services (PGS)**

PGS has been working with the GeoStreamer technology for many years. According to Alex Vartan, managing director of PGS Brazil, "if you look historically at streamer acquisition, the technology of the streamer itself has not really changed in 30 years or more. PGS, however, has been able to co-locate a hydrophone and a geophone in the same cable, which means that it can deploy this cable

at deeper tow-depths."

"In effect, oil companies can benefit from a better bandwidth of data with more penetration, which is great for the pre-salt here in Brazil, while the company gains from greater efficiency because the streamer is deployed at a greater tow-depth meaning GPS is not shut down for weather nearly as often."

Weather is an enormous issue, Vartan warns. Typically on a survey, as an industry we are shut down for maybe 40% of the working time out on the ocean.

Brazil's Onshore Bet: Other data acquisition technology

The onshore business right now is not as big as the offshore, but when you compare the investment in seismic acquisitions onshore with offshore, they are pretty much the same size. One quick look at the offshore business reveals that the majority of the investments are for drilling, development and production, not seismic.

The combination of PGS Onshore and Geokinetics in Latin America strengthened the company's position. Now the industry has the biggest company involved in onshore and ocean-bottom cable (OBC) data acquisition available. "Through this acquisition we doubled our asset capacity and we put our faith in markets where we did not yet have a presence," said Darci Matos, Latin America vice-president at Geokinetics Brazil.

"As OBC involves offshore up to 300 meters of water, we are not in the deepwater business in Brazil. Since a couple of years ago ANP started investing heavily in the onshore basins with plans to invest around \$100 million per year in seismic in so called new frontiers basins. Currently ANP is conducting a bid process for two projects in Amazon and Acre basins. Last year three other projects were bid: Parecis, São Francisco and Paraná basins."

Geokinetics has two crews in operation in Brazil; one is working for Petrobras in a four years contract. The other one was working for ANP, finished the São Francisco 2D project and is mobilizing for other client in Potiguar Basin. Furthermore, there are 5 bids outstanding in the market which award should come within the second half of the year. Petrobras has plans to bid at least three more projects till the year ends.

Scope of operations in today's market

C&C entered Brazil with its autonomous underwater vehicles (AUV) offerings nearly a decade ago. Now it provides services that involve measurement of water properties to seabed topography, and to seabed soil characterization

"Due to the structure of the Brazilian market, the majority of our resources are absorbed by the main oil & gas operator in Brazil," said Donizeti Carneiro, C&C's South America general director.



**Darci Matos, VP Latin America,
Geokinetics**



**Donizeti de Jesus Carneiro, general
director of South America division,
C&C Technologies**

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"We use vessels as platforms to launch equipments, covering the depth range from ultra shallow till our current technological capability of 4500 meters and our clients use these parameters to assist their underwater infrastructure construction. This is slightly broader than what C&C offers in the US, where the focus is seafloor mapping, surface and acoustic positioning. In Brazil the company has enlarged its scope of services on demand by clients after the success of our seafloor mapping," explained Carneiro.

He added that the company was asked to help in oceanography and environmental monitoring, which today makes up a good part of their revenues in the local market. "Headquarters has seen the positive response to these operations and are now considering implementation of similar services in the US," said Carneiro.

"With offshore positions you need to multiply your crew needs by four times due to both 24-hour operations and crew rotation. After the first two years, a vessel must operate in Brazil with 66% local content. One of the issues we have to tackle is that the know-how to operate our AUV technology rests in the hands of a few members. We have to disseminate this knowledge to the local workforce and incorporate more local talent," concluded Carneiro.

