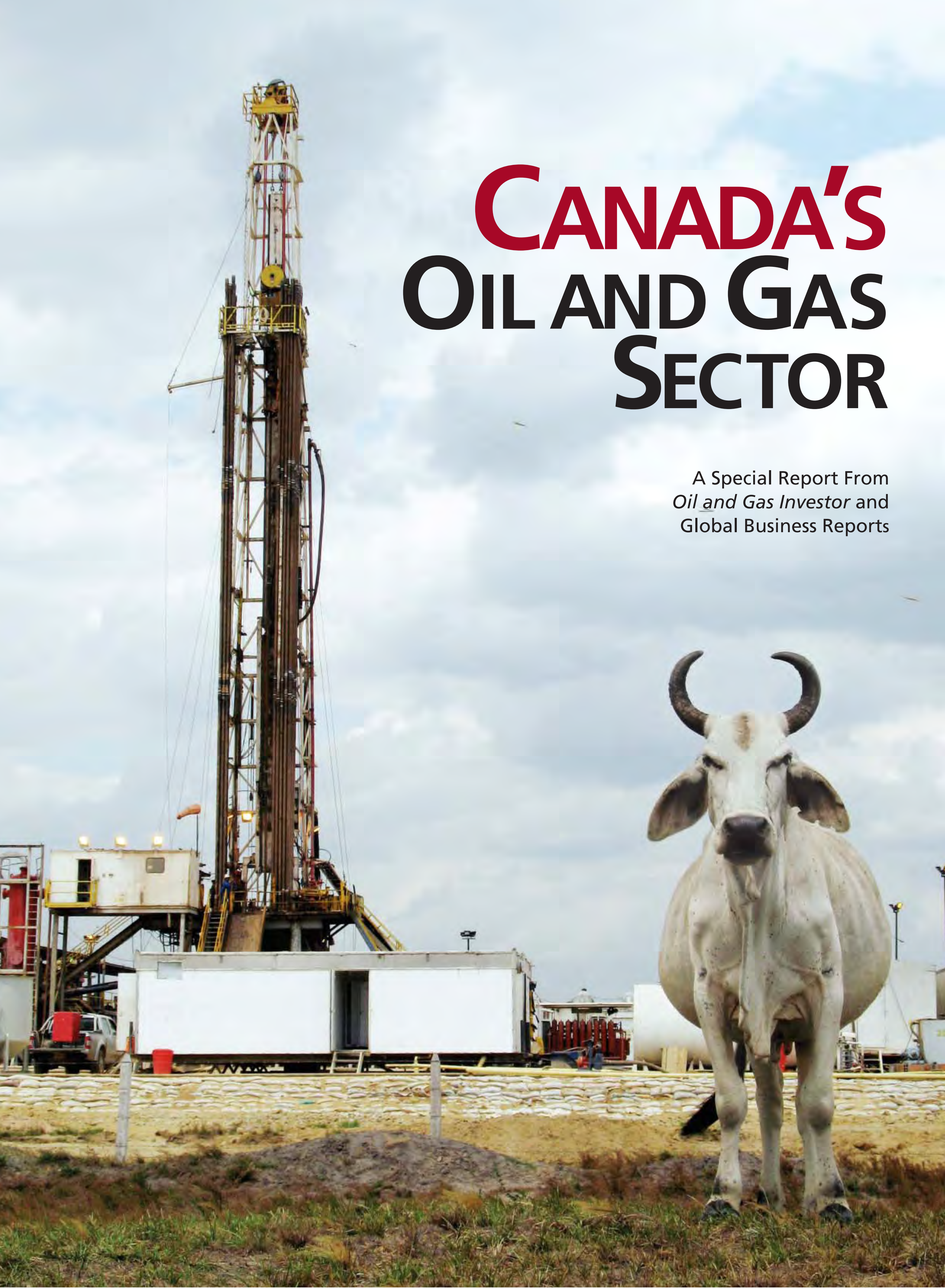
CANADA'S OIL AND GAS SECTOR

A Special Report From
Oil and Gas Investor and
Global Business Reports



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A Gander At Canada

A national industry is in flux with a new tax regime for its largest group of players.

As oil and gas producing nations go, Canada is an odd one. Despite being one of the places where the commercial oil and gas industry started 150 years ago, Canada, in 2007, is one of only a couple of OEDC countries still capable of increasing its current production, and the only one that can do so with any real significance on a global scale.

For a country of such vastness, this is perhaps unsurprising, but the fact that the U.S. is unlikely to ever have to send 100,000 of its troops to "liberate" Calgary has meant that Canada has been able to develop its oil and gas sector without too many people knowing about it. And that's the way that most Canadians, with characteristic modesty, appear to like it.

"When Stephen Harper, Canada's prime minister, starts talking about Canada as an energy superpower, it makes me cringe somewhat," says Michael Tims, chairman of Calgary-based investment firm Peters & Co.

Indeed, still producing only a small portion of overall global oil production, the term superpower probably is a little premature, but there can be no dismissing Canada's growing stature on the global energy stage. Producing 6.3 trillion cubic feet per year of gas and 2.5 million barrels of oil each day, Canada ranks as the world's third-largest gas producer, and in terms of global oil production, it is eighth and rising.

By 2020, production from the oil sands, alone, is expected to reach 3.5 million barrels of oil equivalent (BOE) per day, and with a total of 179 billion barrels in place, Canada's reserves are second only to that of Saudi Arabia.

Upwards of 500,000 people are employed, directly or indirectly, by Canada's upstream sector, which, from the Arctic north, to Atlantic Canada, spreads across 12 of the country's 13 provinces and territories, making it a truly national industry.

Yet, despite its scale, the industry is again unique in that the headquarters of almost all the major companies can be found squeezed into 10 square city blocks. With a proud Wild West heritage, Calgary has retained its pioneering spirit to become one of the world's great energy centers.

"The capital requirements of the industry are such that you really need to be close to a financial center and Calgary is just that for the global oil and gas industry," says Pierre Alvarez, chairman of the Canadian Association of Petroleum Producers (CAPP). "It's amazing to me the sort of global work that home-grown investment firms are doing out of Calgary."

Many of the world's best-known financial companies have also set up shop. In some cases, partnering local knowledge with global clout has proved irresistible. In November 2005, for example, Calgary-based investment bank FirstEnergy entered a partnership with French bank Société Générale.

Besides giving Société Générale entry to the Canadian market, the relationship, says FirstEnergy chairman John Chambers, "has allowed the bank to extend not only the products it offers in Canada, but its support to clients operating internationally."

The concentration of industry expertise in such a condensed space arguably helps facilitate the entrepreneurialism for which Calgarians are renowned: entrepreneurialism that Heather Douglas, chairwoman of the Calgary Chamber of Commerce believes leaves the city "well poised to be a renaissance city of the 21st century."

The strength of Calgary as an energy hub has become part of what is called "the Alberta advantage," the combination of factors that have supported Alberta's position as the most important oil and gas province in Canada.

On top of a more-than-healthy share of Canada's resources, the political stability of the province's never-changing Conservative governments, a strong but transparent regulatory body (the EUB) and an attractive royalty regime all continue to support Alberta's position as the dominant producer of Canada's crude oil (70%) and gas (80%).

"Over the years *we have built a very stable investment climate...."*
Mel Knight, Alberta Energy Ministry

In 2007, however, the industry has had to strongly defend that advantage. An independent panel, commissioned by the Alberta government, is reviewing Alberta's royalty and tax regime to ensure Albertans are receiving a fair share from energy resources.

While it's true that Canada is endowed with some of the greatest energy resources in the world, and enjoys its proximity to the world's largest energy market (the U.S.), a lack of labor and the country's vast geographical area, means the physical costs are among the highest in the world.

Taking into account the high Canadian dollar, almost at parity with the U.S. dollar, and the softened gas market, it is not hard to understand why so many believe that a change in the royalty regime now could be very damaging.

"Over the years we have built a very stable investment climate, and I believe it works, although it is Albertans who need to judge," comments Mel Knight, Alberta's energy minister.

Although there is, broadly speaking, confidence in the panel's wisdom, an unfavorable decision would, for some, be almost too much to bear. The industry is still in the early stages of reacting to the shock announcement last Halloween that the federal government was changing the tax exposure of the industry's substantial trust sector.

The impact of the decision had ramifications for the whole industry and many felt it tarnished the country's reputation for political stability. Going forward, Canada's long-term potential is undiminished, but in a state of relative flux, a lot is at stake.

Made up of months of interviewing the leaders of the industry in Calgary and beyond, this report looks at the implications of new regulations on the industry and its current flux, and examines the strategies and objectives of the companies that make up the Canadian oil and gas sector. ☐

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In Harper We Trusted

The Canadian royalty trusts are cooperating with the end of a tax regime, sorting out where they fit in a new investment paradigm.

The obvious reaction to the announcement was one of shock: When it happened there was utter surprise that the government had taken this approach, says Gordon Kerr, president and chief executive of Canadian royalty trust Enerplus Energy Trust.

Kerr is referring to the announcement Canadian Finance Minister Jim Flaherty made last Halloween on the federal government's decision to expose income trusts to the same tax considerations as corporations and "surprise" and "shock" are two of the lighter words used to describe the response of the local oil and gas sector.

The Conservative government's U-turn on taxing the trust sector was seen by many across the oil and gas industry as a "wholesale betrayal," "government-sponsored wealth destruction" and a broadside to a sector that has arguably done much to underpin the longevity of production in the Western Canadian Sedimentary Basin (WCSB).

