



page 10 Savant ahead of schedule on Badami ice road; will finish well this winter

December Mining News inside



The December issue of North of 60 Mining News is enclosed

Davis asks State of Alaska for guarantee Escopeta's leases can be drilled in beluga habitat

IN LIGHT OF THE IMMINENT CREATION by the federal government of a critical habitat for beluga whales in upper Cook Inlet, Escopeta Oil and Gas President Danny Davis has asked the State of Alaska for assurances that his company will be able to drill and develop the offshore state leases it holds in the area.

In a letter dated Dec. 16 to state Division of Oil and Gas Director Kevin Banks, Davis said he was ready to execute contracts that would result in a jack-up rig arriving in Cook Inlet in April at Escopeta's Kitchen Lights unit.



DANNY DAVIS

But an e-mail from an official with Escopeta's primary investor in the project, Vetra Group, dated the same day and attached to Davis' letter, expressed concern about the beluga whale situation and asked Davis to consider asking the state for a 12-month extension. (As part of its agreement with the State of Alaska to hold onto its Kitchen Light leases, Escopeta has to drill an exploration well in the unit by the end of 2010.)

Vetra official Steve Newton said in the e-mail that the "issue of the beluga whales is really causing major issues, both with the investors in Vetra and possible partners. ... Given the tight time-frames and the uncertainty ... is there any way to get an extension, at least 12 months ... so that we can be confident of being able to both drill the well(s) and develop a discovery?"

see INSIDER page 21



NATURAL GAS

Exxon seeks new life

Bets heavily on unconventional gas as fuel of choice by 2030 in takeover of XTO

By GARY PARK
For Petroleum News

The tipoff was there for anyone caring to pay attention when ExxonMobil declared on Dec. 8 that natural gas would be the fuel of choice in the United States by 2030, shunting aside coal and oil.

Less than a week later the energy giant took a page out of Star Trek by going where no company has gone before.

It offered \$41 billion (\$10 billion in assumed debt) to take out XTO Energy and create the world's largest unconventional gas producer.

Caught off guard by the move, which surfaced at a time of sluggish commodity prices and persistent doubts over the economics of shale gas development, analysts were left scrambling to fig-

"There will be an expansion of natural gas supply, particularly in the U.S. where unconventional gas supplies are expected to satisfy more than 50 percent of gas demand by 2030."

—ExxonMobil's "Outlook for Energy: A View to 2030"

ure out whether other majors might also be on the prowl for other independents with strong positions in shale plays but not the financial means to bring their assets to the next level.

XTO Chairman Bob Simpson, who launched his company 23 years ago, succinctly captured the realities in a conference call Dec. 14.

see NEW LIFE page 18

GOVERNMENT

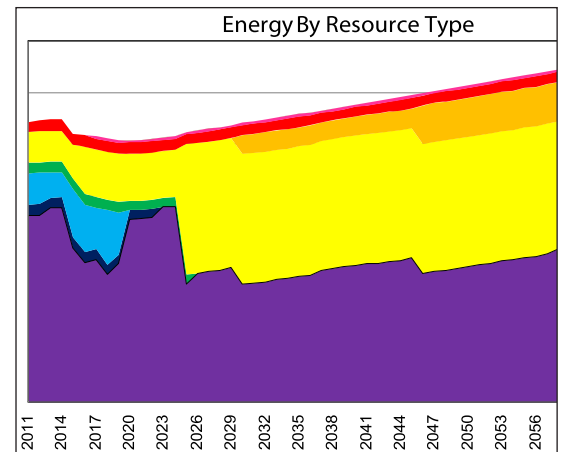
Power for the future

AEA publishes draft integrated resource plan for Alaska Railbelt electricity

By ALAN BAILEY
Petroleum News

The Alaska Energy Authority has published a draft regional integrated resource plan that presents options and recommendations for the future of electricity power generation, transmission and demand management in Alaska's Railbelt.