Petrobras to invest \$10 billion annually in ultra-deepwater

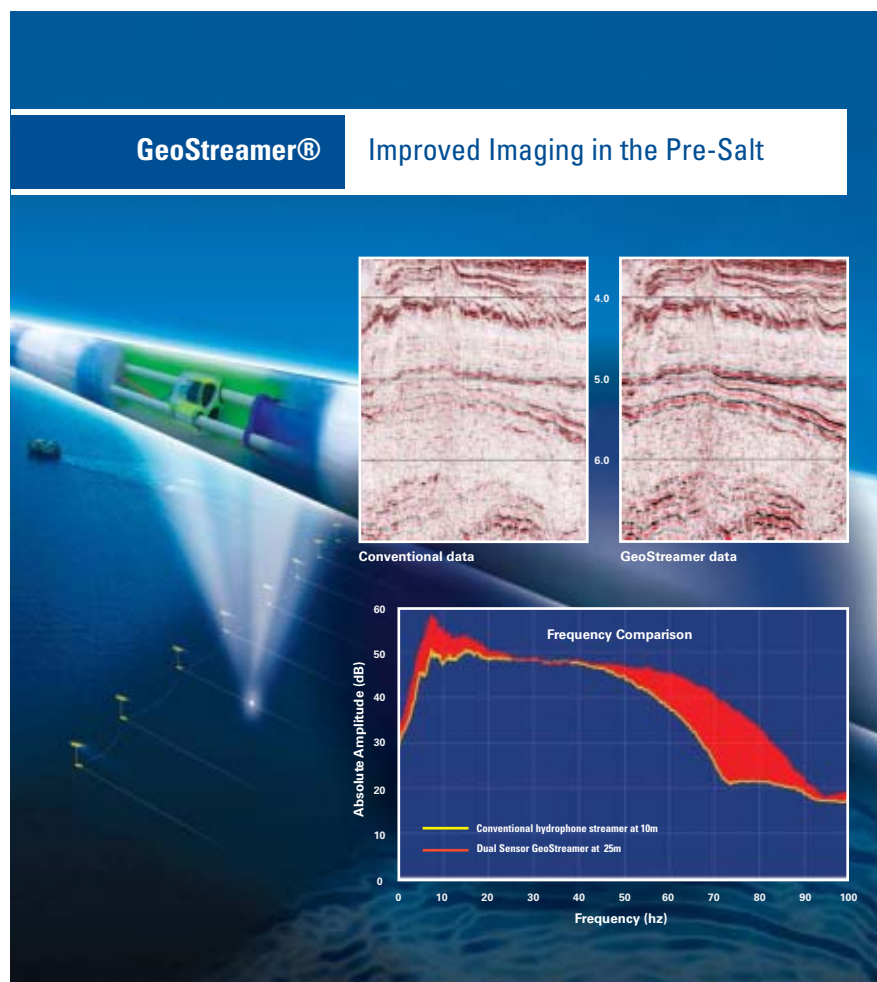
For a niche player in ultra-deepwater the Brazilian market is a pretty obvious choice. Petrobras alone is looking to invest up to \$10 billion annually in this field.

Pacific Drilling's first step was to put the operations vice-president Cees van Diemen in Brazil, which is a sizable move. Pacific Drilling has also adjusted the specifications of their rigs to meet Petrobras' own technical requirements which are fairly unique.

Van Diemen conjectures that Brazil is seen as a base by which to expand operations elsewhere due to the amount of wells being drilled here and the challenge presented in drilling each one creates a good learning curve for a company.

"It's also important to emphasize that there are many talented, well educated people here in Brazil." However, van Diemen warns, "There are really two challenges to face. First, you have to bring the rig into the country and there's only one way to do this and that's 100% by the rules of the country: don't think that you can bend the rules. This requires the appropriate preparations by engaging companies in Brazil to help in tasks such as making the inventory of the rig and filing the paperwork for importation."

Cees van Diemen, VP Operations, Pacific Drilling



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Opportunity & competition

"It's a very exciting moment for Astromarítima Navegação, very important due to several events on the horizon. Firstly, we have to renew 10 of 14 contracts with Petrobras in a difficult period of high competition. It's a challenge but we're very happy with the success," said Renato Cabral, director president.

"This business started successfully in 2009 when we operated two to three vessels at any given time. By contrast, by the end of 2010 we expect to run more than 20 vessels," Cabral added.

The executive warns that local content is a very important factor and in particular, the legislative protection that comes for vessels built in Brazil. The government is interested in developing the industry including shipyards, supply vessel groups and oil companies so they've been making a big push in this regard. Moreover, the economic situation of Brazil has improved a lot over the years making it more appealing financially to construct here.

The challenge is to maintain these businesses and keep the vessels running.

Presently, the local operations represent a significant part of the group's revenues. This is explained by two simultaneous factors: the fast growth of the local operation, concurrently with the slow-down in the Gulf of Mexico.

Cabral believes there is a space for everybody in the Brazilian market because Petrobras wants to double its production from now through 2020, which is obviously a big move and Astromarítima Navegação wants to be part of it.



Renato Cabral, president,
Astromarítima Navegação

Van Diemen's dream project is to have multiple rigs in the market run by Brazilian people who can also supply other regions of the world

where the company operate. "I would like to take what Pacific Drilling learns from here, drilling in the pre-salt, and apply to other areas."