In the run-up to his election in January 2006, Prime Minister Stephen Harper had made repeated promises to "stop the Liberal attack on retirement savings" and "preserve income trusts by not imposing any new taxes on them." However, growing concerns over the continued momentum towards trust conversions—C$70 billion of conversions in 2006 alone—and the amount of "tax leakage" escaping the federal coffers soon caused a re-evaluation of the government's position.

Three weeks after BCE (the Canadian telecoms giant) proposed its plans to convert its Bell Canada subsidiary to a trust, in what would be the biggest trust conversion in Canadian history and a move that would save the company C$800 million in taxes by 2008, Flaherty outlined his "Tax Fairness Plan" to an astounded public.

An operator checking a well on the Western Canadian plains. (Photo courtesy of ConocoPhillips.)

The implementation of a tax on income trusts, in addition to the tax on distributions in the hands of unit-holders, would be effective from 2007 for any new trusts that began after the October 31, 2006, while existing trusts would have a four-year transition period before facing the new rules in 2011.

Despite the 2011 timeframe for existing trusts, reaction to what has been dubbed "the Halloween massacre" was swift. On the first day of trading after the announcement the S&P/TSX Composite Index fell sharply, losing more than 2% in value, while the income trust and energy trust TSX sub-groups were off by 12% and 13%, respectively. Over time, some trusts went on to lose anything from 20% to 40% in value as investors took stock of the new reality.

The response from the trusts was to form a coalition to get their story out to the public and try to lobby against the change. The Coalition of Canadian Energy Trusts represents all 31 of the Canadian oil and gas royalty trusts and the majority of the related energy-services and -infrastructure trusts.

"When something as important as the trust tax legislation is put in front of you, you have to stand up, have your opinions heard and make sure that the authorities, unit-holders and public at large understand the position that the government has put you in," says Tom Buchanan, chief executive and president of Provident Energy Trust.

"I think that the Coalition has done a very good job of educating people in terms of the impact of this announcement, not only on the trusts themselves but the impact on the economy as a whole."

In Ottawa, however, the government's resolution has remained firm and the coalition's argument—that by virtue of their very high reinvestment requirements and their role in maintaining Canadian oil and gas production, energy trusts are different from other trusts—has fallen largely on deaf ears.

Gordon Kerr, who also chairs the coalition, sets out the lie of the land: "The implementation bill has now received royal assent and so is, effectively, a done deal with just a little clarity remaining to be given on some of the finer points of the legislation. Fundamentally, nothing has changed to affect our argument as to why this legislation is flawed, especially with respect to our space, the energy space."

A mature approach

The income-trust model, otherwise known as the royalty-trust model, has its origins in the energy sector and it is there that the impact has been most strongly felt. Created back in 1986, the original idea behind the trusts was to provide individual investors with the opportunity to hold direct investments in oil and gas assets through the creation of mutual funds that would own working interests in a diverse group of oil and gas properties.

One of the early entrants into the sector was what has since become Pengrowth Energy Trust. As a young securities analyst, Pengrowth's founder, president and chief executive, Jim Kinnear, was drawn to Calgary by the entrepreneurial spirit he found on his travels from Montreal.

"When I arrived, I was very intrigued with the potential I saw in the oil and gas industry here: The industry provides good returns for its unit-holders, has good margins and generates good cash flow."

On further analysis, Kinnear saw that the trust model presented the perfect opportunity to acquire some of those maturing oil and gas fields already in production and generate instant cash flow, which could then be used to provide a steady stream of income for unit-holders.

Listing on the Toronto Stock Exchange in 1988 as Pengrowth Gas Income Fund, the company has grown from an initial subscription of C$12.5 million

"In our business,
you have to keep moving…otherwise, you're left behind."
Jim Kinnear, Pengrowth Energy Trust

through 20 public offerings of trust units to reach a market capitalization of some C$5 billion in today's market.

Still, by 1995, the combined market capitalization of the early trusts, then typically passive investment vehicles, was only C$600 million. The floodgates really opened, however, following the creation of the Athabasca Oil Sands trust (now Canadian Oil Sands Trust) by the Alberta government, in 1996. By the end of 1997, there were 17 conventional royalty trusts in existence with a market capitalization of C$3.2 billion.

According to John Dielwart, chief executive of Arc Energy Trust, this phenomenon was a conflux of two main factors: namely, "a maturing basin and changing investor demographics."

During the early 1990s, the average return on capital employed by the oil and gas industry in Western Canada was less than 5% and declining profitability in the WCSB meant senior and intermediate companies were looking to sell their Western Canadian properties to invest elsewhere internationally.

At the same time, sharply falling interest rates helped precipitate a change from investors being growth-orientated towards being more concerned with wealth preservation and income generation for retirement.

"It has to do with the whole baby-boom philosophy," explains Dielwart. "There was a massive increase in appetite for income-yielding products. We didn't realize this at the time, but it was going to absolutely transform the energy industry in Western Canada."

The rise of the trust sector eventually led to the displacement of almost all of Canada's intermediate tier of producers, which were increasingly struggling to effectively redeploy capital in a basin of depleted opportunity. Enjoying a markedly lower cost of capital, trusts also became the logical acquirers of junior E&P companies that had hit a wall in terms of growth.

For some of these junior companies, diminishing returns meant conversion to the trust model became the natural evolution for their business and a new breed of trust started to emerge, with a greater emphasis on maintaining production and reserves organically, rather through acquisitions.

Progress Energy Trust was one of the first of the successful E&P conversions. "Our thought process was 'Well, you know what? We've been successful drillers all of our careers. It makes sense to spend a portion of our cash flow and still be drillers,'" says Michael Culbert, Progress chief executive.

The reason the trust sector has done well in Canada is simple and based on the idea that, with monthly distributions to pay, there has been increased pressure on the trusts to be efficient allocators of capital and to effectively assess and grade the opportunities available to them.

"We have to cut a check at the end of each month that is a substantial portion of our cash flow, so when we're looking to reinvest, we have relatively less to spend and therefore look to spend it more wisely," says Advantage chief executive Kelly Drader.

By comparison, Dielwart suggests that E&Ps, by relentlessly pursuing growth rather than focusing on sustainability, were regularly obliged to chase goals that were economically poor. "When commodity prices moved up, the investment of surplus cash flow was done very inefficiently by the E&P companies as they went to the bottom of the list of opportunities, whereas trusts gave it back to their investors."

And it is this effective ordering of priorities that, according to Dielwart, is how the trusts have, over time, been able to flourish and have outperformed the E&P sector dramatically. "I honestly believe that the royalty-trust model is the best model to exploit and maximize the recovery of reserves in this basin," says Drader.

"Certainly a trust trading at a better valuation will be able to acquire another," says Michael Tims, Peters & Co. chairman.

By the time of the announcement in 2006, the trust sector was producing roughly one in every five barrels of production in Western Canada and was sustaining production across many of the region's largest oil and gas fields.

"The majors are looking for the big exploration hits. That's where they get their kick in the marketplace," says Andy Mah, Advantage president and chief operating officer: "The royalty-trust sector is looking after those reserves, which the majors once held but that can still be further exploited to provide a very solid production base."

Bruised, not beaten

Despite harboring anger over the government's decision, the trusts are now focused on readjusting to the new environment and are readjusting themselves for the future. Since the announcement Thomas Buchanan, Provident chief executive, says his management team has been re-evaluating the business strategy to compensate for what the government has put in front of them.

"We are working hard on a number of initiatives to ensure that our unit-holders are protected and we can maintain our ability to add value for them over the long-term."

However, Enerplus' Kerr is quick to dismiss reports that values held prior to the announcement across the sector are on their way to being re-established. "In our case, we were trading at nearly C$60 per unit prior to the announcement and are now around C$50," he says. "Typically other factors come into play, e.g. commodity prices, exchange rates, etc., but by and large these haven't changed significantly, so the impact still remains."

Buchanan is in agreement: "Most are still 10% to 15% off their high values, which indirectly translates into the tax rate we have."

Losing 15% in value is a tough pill for any company to swallow, but the impact of the tax measure announced is likely to be most severely felt by some of the smaller trusts that suffered sharp declines in the market. Broadly, the difficulty of attracting capital for the smaller trusts is expected to be even more pronounced and make it even harder to move their businesses forward.

"In our business, you have to keep moving ahead and expanding; otherwise, you're left behind," says Pengrowth's Kinnear. "And size is now as important as ever in the industry."

With a capitalization of roughly C$5 billion, Pengrowth has the ability to do transactions of a scale and with an overall package that is beyond the capacity of smaller entities (e.g. C$1 billion transactions with ConocoPhillips), and with such disparity in size, it is unsurprising that Kinnear expects to see consolidation ahead in the sector.

The C$1.25-billion merger of PrimeWest Energy Trust with Shiningbank Energy Income Fund in July 2007 to create the fifth-largest Canadian trust is some indication that the consolidation trend is already under way. Shiningbank, a trust heavily weighted to gas, had cut its cash distributions in January, reduced its target payout ratio to 60% to 65% from a three-year average of 84%, and drilled only 11 wells in first-quarter 2007, compared with 77 in that period in 2006.

The company's struggles with dealing with the double-whammy of the tax announcement and weaker gas prices led to the deal, which, according to Michael Tims, chairman of Calgary-based investment banker Peters & Co., "is typical of the apples-to-apples consolidation that could happen anytime. Certainly a trust trading at a better valuation will be able to acquire another, bring it under its umbrella and keep going."

Bigger is clearly best: The combined company, operating under the PrimeWest name, has proven and probable reserves of about 280 million barrels of oil equivalent and production of around 66,000 a day. By combining the two trusts, PrimeWest hopes to be able to boost cash distributions 3.3% and has extended its forecast reserve life to 11.5 years.

