

GOING THE Distance

BY JIM VEENBAAS

Alberta's oilsands industry is poised for a 25-year run to become a bigger world player.

IT'S BEEN NEARLY 40 YEARS SINCE THE first oilsands operation was carved into the wilderness of northeastern Alberta. From humble beginnings of 45,000 barrels of oil per day, the industry has exploded in the last 10 years to produce one million barrels per day. The landscape of the oilsands has forever been altered. No longer is the industry dominated by the pioneers – Sunco Energy Inc. and Syncrude Canada Ltd. More than 20 developments have sprung up in a wave of construction that has swept the region. The resource stretches across an area of 140,800 square kilometers – home to an astounding 1.6 trillion barrels of bitumen (in place).

“It’s unbelievable what has happened over the course of the last 50 years,” says Brad Anderson, executive director of the Alberta Chamber of Resources (ACR). “There was a huge investment before any money came back,” he says. “If it had not been for some pretty brave companies, some pretty smart governments in Alberta and some great research, we might not be where we are today.”

Indeed, between 1996 and 2003, \$28 billion was invested in new projects. The current development surge is anticipated to double production – two million barrels per day by 2012. The list of projects planned and under construction tops 50, proposed by a mix of Canadian and international energy names like Petro-Canada,

Canadian Natural Resources Limited, Husky Energy, ExxonMobil Corporation, Shell Canada Limited and ConocoPhillips.

The phenomenal growth stems from several factors, but the paramount driver is technology. Breakthroughs have slashed operating costs. “People recognized conventional production out of the Western (Canadian) Sedimentary Basin was falling and needed to be replaced,” says Andre Plourde, energy economist and chair of the University of Alberta’s Economics Department. “They understood the technology a bit better, they understood that future oil prices seemed solid, there was a need to replace production and it was clear the United States was becoming increasingly dependent on imports,” he explains. “All of this played together to create a good investment climate.”

The economics of oilsands development changed in the ‘90s when the Alberta government stimulated activity by revamping the oilsands royalty regime. In 1996, royalty payments for oilsands projects were set at one per cent of gross revenues until each development recouped the cost of construction. The impact was immediate. Investment jumped to \$1 billion the following year and climbed to nearly \$3 billion by 1999 and continued rise with more players entering the industry.

“The new royalty regime provided some stability for planning and also deferred some of the government’s payments until the

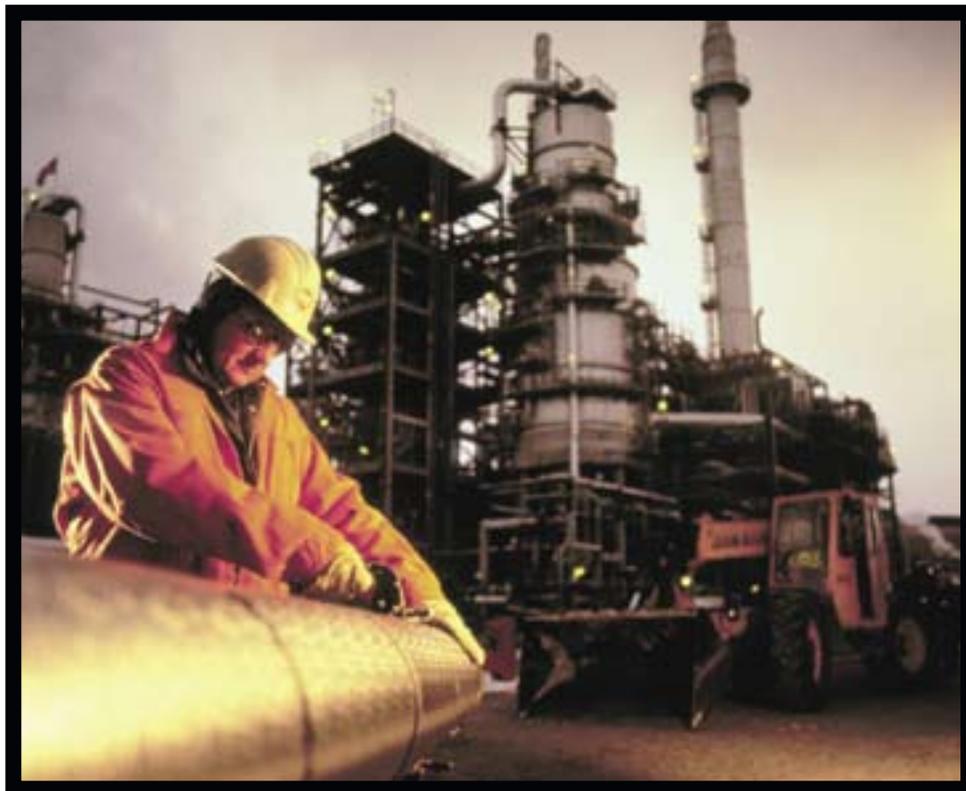
capital investments were paid off,” says Don Riva, vice-president of Deer Creek Energy Limited, which owns a majority stake in the Joslyn Project. It is one of the latest developments and is expected to eventually produce 200,000 barrels per day. “That’s really been a major factor because the biggest barrier to oilsands development [historically] has been the massive cost of entry,” he says. “This at least allows you to recover the capital costs before you are hit with high royalties.”