The plan, commissioned from consultants Black & Veatch, is intended to provide guidance to policy makers regarding infrastructure upgrades and the appropriate mix of energy sources for power generation in the Railbelt over the next 50 years, and forms part of a package of Railbelt energy-related documents and ideas heading for the upcoming legislative session, as lawmakers and the state administration try to grapple with a series of major energy issues impacting the state.



The Railbelt, containing Alaska's main population centers, interconnected through an isolated

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FINANCE & ECONOMY

Cook Inlet Energy's ready

Tennessee's Miller Energy brings \$4.5M to buy, re-start abandoned Alaska assets

By WESLEY LOY
For Petroleum News

Managers for Cook Inlet Energy say they've wrapped up the purchase of a package of formerly abandoned oil and gas properties on the inlet's west side and are moving toward a production restart.

The company worked the deal with the help of a Tennessee oil and gas company, Miller Energy Resources, which rounded up nearly \$4.5 million in financing and which took on Cook Inlet Energy as a subsidiary.

Anchorage-based Cook Inlet Energy was organ-



DAVID HALL

ized earlier this year by former employees of California independent Pacific Energy Resources Ltd., which was forced to abandon the assets in September as part of bankruptcy proceedings.

The properties had become, in the words of the Cook Inlet Energy managers, "wards of the state of Alaska" pending the sale, which a bankruptcy judge approved.

The company said the deal closed on Dec. 10, and now it's aiming to restore production.

"We're immediately hiring back many of the employees who lost their jobs due to the shutdown,"

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Petroleum News

A weekly oil & gas newspaper based in Anchorage, Alaska

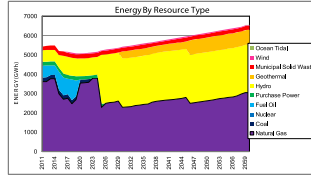
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Alaska - Mackenzie Rig Report

Rig Owner/Rig Type Rig No. Rig Location/Activity Operator or Status

Alaska Rig Status

North Slope - Onshore

Doyon Drilling			
Dreco 1250 UE	14 (SCR/TD)	Kuparuk 2L-326	ConocoPhillips
Sky Top Brewster NE-12	15 (SCR/TD)	Stacked at Kuparuk	Available
Dreco 1000 UE	16 (SCR/TD)	Prudhoe Bay GNI-03	BP
Dreco D2000 UE BD	19 (SCR/TD)	Alpine CD4-24	ConocoPhillips
OIME 2000	141 (SCR/TD)	Stacked at Kuparuk	ConocoPhillips
TSM 7000	Arctic Wolf #2	Stacked at Prudhoe Bay	FEX/Available

Nabors Alaska Drilling			
Trans-ocean rig	CDR-1 (CT)	Stacked, Prudhoe Bay	Available
AC Coil Hybrid	CDR-2	Kuparuk 1B17L1	ConocoPhillips
Dreco 1000 UE	2-ES	Prudhoe Bay, Stacked out	BP
Mid-Continental U36A	3-S	Stacked, Milne Point	BP
Oilwell 700 E	4-ES (SCR)	Milne Point MPL-36	BP
Dreco 1000 UE	7-ES (SCR/TD)	Prudhoe Bay W-56	BP
Dreco 1000 UE	9-ES (SCR/TD)	Orion V-224	BP
Oilwell 2000 Hercules	14-E (SCR)	Kuparuk 2A-27	ConocoPhillips
Oilwell 2000 Hercules	16-E (SCR/TD)	Contracted for work at Gwydyr Bay this winter	Brooks Range Petroleum
Oilwell 2000	17-E (SCR/TD)	Stacked, Point McIntyre	Available
Emsco Electro-hoist -2	18-E (SCR)	Stacked, Deadhorse	Available
Emsco Electro-hoist Varco TDS3	22-E (SCR/TD)	Stacked, Milne Point	Available
Emsco Electro-hoist	28-E (SCR)	Stacked, Deadhorse	Available
Emsco Electro-hoist Canrig 1050E	27-E (SCR-TD)	Point Thompson PTU-15	ExxonMobil
Academy AC electric Canrig	105-E (SCR/TD)	Stacked at Deadhorse	Available
Academy AC electric Heli-Rig	106-E (SCR/TD)	Stacked at Deadhorse	Available
OIME 2000	245-E	Shut down, plan to recommence drilling at OPP in January	ENI