However, outside the trust sector, Tims sees limited interest in acquiring trust assets. "A lot of the trusts aren't particularly attractive as they were themselves built largely on assets divested by larger companies."

Looking ahead as to where the trusts go from here, some will be looking for a merger or sale and others at a conversion back to a corporate model. Unsurprisingly perhaps, for a sector that has in the past been able to leverage so well off cash flow, private equity has been rumored as potentially providing buyers and there's also been considerable speculation over some trusts converting the U.S. model of master limited partnerships (MLPs).

According to Tims, however, the MLP model is "more of a possibility than a panacea" and he certainly doesn't see the whole income-trust sector converting to MLPs. "There are clearly trade-offs and you are open to different tax considerations once under the U.S. umbrella (U.S. securities registration considerations, etc.). Only the larger trusts will probably look seriously at what they can do there and nobody seems to have leapt too quickly to do it."

Whatever the scenario, Steven VanSickle, president and chief executive of Fairborne Energy Trust, is confident the demand for income-yielding investments will continue: "As the baby-boomer generation moves into retirement age, the financial brains are, I'm sure, already working on new structures to satisfy the demand for dividend-yielding assets."

Indeed, for some companies, their tax horizon extends well beyond the 2011 implementation date of the new legislation: A number of trusts have built up tax deductions that will protect distributions and shelter unit-holders for several years to come at least. With C$1.2 billion dollars of tax pools, Advantage has the highest ratio of tax pools to market capitalization of any of the trusts (C$10 to C$11 per unit).

"We've always heavily favored those acquisitions that come with tax deductions even though people at the time were saying they were worthless," says the company's chief executive, Kelly Drader, and he is surely feeling vindicated now. Advantage's tax horizon is still some seven to eight years away.

When the time does come for trusts to concrete their new corporate strategies, the decision will depend partly on what are the structural/financial alternatives and partly on how the tax change has affected their operations, which vary significantly from trust to trust. VanSickle explains that not all trusts are created equally.

"We've been successful drillers *all of our careers. It makes sense to spend a portion of our cash flow and still be drillers." Michael Culbert, Progress Energy Trust*

VanSickle says Provident will "continue to survey all options" but will await the more detailed legislation before making a decision on which structure will best suit the company and the needs of its unit-holders.

Although there is certainly much to consider, Derek Neldner, managing director of RBC Capital Markets—a leading advisor to many of the trusts—says he doesn't yet sense much urgency among the firm's investment-banking clients. Tims suggests there is still some hope that there might be some relaxation of the rules.

"Most people would recognize that this is unlikely to happen as long as the current government is in power, but the opposition has said that they would do something different and if you converted back too quickly you'd lose that [potential] opportunity."

Nor do investors appear keen for their boards to make a decision on future strategy too hastily. In March 2007, unit-holders of True Energy Trust a medium-sized energy trust, voted down the board's proposal to convert into a growth-oriented, dividend-paying intermediate E&P company under a corporate structure. With up until 2011 to carry on as before, clearly non-taxable investors would like the trusts to wait until much closer to the implementation date.

"Every trust has a different set of assets, a different style and different levels of reinvestment required. There are trusts at one end of the spectrum that have built up a brilliant set of assets of the pure trust model, while at the other end the assets are closer to that of a traditional E&P company."

Having had their cost of capital severely affected, it is expected to be more challenging for the trusts, going forward, to be as active the acquirers they have been in the past and so there will be a greater onus on the trusts to focus on opportunities to replace reserves through organic initiatives.

"You need the assets that allow you to drill and find repeatable opportunities on those lands, besides having the ability to expand your land in that region so that you can continue to build and carry your play forward," says Progress chief executive Michael Culbert.

Across two core areas—the Deep Basin of Northwest Alberta and the foothills of Northeast British Columbia—Progress has assembled a 600,000-net-acre undeveloped land base and by the end of 2007, Culbert expects the company to have drilled 50 to 55 wells as part of a C$140-million capital investment program for 2007.

Progress is weighted 85% to gas, but with the lowest finding and development costs across the whole trust sector. With ample, repeatable drilling opportunities during the next few years, Culbert says he's "comfortable that the company is as well placed as anybody."

A desire to hold longer-life assets has also seen trusts diversify into other areas and develop quite distinct approaches to providing unit-holder value. When Harvest Energy started in 2002, "the sexiest thing to do was to have a natural gas strategy," says president and chief executive John Zahary.

Conversely, Harvest bought many of the oil properties it felt were undervalued at that time. As a heavy-oil producer, however, Zahary was worried about the differentials involved but seized on an opportunity to get a natural hedge through the acquisition of North Atlantic Refining and its related marketing businesses.

In Newfoundland, Harvest now owns the youngest refinery in the country, in terms of the number of years in service, processing medium, sour crude into distillate, gasoline and heavy fuel and with the second-leading utilization rate for oil refineries in Canada.

A venture downstream also features as part of Provident's unique blend of U.S., Canadian upstream and Canadian midstream assets that chief executive Buchanan believes leaves Provident better placed than many others to weather the storm.

"Having a balance of assets has given us a great deal of stability in our portfolio. We're still generating very good returns from our business and our pay-out ratios are still quite comfortably within the levels where we don't have to worry about our distributions today. "

Provident's U.S. subsidiary, BreitBurn Energy Partners, is already an upstream MLP that perhaps gives the company a better understanding of MLPs and the value they provide in the U.S. market.

Does that make sense for Provident overall? According to Provident's Buchanan, "it's an option that we're considering, but one of several options."

Initially, the markets seemed to suggest investors placed little value on the different strategies of the trusts in which they invested. Now, having had the opportunity to re-evaluate the value proposition of individual trusts, it appears investors have become more discriminating.

Greg Kist, vice president, investor relations and marketing, for Progress Energy Trust, senses the traditional institutional investor is already looking for which trusts will be winners from this scrutiny, which is only going to intensify. "As we get closer to 2011, investors will be looking at the details: track record, tax pools, people and the asset quality."

Canadian trusts must be wise to survive. □

Target Graduation

The junior E&P model of building and selling to a senior or to an energy trust isn't as easy now that most potential buyers are revamping their own business models.

In the global oil and gas industry, the Canadian junior sector is virtually unique. No other country has spawned a junior sector with such a wealth of diversity, technical competence and managerial proficiency. The barriers to entry that exist for smaller companies in other countries are much lower in Canada.

"The regulatory system is very transparent, so small companies have access to information at the same level that the big companies do," says Gary Leach, executive director of the Small Explorers and Producers Association of Canada (SEPAC). "Also, there are lots of properties that the government put up for bidding every two weeks. In other countries, like India, this only happens once a year."

Junior companies are typically voracious consumers of capital, but again, the Canadian sector is better served than most. The Toronto Stock Exchange has its junior exchange, TSX Venture, headquartered in Calgary, offering a streamlined graduation path to the main exchange.

According to its president, Kevan Cowan, 2006 was a record year in terms of the total amount of capital raised and volumes traded, and in the number of graduates progressing to the senior market: 67 companies moved from the TSX Venture Exchange to the main exchange last year, bringing the total to about 340 since the exchange was formed, Moran notes.

Numbering upwards of 450 public and private companies and collectively contributing some 15% to production from Canada's reserves, the junior sector has experienced a phenomenal growth phase in the past five years. The junior market has represented the largest financing segment within the broader energy sector in Canada during the past two to three years, and in the hubbub of downtown Calgary, there has been no shortage of seasoned industry professionals ready and willing to go out and "do the little thing."

Entering late middle-age, the Western Canadian Sedimentary Basin (WCSB), where some 95% of Canadian juniors are active, continues to offer significant potential returns to small companies that are able to deploy effective exploration and exploitation strategies. A high level of technical competency allows small companies to effectively compete with much larger companies in high-reward exploration areas, while also pursuing lower-risk opportunities below the radar screen of larger firms.

Through a tight focus on efficiency, junior companies—typically E&P companies producing 15,000 barrels of oil equivalent (BOE) per day or less—are able to achieve low finding, development and operating costs. This advantage, combined with significant production growth, has allowed the junior E&P market to consistently achieve superior returns relative to larger competitors.

Up until the mid-1990s, junior companies grew in the traditional manner of exploiting their efficiency advantages to the point where companies were either successful in breaking through to the echelons of being an intermediate producer or were bought by a larger entity.

However, with the emergence of the trust sector, which displaced much of the existing intermediate tier, a new dynamic was created for juniors: A close, symbiotic relationship whereby the trusts became the logical acquirers of juniors' assets.

Once they have proven up new reserves and grown production to a sustainable level, selling out to a trust provided a clear and easy exit strategy for junior teams wishing to monetize their value. Successful management teams were then able recapitalize new companies with a goodwill premium associated to the fact that they would just go out and do it all over again.

The income-trust tax measures announced last Halloween by Finance Minister Jim Flaherty therefore have significant ramifi-

In the international game there are big winners and big losers, says Niko Resources Ltd. chairman, president and chief executive Ed Sampson. Shown here is Niko's production facility offshore India.

cations for the junior sector too. "True, on one hand, the trusts provided a good exit strategy for the juniors," notes Leach, "but on the other, due to their easier access to capital, they could easily outbid juniors in access to land and services, and in other areas."

According to Derek Nelder, managing director of RBC Capital Markets, the trust announcement has probably increased somewhat the importance of the junior E&P sector.