Notwithstanding, the oilsands success story is founded on research and development. The move from draglines and buckets to truck and shovel mining revolutionized the industry. Lower energy extraction costs and other innovations slashed operating costs by half and even more.

IT IS RESEARCH AND TECHNOLOGY DEVELOPMENTS that will continue to propel industry success. According to the ACR’s January, 2004 final report entitled *Oil Sands Technology Roadmap*, potential output from Alberta could reach five million barrels per day by 2030 and supply 16% of North America’s oil consumption. A key to unlocking markets is creating product variety. Bitumen recovered from the oilsands is unsuitable for processing in conventional refineries. It needs to be upgraded. Adapting the product for conventional uses is an essential ingredient to growth.

“Canada recently eclipsed Saudi Arabia as the top supplier of oil to the U.S. and that total will surely increase,” says the ACR’s Anderson. “Clearly, there is demand for oil from a secure area,” he adds. “With the oilsands, Alberta is probably one of the most strategically situated areas in the world,” Anderson outlines. “We’re already the United States’ number one supplier. We’re ahead of Saudi Arabia now and the U.S. is looking more and more towards a North American continental energy policy.”

The U.S. isn’t the only market interested in Alberta oil. Pipeline companies are spearheading projects to greatly expand volumes of crude flowing from the oilsands to west coast ports. This ultimately opens markets



like California and the Far East to oilsands production. Enbridge Inc. of Calgary is proposing the Gateway Pipeline to carry 400,000 barrels per day to Prince Rupert or Kitimat in northwestern British Columbia. The plan is to ship crude using Very Large Crude Carriers to Asian markets. Construction on the 1,200 kilometre pipeline could begin by 2008 and be operational by 2009. Meanwhile, Terasen Pipelines Inc. plans expansion for the Trans Mountain pipeline running between Edmonton and Burnaby. The TMX Project will double the pipeline’s existing capacity of 225,000 barrels per day by 2010. “The world will demand the development of the oilsands,” Anderson suggests. “It’s not necessarily that all of our oil will go to the U.S.,” he notes. “Lots of countries want our oil.”

With world demand for oil increasing, most experts agree long-term prices will stabilize in the \$30-per-barrel range. Low oil prices nearly crippled the oilsands industry in the early days. “When oil prices fell to \$10 (a barrel) in the ‘80s, that created some

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difficulty for oilsands operations. It's hard to envision something like that happening again," the U of A's Plourde says. "The current price [\$48 per barrel] of oil is probably a premium, but it's hard to make a case that you can't make money with this (oilsands) at \$25," he says. "It's really a healthy operation to be in."

Despite that optimism, the industry must overcome some significant challenges, including sharply increasing natural gas prices, capital cost overruns, environmental impacts, rising steel prices, pipeline capacity and a host of others. Capital costs continue to inflate and with the sheer size and number of new developments, the issue of project management is a concern for investors.

Rapid development has transformed the Fort McMurray region into one of the most prosperous in the country – it's estimated that oilsands production will account for 2% of national GDP by 2012. That could climb as high as 4% if the industry hits five million barrels per day. The pace of activity has strained virtually all services to the edge, not only for oilsands operators, but the entire Fort McMurray community. Straining under the weight of 50,000 residents today, the city is expected to top 65,000 people by 2012. Health and education systems are struggling to keep up with the influx of workers. Housing shortages in Fort McMurray are legendary and the municipality can't keep up with the increased infrastructure needs. All of this is escalating the cost of doing business in the community.

The Athabasca Regional Issues Working Group (RIWG) has identified transportation links as one of the region's top priorities. Inadequate rail and road links make it difficult and costly to move equipment up to the region and have created headaches for local residents. "Highway 63 is a really big issue for us here. There are safety issues and quality of life issues," explains RIWG's executive director Mike Glennon. "No one wants to be stuck behind a coker on his or her way home after a weekend in the city. It creates a big challenge for moving material and equipment up here from the city. We've had several units that take two weeks-plus to get here. Some of these units can only travel at a maximum speed of 15 kilometres per hour."