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SHIPPING - offshore and marine construction and conversion

Early July, President Luiz Inácio Lula da Silva launched to sea the first vessel under the Transpetro Fleet Modernization and Expansion Program (Promef), at the Atlântico Sul Shipyard (EAS), in the Northeastern state of Pernambuco.

Brazil was once the second largest naval constructor in the world during the 1970s but lost its position over the course of the 1980s and 1990s. Promef was launched in 2004 to revitalize the shipbuilding industry on globally competitive bases, based on the placement of orders for 49 vessels.

"Once Luiz Inácio Lula da Silva obtained the presidency in 2002 with Dilma Rousseff as his Chief of Staff, they began to look at the shipbuilding industry as one that could play a key role in Brazil," explained Ariovaldo Rocha, president of the Ships building and Repair Association (Sinaval).

In 2003, Petrobras incorporated into its five year plan the idea to build two platforms in the international market. "Through Sinaval's discussions with the government, we managed to convince Petrobras to place these orders in the domestic shipyards," explained Rocha.

"Currently there are 26 shipyards fiercely competing with one another



Pacific Drilling Bora
16-03-2010 side view

and there are 17 more being built so we perceive Brazil as a competitive market which is healthy. If you look at who is here today, you'll see the South Koreans, present through STX who has its own shipyard, and Samsung, who is partnered with Atlântico Sul. Hyundai has also joined the market recently through a partnership with OSX to build a large yard in Santa Catarina. Singaporeans are also here with Keppelfels' yard in the south of Rio de Janeiro state and Jurong building their own yard in



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Ariovaldo Rocha, president, Sindicato Nacional da Construção Naval (Sinaval)

Espírito Santo which is already building the hull of a platform and they have the intent to do the integration locally. The American company Edison Chouest is here with its own yard, Navship, from where they build vessels for both the Brazilian and US market. In fact, they use Brazilian financing through the MMF because anyone who builds in Brazil is automatically eligible for these incentives," analyzed Rocha.

With the Promef, Transpetro, the nation's largest oil and gas transportation company, which currently has 52 vessels on its fleet, will modernize and grow, topping out at more than 100 ships in 2014. This figure is expected to increase with the third phase of the program, slated to be launched later this year.

The first two phases of the Promef were conceived before the new discoveries were made in the pre-salt layer in the Santos and Espírito Santo basins, which points to the creation of new phases for the program already this year.

The newly launched Suezmax-type vessel is a historical milestone for the Brazilian naval and ship building industry. "This ship represents the first in a series of many others that will be built here. It is the beginning of a virtuous cycle for the sector," said Petrobras' CEO, José Sergio Gabrielli.

An early mover into the country, dating back from 1980s when it undertook various vessel repair jobs from Petrobras, the establishment of Keppel FELS Brasil in Rio de Janeiro and its BrasFELS yard in Angra dos Reis in year 2000 played a critical role in the revival of the local offshore and marine industry.

Through a sustained transfer of expertise, technology and systems from Keppel's Singaporean yards, BrasFELS has become the most comprehensive offshore and marine facility in Latin America. At full capacity, the yard is estimated to be able to complete an average of eight vessels a year.

Integrated steelwork to meet demand

Companhia Brasileira de Offshore (CBO) has been a player in the Brazilian market for over three decades. Founded in the late 1970s as an offshore service provider, today CBO belongs to the Fisher Group and has 17 vessels in operation: two for Statoil, one for Devon

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Ronaldo Lima, Director, CBO/Aliança Shipyard

and the others for Petrobras.

"Currently, we have eight vessels under construction for Petrobras, four of which will be delivered through 2011, while the other four will be ready by 2012. These have been a result of Petrobras's development program and we are currently bidding on several other vessels for them too, which means we're in a position to renew and increase our fleet. It's clear to us

that we have to grow and follow the progression of the market and with so many new players it's important to keep our market share," explained CBO director Ronaldo Lima of Aliança Shipyard.

"Today we can deliver up to three vessels per year but the demand is clearly booming so we need to increase the shipyard's capacity for the next years. In this line we are in the process of expanding our facilities, by integrating into our operations a steel work company that will be located 15 kilometers from our yard in São Gonçalo (Rio de Janeiro state)," added Lima.



Aliança Shipyard - CBO-SHIP

"Today, the Brazilian companies combined don't have a fleet large enough to block foreign vessels to come in. There are approximately 250 vessels operating on the Brazilian coast for Petrobras and other oil companies, half of which have Brazilian flag. In 2008 President Lula

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da Silva announced the 146 vessel program looking to replace the foreign vessels in the market," advised Lima.