Nordic Calista Services			
Superior 700 UE	1 (SCR/CTD)	Prudhoe Bay Well Drill Site #28A-1	BP
Superior 700 UE	2 (SCR/CTD)	Milne Point Well Drill Site #14-MPE	BP
Ideco 900	3 (SCR/TD)	Kuparuk, 3B Pad, scheduled to start up Jan. 12	ConocoPhillips

North Slope - Offshore

Nabors Alaska Drilling			
OIME 1000	19-E (SCR)	Oooguruk ODSN-42i	Pioneer Natural Resources
Oilwell 2000	33-E	Northstar, Stacked out	BP

Cook Inlet Basin - Onshore

Aurora Well Service			
Franks 300 Srs. Explorer III	AWS 1	Stacked out West side of Cook Inlet for winter maintenance	Available

Doyon Drilling			
TSM 7000	Arctic Fox #1	Stacked at Beluga	Available

Marathon Oil Co. (Inlet Drilling Alaska labor contractor)			
Taylor	Glacier 1	Stacked, going back to work Jan. 7	Marathon Oil

Nabors Alaska Drilling			
Continental Emsco E3000	273	Stacked, Kenai	Available
Franks	26	Stacked	Available
IDECO 2100 E	429E (SCR)	Stacked, removed from Osprey platform	Available
Rigmaster 850	129	Kenai SLU 41-33RD	Chevron

Rowan Companies			
AC Electric	68AC (SCR/TD)	Hansen #1A-L1 workover, Cosmopolitan	Pioneer Natural Resources

Cook Inlet Basin - Offshore

Chevron (Nabors Alaska Drilling labor contract)			
	428	M-20 Steelhead Platform	Chevron

XTO Energy			
National 1320	A	Platform A no drilling or workovers at present	XTO
National 110	C (TD)	Idle	XTO

Kuukpik	5	Stacked in Kenai	Available
----------------	---	------------------	-----------

Mackenzie Rig Status

Canadian Beaufort Sea

SDC Drilling Inc.			
SSDC CANMAR Island Rig #2	SDC	Set down at Roland Bay	Available