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REAL DOUCET

Canadian Natural Resources Limited

MOST OF THE ATTENTION, HOWEVER, has focused on the increasing costs of labour and the shortage of skilled workers. The market may seem tight today, but the supply shortage won't even begin to peak until 2007, when investment will rise dramatically. Statistics from the National Energy Board reveal single-year investment in oilsands will hit nearly \$8 billion in 2007 and exceed \$10 billion by 2009.

"When you start to manage a five- or 10-billion dollar project, that's where you start to get into labour, productivity and other issues," Glennon says. "Historically, project management practices were never really designed to address projects of this scale," he says. "I don't think we've had the opportunity to step back and fully analyze the impact of that and have an exhaustive review of those project management practices," Glennon says. "A few organizations are starting to do that that now."

Labour costs have become a top priority for Canadian Natural's Horizon project 70 kilometres north of Fort McMurray. The \$10.5-billion venture will eventually produce 232,000 barrels of oil daily. More than 6,000 workers will be needed during the peak construction period in 2006 and 2007 and will employ a permanent workforce of 2,400 people once fully operational in 2012. Horizon is the single biggest project in oilsands history and is enduring rising capital costs, with the first phase of the project jumping from an initial estimate of \$4.9 billion to \$6.6 billion.

In December 2004, Canadian Natural received a special exemption from the provincial government under Division 8 of the

labour laws. The special status allows the company to use non-union and foreign workers and permits Canadian Natural to negotiate one contract with one union that will apply to all workers on the project. It also prevents unions from striking or staging walkouts. Although the company doesn't expect the deal to influence labour costs, it adds greater cost certainty to the Horizon project. "We want to open up this project to every worker in Alberta," says Real Doucet, Canadian Natural's vice president of mining. "We want to become the preferred site for workers in Alberta and across Canada."

The company has even built an airstrip on its property to fly in workers from different locations across the west. Plans call for Boeing 737s to fly people in and out of the work site. "Instead of busing people from Edmonton, Calgary, Saskatoon or Kelowna, we'll fly them in," says Doucet. "When people have days off, they will get home a lot of quicker because they won't lose a whole day driving."

The firm is also deliberating an effort to bring in foreign workers during construction. However, Doucet explains, the importation of workers is a last resort: "That's a contingency plan for us," he says. "We will only use that option if we exhaust the supply of workers in Alberta and the rest of Canada."

HIGH ON THE AGENDA ARE ENVIRONMENTAL issues. The industry has a solid record for improving emissions, reducing water consumption and taking steps to reduce impacts on the environment. However, the cumulative effects of growth will certainly put more pressure on the environment. The Cumulative Environmental Management Association (CEMA) will release its "Instream Flow Needs" study this year. "Water and everything related to it is the number one issue," says CEMA executive director Robert Nowosad. "All of these operations, whether they're mining operations or in situ operations, require large amounts of water," he says. "The Athabasca (River) is a major source of water and these operations are situated along the river so they use a lot of that water." CEMA was established in 2000 and has a variety of working groups set up to examine the major environmental issues facing the industry. Funded by



oil sands producers, CEMA will establish guidelines for operations as those relate to water, soil and air. The group relays findings to the provincial government, which decides if it will change regulations. “Companies are environmentally sensitive, they know they are under the microscope and they know people are watching,” Nowosad says. “In the early days, no one talked about reclaiming as you went along,” he says. “Today it’s an ongoing process. You’re developing at one end and reclaiming at the other end.”

“These are long-term commitments and it’s a long-term plan we have to look at.”

Although the environment and rising costs could pose a threat to future growth, the oil sands have shown a remarkable ability to adapt and thrive, even under the most challenging circumstances. One of the most pressing concerns facing the industry is the uncertainty surrounding the Kyoto Accord. The federal government has approved the international agreement to reduce greenhouse gas emissions, but has stalled in delivering a solid plan to reach its targets under the agreement. “Oil sands companies

are always working to reduce their footprint on the environment, but the big issue in the future is what’s going to happen in terms of Canada’s policy for greenhouse gas management,” says Plourde. “Whatever policy Canada follows is going to be a big issue, but right now the framework for 2008 to 2012 has not even been established.”

JUST AS TECHNOLOGY HAS PLAYED A PIVOTAL role in the first 40 years of oil sands development, it will play an equally important role over the next four decades. In fact, researchers at the University of Calgary are working on a new technology that will use a controlled chemical reaction for bitumen upgrading to occur underground. The impact of such technology is revolutionary in terms of recovery and environmental costs. “Research is the only reason we have the oil sands,” ACR’s Anderson says. “Ultimately, this is a technology-driven business and five million barrels per day requires a lot of technological development,” he predicts. “I expect we will see a lot more improvement in technology as the industry responds to the next set of challenges.”

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