"Obviously, from a cost-of-capital perspective they are more competitive against the trusts. Following the announcement, we have seen some juniors being quite aggressive with their acquisitions and I think we will see certain credible and experienced management teams very active in growing their businesses."

At present, there's a big step down in size from the handful of intermediate companies to a broad swath of juniors, and with the trusts unaffected by the tax changes until 2011, many juniors are still on the path of growing to a certain size, typically 5,000 to 6,000 BOE per day, and then selling out.

An industry dynamic that allowed management teams to repeatedly enjoy rapid wealth creation at relatively low levels of production also meant fewer management teams ever experienced growth beyond that level.

"All it took was three people, one good idea and a piece of paper," says Bill Trickett, president and chief executive of Buffalo Oil. "Now you have to do more. Different management structures are required, companies need to be better capitalized and more creative in terms of financing. Things are becoming a little more sophisticated."

Super-juniors

With only a small number of management teams with the experience in taking companies to a higher level, all eyes are turning on the ones that have displayed that sort of track record.

"Some of the management teams certainly have the capability to run larger entities and the market is looking for some of those to step up as consolidators and grow into the next group of intermediates," says Michael Tims, chairman of Calgary-based investment banker Peters & Co.

Trickett is regarded by many to be well placed to be in that group. As president and chief executive of Morgan Hydrocarbons, he grew the company from 700 to 24,000 BOE per day before selling to Stampeder Exploration Ltd. in 1996.

Having successfully run one company, he wanted to run another, so Trickett reentered the fray in 2004 with a reverse takeover of Buffalo Oil, at the time a micro-cap company operating in Saskatchewan.

A merger with Choice Resources Corp. in May 2007 raised daily production at the newly named Buffalo Resources Corp. to 4,700 BOE, and importantly increased liquidity in the stock. To be successful at the level of producing 10,000 to 20,000 BOE per day, Trickett believes "the key is to be able to build a suite of assets and invest across a broad risk profile."

Following the merger, Buffalo is able to boast the balance of "world-class assets with home-run potential" at Pincher Creek, with resource plays Frog Lake and Viking, part of a total land base of 130,000 net undeveloped acres.

At the time of the Morgan Hydrocarbon deal, Jeffrey Tonken was at the helm of Stampeder and now, as president and chief executive of Birchcliff Energy, he heads up another of the management teams with the potential to be part of what are being called a new generation of "super-juniors."

Following the October 31, 2006, announcement regarding taxation of royalty trusts, Birchcliff reorganized itself to pursue a longer-term strategy of growth in terms of both reserves and production. Under Tonken's direction, Stampeder eventually grew to daily production of 40,000 BOE and Tonken believes the model he used is as relevant today as it was then. That model is one of two themes: having highly concentrated assets and a high working interest.

"There's no magic to it," says Tonken, "you just need your people to be focused—and you do that by developing core areas with plenty of running room in undeveloped acreage—and you have to operate so that you are in control of your flow of capital spending."

Concentrating its efforts in the Montney/Doig resource play of the Peace River Arch area of Alberta, Birchcliff has seen its project mature from the concept phase, with no production or reserves, to now having drilled 18.8 wells (net) and an established land base of 199,097 net undeveloped acres. It is expecting daily production to top 7,000 BOE by the end of 2007.

"Companies struggle when they get into the position where they own 10% of one well, 15% of another, and end up spread all over Western Canada," explains Tonken, but as the sector starts reshaping, that is the unenviable position that all too many companies have found themselves in.

"One of the biggest differences between today's market and the market as it was five years ago is that, five years ago, there was one more element," says Michael Tims. Identifying the junior growth stories has played a big part in the rise of the Calgary-based investment-banking firm.

> **"All pigs fly** *in a hurricane."*
> *Alex Verge,*
> *NuVista Energy*

Five years ago the company would identify the management team as a first priority and then evaluate its business plan but Tims says that, in many cases, the first stage of what was going to unfold was also clear: "Companies could present an initial set of assets or an opportunity to get the company rolling. More recently, it appears that companies are less likely to have available to them that great start-up opportunity."

Every time the sector goes through a cycle, the WCSB has been drilled over one more time and companies are now finding it harder to be truly distinctive and find competitive advantages.

In a booming market, the need for truly great assets gets diluted, but when things turn sour, cracks quickly emerge.

True colors

"All pigs fly in a hurricane," says Alex Verge, chief executive of NuVista Energy, "but now investors are really becoming focused on the sustainability of the business model and many companies have been poorly exposed."

For many juniors, the Halloween announcement couldn't have come at a worse time: The market continues to fall from its high, defined as 2005. And, with soaring service costs and declining gas prices, 2006 was a horrible year for many in the junior energy sector.

"2006 was such a tough year, and with C$25- to C$30-per-BOE costs for finding and development (F&D), many smaller companies blew themselves up," says Martin Davis of Brickburn Asset Management.

The combination of the trust announcement and the tougher operating environment means the level of consolidation expected could lead to a bifurcation of the sector and a halving of the number of junior operators.

"Over the last six months, we have really seen the gap widen between the 'haves' and the 'have nots,'" says Celtic Exploration chief executive David Wilson. "Investors are really starting to pick the winning horses: They will bet big on 10% to 15% of them; 25% might make it but the rest will have to go."

Such challenging times make those that have done well shine all the brighter. In a sector where people are looking for the old guard to show direction, Vero Energy's rookie management team has bucked the trend, growing to 4,700 BOE per day just 20 months into the company's existence.

"In a tough year, true colors start to come out and management teams can start falling apart," says Vero president and chief executive Doug Bartole. "But here, we're on the same wavelength. In the end, it's about people: those you can respect, have a sound technical background, work with, party with, think along the same lines as. When you have those sorts of people, then things come together fast."

And despite the hurdles, in retrospect, Bartole believes 2006 was a great year to be starting out as a junior company. "It was a volatile year, but to go out on the road and learn what people were thinking was really helpful: when you're preaching to people who are not overly enthused, things are tougher and it kept us grounded—it was a great environment in which to cut our teeth."

For a sector weighted approximately 80% to gas production, a softening of gas prices has had an understandable impact on profitability, but the rise in F&D costs, blamed on an overheated marketplace, seems to have caught many unaware and left their plans unstuck.

Last year, ProEx Energy had the lowest F&D costs of companies across the WCSB. "How do you get there?" asks chief executive David Johnson. "Well, you can't forget that it's a ratio. The common fault is to blame the numerator—the service costs and the competitive nature of the industry."

Johnson doesn't deny that these costs have indeed risen, just not in a way proportionate to the rate at which F&D costs have grown. On the cost side, ProEx benefits from a service-sharing agreement with its old parent, Progress Energy Trust,

Representing Brickburn Asset Management are managing directors Martin Davies, Bill Bonner and Tom Tucker.

to keep costs low, but Johnson believes all companies could do more to improve their operating discipline.

"We don't just look at the sticker price of the services, but at how effective we are at using those services and how well we can line everything up and plan all the logistics of the job. The effectiveness of who you have there is important, so you need the continuity to keep the best rigs and crews."

However, it is the denominator part of the F&D ratio that Johnson suggests is what people have more problems with—drilling an appropriate-size target for the dollars invested—and something that industry veteran Brian Dau, chief executive of Anderson Energy, agrees with.

"People were going too deep, chasing too small a target, and have suffered, consequently," says Dau.

While the market was overheating, a big problem for operators was that people from the service companies were relatively inexperienced or suffering a high level of attrition, so in the down-turn, many welcome the return to efficiency of crews and are confident F&D costs this year won't reach the level of 2006.

Indeed, it is in the downturn that, according to Dau, lie some of the best opportunities for a company to plan for the future. "What you do at the bottom of the valley defines where you are at the top of the hill," he says.

Land prices are significantly lower than in 2006 and so this is arguably the time when companies will be looking to capture land and opportunities, or while gas prices are low, build the infrastructure necessary to reap the rewards when some degree of robustness returns to the market. "When major U.S. energy companies are saying, 'Let's de-emphasize Canada, as it's too expensive when compared to the Barnett shale (in Texas),' it's the perfect time to go to them and say, "Let's do some business,'" Johnson says.

Brickburn Asset Management's Martin Davies says, "It will take the bigger guys a little more time for their boards to get comfortable with stepping up a budget for their drilling programs, so I think the window of opportunity for juniors might exist for another six to 12 months. We think of it as a financial tank that needs to be filled up again and that, once the most desirable assets start selling at low prices, this will naturally prompt the next drilling cycle."

Of course, building through a cycle is something the experienced heads don't need to learn. But with a return to a more traditional growth strategy, building quality over the longer term will be more important than in recent years. Johnson admits ProEx was considering selling up before the Flaherty announcement, but management isn't too devastated that it didn't. "Build a company to sell and it might not last; build one to last and it will always sell," Johnson says is his mantra.

Overseas cousins

Interest in Canadian juniors exploring internationally has traditionally been monopolized by the country's world-class mining sector. However, as the domestic E&P sector is taking some time to reorganize itself and get back on its feet, increasing attention is now being paid to the growing number of Canadian oil and gas juniors operating in overseas jurisdictions.

"Mining companies have been much more internationally focused, but a lot of people think this will be replicated in oil and gas," says the TSX Venture Exchange's Cowan.

Abby Badwi, president and chief executive of Rally Energy, says support for international junior exploration "has historically been something of a cyclical phenomenon," but with names like Niko, Centurion, Petrobank and Rally finding resonance with investors, the cycle seems clearly on the rise again.

Bill Bonner of Brickburn Asset Management, says, "A Canadian company taking its skillset abroad is a story that's selling really well right now."