Mackenzie Delta-Onshore

AKITA Equitak			
Modified National 370	64 (TD)	Racked in Inuvik	Available

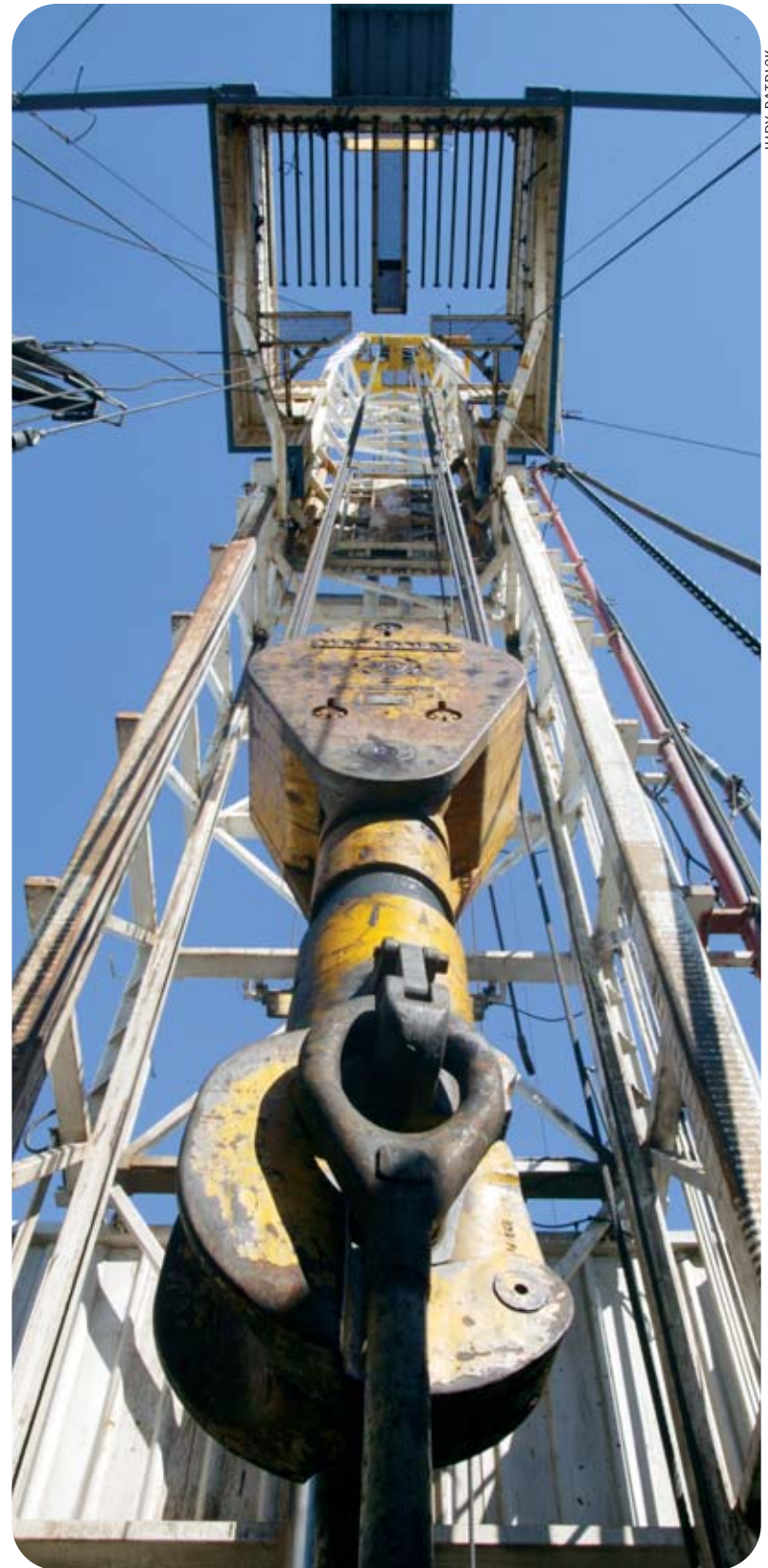
Central Mackenzie Valley

Akita/SAHTU			
Oilwell 500	51	Racked in Norman Wells, NT	Available

The Alaska - Mackenzie Rig Report as of December 17, 2009.
Active drilling companies only listed.

TD = rigs equipped with top drive units WO = workover operations
CT = coiled tubing operation SCR = electric rig

This rig report was prepared by Marti Reeve



JUDY PATRICK

Baker Hughes North America rotary rig counts*

	Dec. 11	Dec. 4	Year Ago
US	1,161	1,141	1,790
Canada	354	364	390
Gulf	37	36	62

Highest/Lowest

US/Highest	4530	December 1981
US/Lowest	488	April 1999
Canada/Highest	558	January 2000
Canada/Lowest	29	April 1992

*Issued by Baker Hughes since 1944

The Alaska - Mackenzie Rig Report
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• NATURAL GAS

Mackenzie Gas Project report on its way

By GARY PARK
For Petroleum News

Backers of the Mackenzie Gas Project have a date — Dec. 31.