FEITO EM BRAZIL

The challenge of local content

The local content initiative has been bolstered through a combination of higher tax rates on imported equipment that can otherwise be found locally and discounted borrowing rates from the National Development Bank of Brazil (BNDES) of 0.5%. The latter of which comes through the Merchant Marine Fund (MMF) who can help finance up to 90% of a newly built project given that those companies looking to receive its attractive support meet its local content demands: the higher content, the bigger benefit. Many have taken advantage of MMF program, including CBO who secured a 750 USD million loan, approved in June by BNDES, to fund 19 new PSVs that meet local content demands.

Of course, these initiatives for more Brazilian goods extend directly to suppliers. Flutrol, a Brazilian distributor and service provider for high pressure solutions, is a prime example of a local company developing with the market. Now approaching its 18th birthday, Flutrol has extended its offerings overtime from and instrumentation com-

ponent provider to pump distributor to solution assembler. Director Manuel Fernandes explains, "Initially we began distributing instrumentation components, valves and fittings. Later, we moved into pump distribution which is when we also began assembling solutions. Today we service practically every industrial segment in Brazil including automotive, petrochemical and oil and gas."



Manuel da Costa Fernandes, director, Flutrol

"Basically, we are importing components for integration. We add the frames, motors, instrumentation locally as well as the engineering, assembly and testing. The big question of the future is how do we deal with Brazil's costs? It can be difficult to compete with international companies, located outside of Brazil particularly at a time like today where there isn't so much business in Europe or the US market."

"These competitors are also working to make 5% profit margins which we cannot compete with," explained Fernandes.

Clarifying the tax exemption regime

Nevertheless many complex and specialized pieces of equipment are still necessary to import and as an answer, the government has developed the REPETRO program which is a tax relief system to bring in goods that could otherwise not be found locally.

Antonio Ferreira, president of the Brazilian Association of Oil & Gas Service Companies (ABESPetro) organization commented:



Antonio Ferreira, president, Abespetro

"Regarding the tax exemption regime, we need to be clear: this system only benefits (and the law was written for that) imports of products which Brazil does not produce locally. However, nowadays in Brazil, you cannot manufacture, for example, all the parts of a sixth generation rig, a cementing unit or a seismic vessel. While there is a push to increase local content, it will take time until the industry has the capacity to manufacture such specialized equipment, which makes the tax relief system extremely necessary. In summary, this is not a mechanism for foreign companies to obtain a tax break, but rather it's a mechanism to make the industry viable."

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Beyond the Well

Valero Texas Open raises \$8 million for children's charities



Mikaila Adams
Associate Editor – OGFJ

With more than 21,000 employees around the company, it's no surprise that midstream energy company Valero Energy Corp. has a big presence. That presence goes beyond its industry operations, and beyond the city limits of San Antonio where the company is headquartered. In 2009, Valero employees, called "ambassadors of hope and service" by the company, devoted more than 142,000 volunteer hours to improving people's lives and giving back to the communities where they live and work.

One of the company's most successful and popular charity ventures is The Valero Texas Open and Benefit for Children Golf Classic. What began as a small golf tournament to benefit a San Antonio charity is today a nationwide effort to improve the lives of children. The Valero Texas Open Benefit for Children Golf Classic has proudly delivered millions of dollars to children's charities in the US, Canada, and the Caribbean since 2002. Through our generous sponsors and business partners, Valero distributes their donations everywhere Valero has major operations. The result is a network of strong, well supported agencies with the means to help thousands of disadvantaged, abused, and neglected children.

The company first took over title sponsorship of the tournament in 2002. Since that time, the tournament has raised more than \$53 million for children's charities. Despite recent

economic difficulties, the event has continued to grow.

In 2009, the tournament was moved to a May date as part of the PGA TOUR's FedExCup competition and weekend television coverage on CBS. The event is now covered by The Golf Channel, and this year, after 15 years at the Westin La Cantera Resort, the event and 2,200 players were moved to the new TPC San Antonio and JW Marriott San Antonio Hill Country Resort & Spa in northeast San Antonio.

Despite the continuing economic difficulties, the tournament, for the fourth consecutive year, raised roughly

of funds to children's charities near the ethanol plants purchased by Valero last year in the Midwest.

As in years past, shares of the funds raised will go to children's charities where Valero has major operations. The charities are chosen by committees of Valero employees at each site.