In the latest round of enthusiasm for international exploration, it was undoubtedly Niko Resources that really put Canadian juniors on the map. "Prior to Niko, Canadians went abroad but had been largely unsuccessful, and in the international game there are big winners and big losers." says Niko chairman, president and chief executive Ed Sampson.

> **"All it took** *was three people, one good idea and a piece of paper."*
> *Bill Trickett, Buffalo Oil*

The only public company from the Western Hemisphere operating in India, Niko struck black gold through its involvement in the development of the D6 offshore area, launching the company on an amazing growth story. During the past five years, the company's share price has grown unabatedly from C$10 to now in excess of C$100 share.

One swallow doesn't make a summer, but Niko has since been joined by a host of other Canadian juniors achieving their own successes and this in turn appears to be holding up support in the markets for other companies to follow suit.

"Investors are looking for something different and we've benefited from some of the other success stories," says Craig Nieboer, chief financial officer at BrazAlta Resources Corp, currently the largest Canada-based oil exploration company operating onshore Brazil. "There are all these Canadian companies with international successes, so it makes it easier for investors to understand there can be some great stories outside of Western Canada."

What Canadians have proven in the Western Canadian basin and have started to apply with similar success in the international arena is the ability to take some of the smaller assets that fall below the radar of the majors and really make them high performers. For BrazAlta, the opportunities lie in the significant land positions the company acquired in the Reconcavo, Tucano and Sergipe oil basins in Brazil.

"We're now bringing that level of knowledge and attention to assets that, if they existed in Western Canada today, would be very prolific, but in the international arena, they escape the focus of companies the size of Petrobras, ExxonMobil or even the mid-range companies like Anadarko," says Nieboer.

Still in its infancy, BrazAlta has already secured a joint-venture partnership with a local private company, W. Washington, which acts as operator on the two companies' combined land. "One of the key things we found was the importance of having a Brazilian operator on the ground," explains Nieboer.

"Collectively our experience has been that, when you are the Western company, you are treated differently by the environmental authorities, the customs authorities and others in these foreign jurisdictions, so a big advantage for us is that W. Washington does all the activity on the ground."

What BrazAlta brings to the table is the science, the technology and the capital to develop and produce the reserves.

One of the best examples of a Canadian company having proven success using Canadian technology and expertise in a relatively unexplored jurisdiction is Rally Energy, holding assets in Egypt and Pakistan that were owned by Scimitar Hydrocarbon, and Rally's assets in Canada. The primary focus of Rally's operations is now in Egypt, where it has a 100% operating interest in the 20,000-acre Issaran oil field on the western shore of the Gulf of Suez. It is a significant heavy-oil development opportunity the Egyptian government has been keen to promote.

To maximize the recovery of this heavy oil, Rally has been the first company to apply thermal production techniques in Egypt. "Our pilot work has thus far proved successful and we're currently expanding this into the commercial phase, which also looks to increase our proven reserve base over the next two to three years," says Badwi.

From 2,500 BOE per day in 2005, Badwi expects daily production to grow to about 9,000 BOE by 2008. "More importantly, however, it's the reserve side that reflects the true value of the company. When I took over, our reserves on a proved-plus-probable basis were 8 million barrels and we have since grown that number to 46 million in 2005 and to 104 million in 2006."

Others overseas

Richard Wadsworth, chief executive of Bankers Petroleum, says the heavy-oil side has been relatively bypassed when it comes to international projects and presents a great opportunity for junior entrants and particularly Canadian companies able to draw on the country's world-class heavy-oil expertise.

"If you go to a country with a significant amount of light oil, then you're competing with every one else—but heavy oil is a different story," says Wadsworth. Operating in Albania, but with a resource similar to Rally's in Egypt, Bankers has hit 5,000 BOE per day and getting to that point where cash flow alone can sustain development and grow production to 10,000 to 15,000 per day just on a primary, heavy-oil basis.

But, Wadsworth says, "It's the next milestone that we're really there for. Not just the 10,000 to 15,000 BOE per day and the 12% recovery factor for heavy oil that you get on primary, but to look at enhanced oil recovery and secondary techniques to improve considerably upon that 12%. For every 1% addition in terms of our recovery rate, we're talking about 15 to 20 barrels of recoverable resource."

The prizes may be large, but even getting a foot in the door often presents a challenge for juniors overseas. "Fifteen years ago, a good-looking guy or gal could walk into an office with a briefcase of cash, some technical know-how and walk out with a land concession," says Scott Price, chief executive of Solana Resources. With more than 20 years in the international game, Price has been well placed to observe the changing experience of a junior exploring internationally.

"Things are quite different today, however," he notes: "Countries are more sophisticated; fiscal regimes are more commercial and reflective of the country's prospectivity."

It is therefore with some pride that Jim McFarland describes his company, Verenex Energy, as "the smallest company operating in Libya." When the Libyan Oil Council showed up in Calgary in 2004 to make a pitch, its interest was in the big players. However, Verenex was successful in advocating the importance of also attracting some of the smaller companies.

Under the umbrella of Vermilion Energy Trust, the most international of the trusts, Verenex was able to land positions in Libya's first bid round in 2005, deliciously close to BP's C$900-million stake in the country.

Vermilion's interest has since been diluted to 41.8%, leaving Verenex regarded by many investors as the only pure player in a country McFarland describes as "one of the hottest oil and gas exploration areas in the world."

During the initial five years of their contract, there is an obligation to acquire 1,000 kilometers of 2-D seismic and 200 square kilometers of 3-D seismic, and drill three exploration wells, but the company has already made two discoveries in Area 47 in the Ghadames Basin, around 600 kilometers south of Tripoli. McFarland says more than 45 exploration prospects and leads have been developed already.

Another Vermilion spin-off company of note is Aventura, whose success onshore southern Trinidad led to the company being bought by British Gas for C$228 million in 2004. Scott Price was president and chief executive of Aventura and is hoping for similar success now at the helm of Solana.

"Our pilot work *(in Egypt) has thus far proved successful…." Abby Badwi, Rally Energy*

In October 2006, Price's management team was parachuted in to save and reinvigorate Solana's efforts in Colombia. Despite the country offering what Scott describes as "an unparalleled ratio between the fiscal system and prospectivity," the company was struggling. "Always hitting for the fence rather than scrambling for the odd single and running up the score," says Scott.

Having made some strategic adjustments to the asset base and "revamped" the exploration team, Scott believes the company, exposed to 4,900 kilometers right in the heart of "top-notch prospective areas," is now poised at the threshold of something very big.

"We now have that quintessential portfolio that everyone is looking for with international exploration, producing assets to give some stability, assets to develop with exploitation upside that's potentially really big and a huge exploration opportunity."

The most notable success to date has come from the company's Costayaco-1 well, drilled close to the Ecuadorian border in the Putumayo Basin. It tested an exceptional 5,906 daily barrels of oil at combined maximum flow rate from 155 feet of perforations.

"It was a whopping discovery," exclaims Price, "and for a smaller company, it doesn't get any better than this." □





The Oil Sands and Unconventional Gas

Canada's oil sands continue to be a prize for many, while unconventional gas resources are further adding to companies' balance sheets.

Heavy oil from EnCana Corp.'s Christina Lake oil-sands operations. (Photo courtesy of EnCana.)

Peter Tertzakian, chief energy economist and managing director of ARC Financial Corp.

For a country blessed with such abundance, it may seem surprising that a dirty, tar-like bitumen has quickly become the star in Canada's rich arsenal of natural resources. Something once used by Native Americans to seal their canoes is now, after a decade of rapidly accelerating development, significantly altering Canada's standing on the world energy stage.

The oil sands of northern Alberta were first mined in 1967, with in-situ projects beginning to appear in the 1980s. With an attractive royalty regime introduced by the Alberta government in 1996, combined with continued technological advances and strong oil prices, there has been an explosion of interest in the area during the past 10 years.

This also, however, reflects the dwindling number of truly world-class resources globally.

"Peak-oil theorists need to look no further than the tidal wave of investment, which continues to flood the oil-sands reserves of northern Alberta, to see that the good, clean, cheap stuff is running out fast," says Peter Tertzakian, chief energy economist and managing director of ARC Financial Corp.

Since 1996, more than C$45 billion has been invested in oil-sands development, with another C$60 billion planned by 2010, a level of spending that gives some indication of the massive size of the resource. Despite only 10% of the estimated 17.4 trillion barrels of oil sands in place currently considered as being economically recoverable, this alone would be sufficient to sustain daily production of 3.5 million barrels of oil equivalent (BOE) for the next 135 years.

Production from the oil sands currently stands at just above 1.1 million BOE per day. But with a host of multimillion-dollar oil-sands construction projects expected to be completed during the next few years, daily production is expected to hit 3.5 million by 2020.

The capital spending required to make economic sense of the resource would be considered well beyond the domestic capital of Western Canada, but the oil sands have attracted global interest and almost every major oil company, with BP Plc notable by its absence, has strived to get a slice of the action.

"This is a challenging game on the technical side, which requires some huge investment—exactly the sort of thing the large integrated oil companies are good at –so you would tend to think they will be dominant over the next 10 to 20 years," says Michael Borrell, president of Total E&P Canada.

Yet, that is not to say oil-sands development will only line

"This is a challenging game *on the technical side…." Michael Borrell, Total E&P Canada*

Kevin Meyers, president of ConocoPhillips Canada, which owns 50% of the Surmont oil-sands lease (at right) in Alberta. EnCana holds the balance.

the pockets of the global oil chiefs. Research by the Canadian Energy Research Institute (CERI) has calculated that, between 2000-25 oil-sands activity will have contributed C$123 billion to government revenues.