"Once again, our sponsors and business partners have, through their efforts and generosity, come together to help us raise these funds for children's charities," said Mike Ciskowski, executive vice president and CFO, who headed up Valero's efforts in the tournament this year.

"We are truly grateful for the tremendous support of Valero Energy Corporation and its business partners," said Joe Linson, chairman of Golf San Antonio, the group that organizes the Valero Texas Open.

Golf San Antonio raises charitable dollars through its pro-am golf tournaments, the Birdies for Charity program in which nonprofit organizations solicit pledges for every birdie made during tournament week, and the Chip In for Schools program, which allows schools to sell discounted tournament tickets and keep all the proceeds.

Valero owns or operates 15 refineries with

a combined throughput capacity of approximately 2.8 million barrels per day, is a leading ethanol producer with 10 ethanol plants in the Midwest, and is one of the nation's largest retail operators. **OGFJ**



2010 Valero Texas Open winner, Adam Scott
Photos courtesy of Valero Energy

\$8 million for charity, once again putting the event in the ranks of the biggest fundraisers on the PGA TOUR.

As in past years, funds were raised through sponsorships sold during the event. Special to the 2010 event was a donation of \$50,000 was made to Feed the Children in honor of Valero's generous business partners and sponsors. Also new this year is the distribution



Event representatives announce this year's tournament proceeds.



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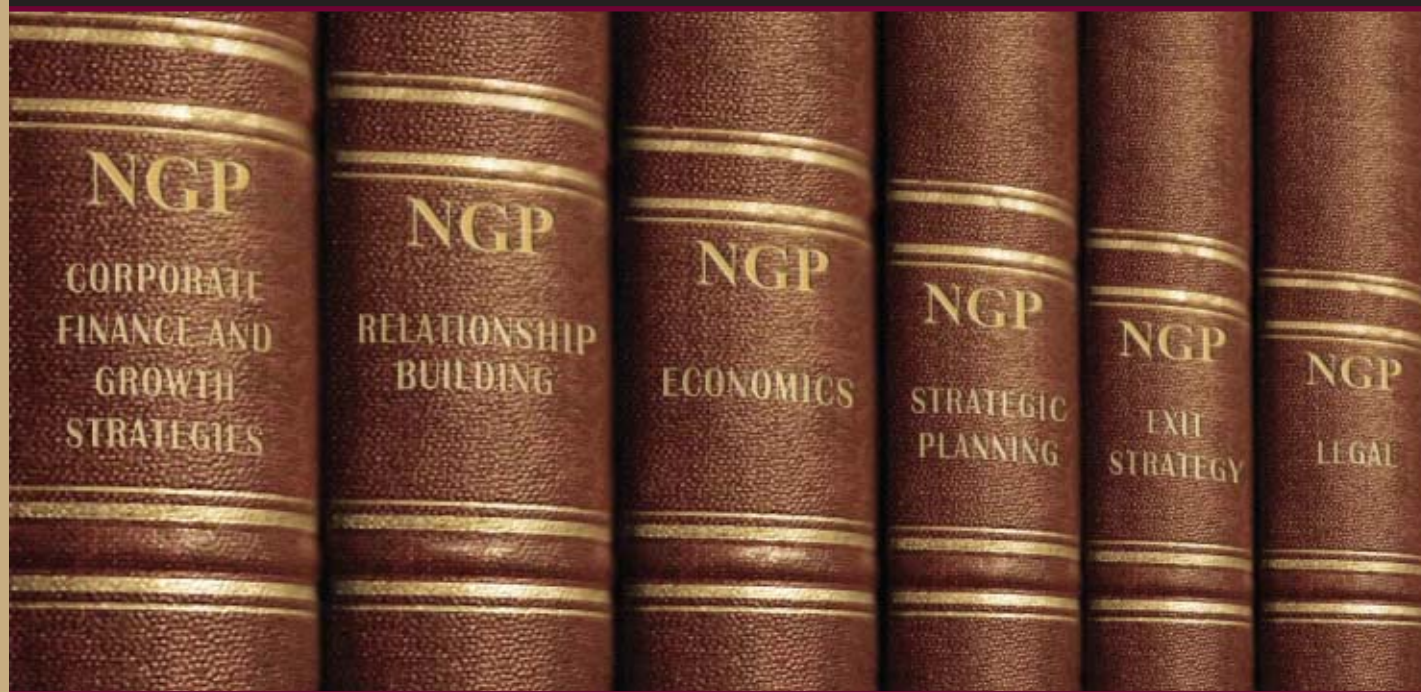
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