The involvement of some of the trust sector in the oil sands, attracted by the long supply-life of the resource, also offered the chance for thousands of ordinary Canadians to make an investment. Canadian Oil Sands Trust has a 37% interest in Syncrude, one of the earliest and largest oil-sands mining projects.

Marcel Coutu, president and chief executive, describes the company as "the purest form of investment in the oil sands: a pure-play on the biggest and, we think, best project in what is one of the longest-life reserves in the world."

During the coming years, Total E&P Canada alone expects to make an eventual capital commitment in the oil sands of some C$10- to C$15 billion. With an integrated strategy, including plans for the construction of a refinery in Strathcona County, the investment is expected to eventually yield production of some 250,000 BOE per day.

The French major's Canadian subsidiary gained a presence in the oil sands relatively early, with entry to a pilot on the Surmount lease in 1998 to test the application of what has since become the most widely used in-situ extraction technique, steam-assisted gravity drainage (SAGD, say "sag-dee").

Commercial development of the project, of which Total now owns 50%,

Anything that might affect the relatively fragile profitability of an oil-sands operation is significant, says Kathleen Sendall of Petro-Canada.

began in 2003, and according to Borrell, convinced the company the oil sands had all the right ingredients for Total in the long term. "What are those ingredients that Total looks for in a project? Well, they must be long term, technology challenging, and we must be able to take a material position," Borrell says. "Overall, we need to be able to add value, and the oil sands certainly present the opportunity to do that."

The other 50% of the Surmont lease is held by another of the majors, ConocoPhillips. The company has a presence in Canada that goes back 100 years, but the company has really crystallized its future in Canada in the past eight months with the oil sands as key to the company's strategy going forward, says Kevin Meyers, president of ConocoPhillips Canada.

"People ask us what we want to be when we grow up and, in Canada, our objective is to be the leading gas and bitumen producer. Leading to us means being the safest, the most profitable and the most respected by our shareholders, the communities in which we do business, our employees and our contractors."

Borrell and Meyers share the view that, in oil-sands development, the larger international companies derive an advantage from their ability to leverage their international experience in running large projects. But the trick is to marry the power and best practices of an integrated major with the local knowledge of an independent, and get the best of both.

Meyers says, "I believe we can bring even more strength by using the best practices that we have learned from our operations all around the world when dealing with constituencies. Dovetail that with local knowledge and you have a very powerful combination."

As a pure producer in the oil sands, a company can suffer from exposure to a significant amount of seasonal volatility in asphalt markets. Increasingly, therefore, companies are seeking an integrated approach to bitumen production.

Trading 50% of two of its U.S. refineries for 50% of EnCana's Foster Creek and Christina Lake SAGD projects, not only gave ConocoPhillips an overnight interest in these, but offered both companies a natural hedge against the crude/bitumen differential. The Foster Creek and Christina Lake projects currently produce some 60,000 BOE per day and are to reach 400,000 during the next decade.

However, despite all the big numbers going into and coming out of the oil sands over the past year, the companies involved have been subject to a considerable degree of uncertainty with many projects starting to look economically delicate, to say the least.

"The oil sands are long-life projects but don't tend to be particularly high-return projects," says Kathleen Sendall, senior vice president, Petro-Canada. "Therefore, anything that might affect that relatively fragile profitability is significant."

Although oil prices have remained strong, regulatory uncertainty, ranging from the Alberta government's royalty review to the tax announcement for the trusts and legislation concerning CO_2 emissions, has combined with a sharp escalation in costs to undermine confidence.

"There are an extraordinary number of people trying to get to the same place at the same time, and we have to be careful not to disrupt the sensitive market economics," says Dante Caravaggio, vice president of Jacobs Canada Inc., one of the major engineering, construction and production firms charged with building and maintaining the massive oil-sands projects.

"These projects are not a slam-dunk—

"These (oil-sands) projects *are not a slam-dunk—they have to be thought through."*
Dante Caravaggio, Jacobs Canada Inc.

Lee Richardson of Fluor Canada, making pancakes at the annual Calgary Stampede.

they have to be thought through. We need to understand how the reservoir will react and the human and material consequences of multiple C$10-billion projects occurring simultaneously."

Across Canada can be heard an incredible sucking sound coming from the oil sands, drawing people to work on the massive construction projects, which each employ thousands. But there are still not enough workers and the shortage of skills, particularly in certain fields such as welding, is underpinning the difficulty in getting projects done on time and at cost.

Lee Richardson, president of another of the main construction firms, Fluor Canada Ltd., believes a world-class resource deserves access to a world-class talent pool. "As the oil and gas engineering market keeps growing, we need the Canadian government to open the borders, allowing us to bring in foreign workers—not just craft workers, but also skilled and technical resources.

"The argument that the immigration authorities always use is that, by doing this, we are taking a job from a Canadian citizen; our argument is that there is no Canadian to fill the job!"

There is little to suggest all the oil-sands projects currently planned will come to fruition within their suggested time-frames, and there will have to be some selectivity as to which projects go ahead. However, an investment in the oil sands is major and few would like to see their sunk costs go down the drain.

Like a giant freight train pulling out of the station, there are big strains for the oil-sands sector to take onboard, but with the momentum already built up, it would take something significant to derail the relentless development under way.

Furthermore, while the oil-sands industry is still in its relative infancy, there remains widespread optimism that the rate of technological progress already seen in the sector will continue and that this holds great potential for cost reduction and im-

> **"Currently,** *with in-situ projects, what is used to heat the bitumen is natural gas...."*
> *Phil Prince, CERI*

Fluor Canada at the Calgary Stampede that is held each summer, celebrating the city's western heritage.

proved productivity in the future.

"Just through technological improvements, there are tremendous opportunities for investment," says William McCaffrey, chairman of MEG Energy, one of the largest private companies currently involved in the oil sands. "The resource is large and any technological development has the potential of adding precious value."

Extraction technology

Phil Prince, president of CERI, agrees. "Currently, with in-situ projects, what is used to heat the bitumen is gas, which makes the process very costly and environmentally unfriendly. But as technology evolves and costs go down, the potential for the future will be staggering."

Technological development also looks to provide the opportunity for smaller companies to develop a niche in the oil sands with a potentially massive prize at stake. For areas too deep to mine, the common method of extraction is SAGD, whereby steam injected into the reservoir melts the bitumen, which is then pumped to the surface.

Producing the amount of stream required (commonly between two and four barrels of water per barrel of oil produced) takes a lot of energy. This presents the issue that a premium fuel, natural gas, is being used to produce a dirty fuel.

Seeing the potential in being able to offer an alternative to natural gas, Alfred Fischer, chief executive of Quadrise Canada Fuel Systems, came out of retirement to develop a bitumen-emulsion fuel, MSAR (multiphase, superfine, atomized residue).

"The feedstock is right where there is this huge need for energy, so it was the ideal market for us to focus on," Fischer says. Furthermore, the company has developed additional technology, MCAST (MSAR combustion and sequestration technology), which burns the emulsified fuel in an oxygen environment to produce very high-quality CO_2 that can then be reinjected into the reservoir to restore pressure, or used for sequestration.

"In the process, water is knocked out of the flu gas creating a zero-emission SAGD project that is self sufficient from a water perspective too!" Fischer says. Unsurprisingly, the technology is starting to attract real interest from companies and the government alike.

It was the Alberta Oil Sands Technology Research Association (AOSTRA) that initially developed the technology behind SAGD. Now in the hands of companies prepared to take the risk, there is the hope that other technologies spawned from the Alberta government-funded institute can contribute similarly to oil-sands production in the future.

Using an underground-well delivery system piloted by AOSTRA in the 1990s, privately held OSUM Oil Sands Corp. is the only junior with a material position in the Cold Lake Clearwater thermal trend.

The company's application of the underground technology makes it possible to extract bitumen unobtainable by conventional surface drilling and has allowed the company access to premium reserves previously untouched. These reserves are adjacent to Imperial's (ExxonMobil's Canadian affiliate) Cold Lake megaproject, which is producing 160,000 BOE per day and is the largest producing oil-sands project in Western Canada.

OSUM's Marie Lake project has the potential to produce 30,000 BOE per day. "Surrounded by Imperial, everyone thought that the land was locked in, but we can access it," says OSUM chairman and chief executive Richard Todd. "And in terms of the quality of the bitumen, it is the best of the best."

In developing its land base, OSUM follows a strict policy of focusing on high-quality reservoirs with close access to in-

“**Importantly,** *because we don’t need to generate steam, our water use is negligible.” John Wright, Petrobank Energy and Resources*

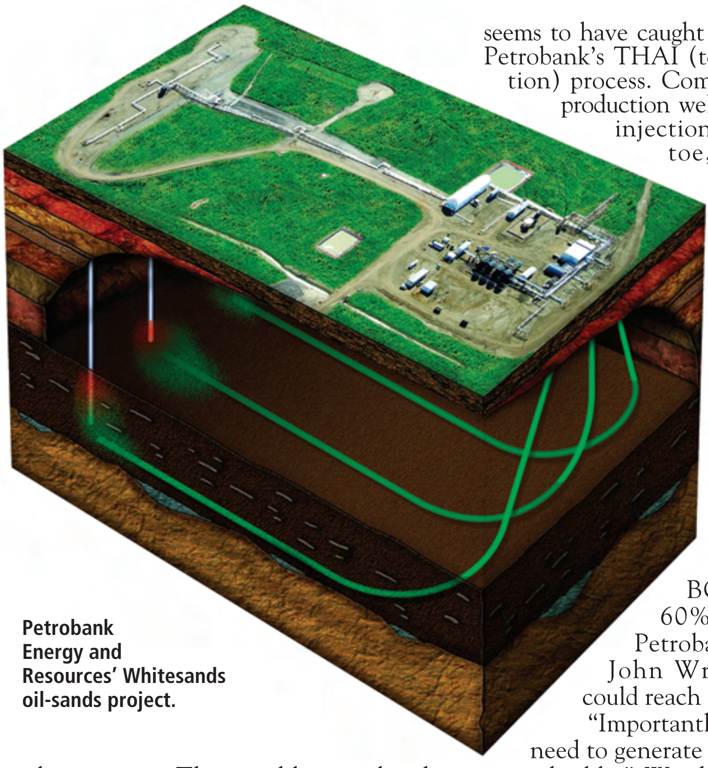
frastructure. “There’s a perception out here that there is bitumen everywhere and every bit of ground is the same, and that’s just not the case. You do have to take a rifle shot to where you want to go, and in the oil sands one thing is clear: The best reservoir wins.”

Being able to identify and get access to “the Goldilocks reserves”—not too deep to mine, not too shallow for in-situ development and with good consistency in terms of bitumen quality—is still the preferred route for most oil-sands developers. But once again, technology may soon broaden what is considered economically accessible.

In fact “too deep to mine; too shallow for SAGD” is exactly the sort of play Bruce McGee, president and chief executive of E-T Energy, is looking for. Again, using technology that came out of AOSTRA, E-T Energy recently finished testing electrodes in the ground, instead of steam, to melt the bitumen.

“The proof of concept has been amazingly successful. Even with failed electrodes, the results were better than we had anticipated.” McGee is now awaiting third-party certification on the technology, and expects this sometime in the new year.

Although SAGD itself is still only in the toddler stages of development, McGee says there is sometimes a curious apprehension in the sector towards considering



Petrobank Energy and Resources' Whitesands oil-sands project.

alternatives. The trouble may be that sometimes things seem too good to be true. Despite the initial excitement about a new technology, it can become a real challenge and take many years before being widely accepted.

However, one technology that certainly seems to have caught people's attention is Petrobank's THAI (toe-to-heel air injection) process. Combining a horizontal production well with a vertical air-injection well placed at the toe, THAI creates an underground firewall that sweeps through the reservoir, melting the bitumen on its path.

Just one year from construction of the company's Whitesands testing facility, three THAI well pairs have already demonstrated a production capability of almost 2,000 BOE per day and a 60% recovery rate. Petrobank chief executive John Wright believes this could reach as high as 80%.

"Importantly, because we don't need to generate steam, our water use is negligible," Wright says. With water use becoming a key environmental consideration in oil-sands development, the THAI process looks to be ticking as many boxes as it can. The next step for the company is to enter the commercial phase, which, as well as capturing additional resources to expand Petrobank's operations, will involve licensing the rights to use THAI around the world.

As Alberta's oil-sands development progresses, it continues to accelerate well beyond the level of any other oil-sands project in the world.

The current economics may look delicately balanced, but this dynamic is also the driving force behind the development of new, more productive, cleaner technologies—technologies that can only improve the oil-sands industry's image in the minds of Canadians, and strengthen Canada's global competitive advantage abroad.

Unconventional gas

Michael Gatens, chief executive of Unconventional Gas Resources, says, "A lot of people still don't really have a clue about what unconventional gas is." No doubt overshadowed somewhat by the excitement surrounding the oil sands, unconventional gas has perhaps not had the sort of attention it deserves, but this can only change over time.

Already around 15% of Canada's gas production comes from unconventional sources—tight gas sands, shale gas, coalbed methane (CBM) and carbonates—but this figure is expected to increase dramatically in the future as conventional supply continues to drop off.

"It is projected that by 2025 some 50%

*"**A lot of people** still don't really have a clue about what unconventional gas is."*
Michael Gatens, Unconventional Gas Resources

of gas production in Canada will come from those difficult-to-obtain reservoirs, currently considered unconventional, which will also account for around 80% of new drilling activity," says Mike Dawson, president of the Canadian Society for Unconventional Gas (CSUG).

In fact, what coverage unconventional gas does get in Canada is often of the wrong sort for the industry. The contamination of water aquifers and the density of well spacing are two oft-cited "problems" with unconventional-gas development.

"Some anti-development groups and media do not present a very balanced view of how many energy projects are actually being developed here. This creates a lot of unjustified and unconstructive fear and apprehension within the general public," Gatens says.

However, even if in the past, the industry has not been as effective as it could

EnCana and ConocoPhillips' SAGD operations are to produce 400,000 barrels per day in the next decade.

"We need to continue to look at every aspect of the business and 'drill down'…." Gerard Protti, EnCana Corp.

be in terms of communicating the good things it has done or what it planned to do, there is now at least an increased appreciation of the need for good community relations.

"A few years ago I could see that tension between stakeholders and operators was rising. It was clear that a strategic, coordinated stakeholder-relations program would provide a significant competitive advantage for the company," Petro-Canada's Sendall explains.

"As a result, we have put a tremendous amount of effort into building an effective stakeholder-relations program and promoting stewardship from within."

Gerard Protti, EnCana executive vice president, also senses that stakeholders are continuing to raise the bar in terms of what they expect from development.

"Not only the positives, such as jobs and economic activity," he explains, "but also, our ability to mitigate our impact on the environment and the amount of disturbance we cause. It's up to us each year to prove that we are listening and demonstrate continuous improvement."

As one of the leaders in Canadian CBM development, EnCana has the size to apply economies of scale to increase efficiencies and get access to land where one can employ a manufacturing approach over a large area. Still, the company is not immune to the pressure of the recent lull in gas prices and Protti values the discipline needed for the company's capital program.

"We need to continue to look at every aspect of the business and 'drill down,' getting more micro in terms of the analysis of our operations to see where we can improve efficiencies. When you have a resource that is relatively high-cost you have to ensure that it's going to remain economic under any price scenario."

At the other end of the scale, CSUG's Dawson believes

EnCana and ConocoPhillips' Christina Lake oil-sands facility.

A drilling rig in Brooks, Alberta. (Photo courtesy of EnCana.)

there is a role too for junior companies. "By focusing on one or more aspects of natural gas, because they don't need such a significant land base and reserves, they have the advantage that they can maybe step in and pick up the sweet spots," he says.

One such junior with an appetite for blue-skies exploration in unconventional gas is Stealth Ventures. "When we developed our corporate strategy one of the things we wanted to do was be as far away from the royalty-trust producing asset as we could be," says Rob Bell, chief executive officer.

"We wanted to be at the early stage of exploration and that is what we now are and what we have built our team and asset base around."

Concentrating on CBM development in Nova Scotia and shale-gas properties in western Alberta and Saskatchewan, some vindication of the company's relatively high-risk business model has already been seen with one property (Wildmere, Alberta) already moving into the development stage.

"It's full-cycle, exploration to production," Bell says, "something that's always the goal in the oil business, and if you can do that, then that's always been the soundest business model."

And in 2007, it is all about having a sound business model. In the short term, companies are still reacting to lower gas prices, pressure on manpower and higher service costs. "There's a lot of vulnerability out there right now," Gatens says, "but in the long-term, things are still solid." □

Canadian Oilfield Services

Service providers are finding fewer opportunities this year than last, but the sector remains strong, and is finding growth abroad.

As is the very nature of the oil and gas industry, the Canadian oil and gas sector has experienced some tough times. Memorable for many would be the period from 1986-92 when the National Energy Policy, combined with the deregulation of natural gas in Canada, caused the industry to crumble.

However, by 2006, such troubled days seemed a long distant memory. With record drilling, the explosion of interest in the oil sands and strong commodity prices, it was hard to imagine the good times could end. During 2006, some 23,300 wells were drilled across Canada. On a global scale, the Canadian oilfield-service market has grown to be No. 2 only to the U.S. in terms of size.

Through 2006, however, the pressures of five years of continued growth in activity began to show, and sure signs the sector was overheating emerged. Costs were inflating rapidly, sparked by wage inflation and a shortage of supplies, and operators increasingly experienced the inefficiencies associated with new, poorly trained crews and the logistical challenges of coordinating different service providers in a stressed market.

Weakening gas prices, which started in the summer of 2006, conspired to further undermine operators' confidence and many opted to reassess their capital programs going forward. This precipitated a slump in the demand for oilfield services, and this became evident in early 2007 as activity levels fell short in comparison with the previous year.

In July 2007, the Petroleum Services Association of Canada (PSAC)'s forecast for the number of wells to be drilled in 2007 was lowered to 17,650 with its president, Roger Soucy, admitting that "the further we go through the year, the less likely it is that a turnaround will occur in 2007."

The drop in activity has left many in the lurch: Struggling to keep up with demand in 2006, many service companies overstretched to the point where now they find themselves hoist by their own petards, often heavily indebted and vulnerable.

True, a sense of perspective is required, and even at 16,000 wells, the industry would be in much better shape than it was a decade ago. But for many, the pullback is proving an untimely and painful experience.

"Given the boom that we have witnessed over the last years, it would be hard not to expect a bit of complacency to have crept in," Soucy says.

Don Herring, president of the Canadian Association of Oilwell Drilling Contractors (CAODC), says, "The decrease from

A drilling job by Trinidad Energy Services Income Trust.

23,000 wells drilled down to below 20,000 is going to have a significant impact on services companies, and it's likely we shall witness consolidation in the sector, which could put some pressure on small companies."

Of the 22,127 wells drilled in Western Canada in 2006, 70% targeted gas, so those service companies most heavily geared towards gas—shallow gas, in particular—are expected to fare the worst.

Weakening gas prices have certainly played an important part, but as Soucy notes, it could be much worse. "A critical gas price would be something like C$5, which would really impact the industry."

A gas price of C$7 per million Btu is relatively robust when one considers that just a few years ago, gas was lurking around C$2. Of course, the cost of producing gas was closer to C$2 then, but now there is no more C$2 gas around, regardless of cost inflation. This is the reality of operating in a fast-maturing basin, one that has seen as many wells drilled in the past 10 years as were drilled in the previous 50.

"For a lot of clients, their opportunities are substandard, but again there is a correction taking place in the market," says Michael Heier, chairman and chief executive of Trinidad Energy Services Income Trust. "The easy-to-go-after stuff is gone and you're chasing tougher and tougher opportunities. It's not a linear scale; the development of a basin follows a hyperbolic cost curve with higher and higher finding and development (F&D) costs as you go down the resource pyramid."

To a great extent the downturn was due to economics getting out of hand, but the weather and an untimely dose of government intervention have also had a role. Activity in Western Canada annually experiences a seasonal slowdown in the spring as the ground thaws, inhibiting access for the rigs. But this year, the effect has been particularly pronounced.

Doug Robinson, president and chief executive of Enerchem, describes 2007 as having had one of the worst break-ups in 10 years. "It was a terrible April and May. Everyone thought they would be back to work in June and then the monsoons hit—then Stampede Week (a 10-day celebration of Calgary's heritage) and then the golf season started!"

The seasonal blow took rig utilization to just 17% in the second quarter. The CAODC expects the average utilization for the year to settle around 44%, but this figure is only down from 53% in 2006, a record year.

"In what other industry in the world would 53% utilization be considered to be good enough? People from the industry argue that this is the way it has always been in Canada, but there needs to be a change of attitude towards this," Soucy says.

"Technically speaking, it could be possible to use rigs in the second quarter of the year as much as in the first quarter."

Bob Geddes, president and chief operating officer of Ensign Energy Services Inc., points out that, with a fleet in excess of 860 drilling rigs, there is the capacity in Western Canada to drill 40,000 wells per year, though he believes that even at a rate of 25,000 wells, there would still be too many rigs.

"We will have 50% utilization rates for a period of time, and we know that you need 60% utilization rates to maintain pricing pressure upwards."

In many quarters of the service sector, it is claimed that the trust sector played an important role in creating this oversupply, and that the model in general is not as suitable for service companies as on the E&P side. However, by upsetting the applecart and disturbing companies' production plans, there can be little doubt that the trust tax announcement has negatively affected the service sector too, at least in the short term.

Inevitably, the companies best placed to take advantage of the downturn are those with sufficient financial stability to weather the storm. Some companies are presciently hedged against gas drilling in Western Canada through their geographic diversity, a broadened service range or gearing toward the unrelenting oil-sands developments, while others simply had the discipline during the bumper years to keep something back for when times got tough.

According to Geddes, the opportunities in Canada right now do not lie in organic growth, but rather on the acquisition side. "Every day, someone is dropping a package at our door, saying 'Please buy us. Please buy us.' We have all these big trusts, also on the service side, that are going to start falling apart.

"In the past they were based on a non-tax model, and now as they move into a tax world, their returns start to diminish, and if they have any debt they are going to get killed."

The acquisition opportunities in a softened market are also clear to Paul Crilly, president and chief executive of seismic-data acquisition company Norex Exploration Services. "As with every oilfield-service company operating in Western Canada, we have experienced a noticeable decline in activity levels.

"However, we had managed to maintain a very strong balance sheet, and we are looking for opportunities in this difficult climate as part of our corporate acquisition strategy."

On taking the reigns at Norex two years ago, Crilly sought to act on his view that, with the emerging demand for high-resolution 3-D seismic-solution programs, there would be the opportunity to lever a competitive advantage and consolidate in what had traditionally been a very competitive marketplace.

"From our view, what was appealing to

Oilfield services by CCS Income Trust in Western Canada.

our strategy was that the barriers to entry in the industry have gone up tremendously," Crilly says. The company had also increased its insulation against the cyclical nature of the oil and gas business through diversification into mining applications for which Norex has recently completed the largest 2-D seismic program ever conducted in Saskatchewan.

"Operationally, the mining diversification has allowed us to weather a very difficult storm here in Western Canada, but the influence of the oil sands is a great part of our business and the economics there aren't the same as in conventional oil and gas."

Norex ran five crews in the oil sands last winter and expects that to grow significantly again this year. The company has undertaken not only 3-D seismic programs but uniquely 4-D seismic, in which by taking an identical seismic picture over time, customers can better understand the effectiveness of their in-situ operations.

Despite the recent slowdown, Tom Medvedic, vice president and chief financial officer of Calfrac Well Services Ltd. says he is still very bullish, fundamentally, on where Canada is going to go in the long term. "Our expectation is that, as we head into the third and forth quarters, with commodity prices still being relatively strong, we expect activity to pick up."

There is widespread industry concern about gas-storage levels in the U.S., but broadly speaking, due to the adjustments that have already taken place in 2007 and recognition that the correction mechanism for gas prices is getting shorter and shorter, there is considerable hope and some expectation that the downturn will not last long into the New Year, especially if there is a cold winter ahead.

CCS Income Trust personnel at the Calgary Stampede.

"When the Canadian market does turn around there's going to be growth opportunity here and, furthermore, the competitive environment might not be as fierce as it was before the slowdown," suggests Murray Cobbe, president and chief executive of Trican Well Services.

Cobbe does remain concerned about the labor situation, however, and believes that when the market does bounce back, it is likely to be the most significant limiting factor for growth. "There is no doubt that we were overheated, but it is a shame that the slowdown has been to the degree that it put a blunt on the industry's image that it is a business in which people can really make a career."

During the past six to seven years, companies like Calfrac and Trican were able to make the most of the shifting emphasis towards gas production in Western Canada. And amidst competition from the major U.S. service companies, such as Schlumberger and BJ Services, Canadian independent pressure-pumping companies have now gained about a 60% market share in Western Canada.

Calfrac has sought distinction during the past two to three years by shifting a greater focus to northwestern Alberta where the wells become much deeper with a greater need for technology. Beyond diversification into new geographies within Canada, however, both companies are part of a substantial, and growing, number of internationalizing Canadian service companies, seeking insulation from cyclical volatility at home and new areas of growth.

Maple Leaf goes travelling

"We had experienced a splurge of growth here in Western Canada but recognized that there would come a point of diminishing returns for us here," Cobbe says. In 2000, Trican became involved in Russia with an investment in Newco Well Services, a small pressure-pumping company.

Trican started in Western Siberia but was recently awarded its first contract in Eastern Siberia where, Cobbe says, there is significant opportunity for more work to be done in the future.

"The vision behind the move into Russia was to employ the same growth strategies there that have led to our success in Canada: namely, providing high-quality and innovative solutions, using state-of-the-art technology and equipment deployed by a highly trained and reliable workforce."

Typical of many a Canadian service company overseas, the company has a very Russian identity there and virtually all employees are Russian.

At Ensign, 50% of its rigs are now outside Canada, across 11 countries, and Geddes believes that, through the way they interact in local markets, Canadians benefit from a competitive advantage in the international arena.

"...Things are going well *with last year's U.S. acquisitions."*
David Werklund, CCS Income Trust

"We take a domestic approach towards management in our international operations. We are not imperialists, and there are a lot of reasons why a business is done in a certain way—you have to work with people that have grown up in the local business environment."

Canadians are, of course, particularly well placed to serve their U.S. neighbors and south of the border, Canadian internationalization appears well received. "Integration is a process and things are going well with last year's U.S. acquisitions," says chief executive David Werklund of CCS, Canada's leading environmental-protection and waste-management services company.

"Our U.S. people embrace CCS and are proud of the company. There isn't the resentment towards us that we thought might be there and we are treated very well."

A series of acquisitions during the past two years has seen CCS impose its footprint. "As a service provider in our core business, we may even be the largest in the world. The oil companies primarily handle their waste themselves—third-party providers only account for 35% of the volumes, but this number is growing."

Werklund believes he can pick up work all around the globe in this regulation-driven business. Such is his confidence that in June, with an investor group, he acquired the company from its trust unit-holders.

Thanks in part to the success of its mining groups, Canadian companies enjoy an excellent reputation in extraction projects worldwide. Technologically adept and well equipped, they make attractive partners. With a growing reputation for deep finesse drilling, Trinidad has also made substantial inroads into the U.S. market.

"Fewer than 50% of our rigs are in the U.S., but this country will account this year for 50% or more of our cash," says Trinidad's Heier. "Our new AC deep-capacity rigs are some of the most sophisticated drilling rigs on the planet. They can work in the Arctic as well as in the desert.

"Our clients were stunned when they saw them! Every rig we build has a top-drive, something I cannot imagine doing deep drilling without and something the majority of U.S. rigs are without."

As yet, Trinidad has no activity outside North America, but according to Heier, the company is already in discussions with a number of clients because of the performance they have seen Trinidad deliver locally.

"Going forwards, the service requirements in the international arena are unbelievably huge. From a service perspective it's great as it's the first place that the buck stops, and as drillers, we are the lead service. When we are talking deep drilling, it's long-term contracts with multibillion-dollar entities."

Things might be sullen on the home front, but at least in international waters it seems Canadian services companies do have a smile on their faces. ☐