That's when the Joint Review Panel is expected to meet its promised deadline and deliver its findings on environmental and socioeconomic issues, Northwest Territories Industry Minister Bob McLeod told reporters in Calgary Dec. 15.

"My expectation is that it will be a positive report," he said, insisting northern gas still has a place in the North American market, despite the surge of competition from shale gas and technological advances in the extraction of gas from fields closer to markets.

If McLeod's prediction is accurate, that would be the first positive development in a long time for the plans to deliver up to 1.9 billion cubic feet per day of Mackenzie Delta gas to southern markets.

However, the actual date has yet to be confirmed. Brian Chambers, executive director of the federal government's Northern Gas Project Secretariat, said the review panel will

Chris Theal, an analyst with Macquarie Research, is one of many observers who argue that Arctic pipelines can't compete with shale gas, suggesting that ExxonMobil's bid to acquire XTO Energy has added at least five years to Arctic gas development.

set the release date.

The MGP is "still a high priority for our government and we want to make sure that everybody in Canada and particularly (in the federal government) understands that this project is in the national interest," McLeod said.

He said it is equally important for all Canadians to appreciate that the benefits of Arctic gas development will extend far beyond the NWT, with the "main beneficiaries" being in Alberta, Ontario and Quebec.

He estimated the MGP could generate C\$10 billion in federal tax revenues and boost the Gross Domestic Product of Alberta by C\$9 billion and Ontario by C\$5.5 billion.

McLeod said he does not expect the Canadian government to disclose the financial packages offered to the MGP

partners before the review panel issues its recommendations.

But he said a fiscal deal must be reached by Ottawa and the MGP consortium, led by Imperial Oil, before Canada's National Energy Board starts its final hearings in April.

The panel is anywhere from two to four years behind its anticipated schedule when it embarked on hearings in summer 2004 and millions of dollars over budget.

Those delays have seen the rapid emergence of shale gas raise questions about the need for Arctic gas development in both the NWT and Alaska.

Chris Theal, an analyst with Macquarie Research, is one of many observers who argue that Arctic pipelines can't compete with shale gas, suggesting that ExxonMobil's bid to acquire XTO Energy has added at least five years to Arctic gas development.

He predicted Imperial will seek final approvals so that it is positioned to move ahead when the gas is needed.

Michael Sloan, senior project manager for consultant ICF International, said his firm no longer includes Mackenzie gas in its supply mix "given what's happened to shale gas supplies." ●



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• PIPELINES & DOWNSTREAM

Huge tariff increase

Cook Inlet Pipe Line Co. cites Mount Redoubt damage for 259% hike; west side line runs 42 miles from Granite Point to Drift River

By WESLEY LOY
For Petroleum News

Citing damage from the erupting Mount Redoubt volcano, Cook Inlet Pipe Line Co. is seeking a steep rate increase from Alaska regulators.

The company, a Chevron subsidiary, submitted a tariff of \$14.57 per barrel of oil, effective Jan. 1. That's a 259 percent increase over the current rate of \$4.06.

"Beginning on March 23, 2009, there was a series of volcanic events at Mt. Redoubt which disrupted operations, significantly curtailing transportation and caused extensive damage to CIPL facilities," says the company's Nov. 30 tariff advice letter to the Regulatory Commission of Alaska.

CIPL said it calculated the new rate using a methodology established in a 2001 settlement the commission accepted.

The tariff hike rankled at least one oil and gas producer, Cook Inlet Energy, a new company that's taking over abandoned properties formerly operated by California-based Pacific Energy Resources Ltd., which is going through a bankruptcy liquidation.

Producer protest

"We object to the proposed tariff," David Hall, chief executive of Cook Inlet Energy, said in comments filed with the RCA on Dec. 10.

Production from wells Cook Inlet Energy has acquired on the west side of Cook Inlet will rely on the CIPL system, Hall said.

"We respectfully request that the RCA review this tariff, its justification and impacts, and fulfill its obligation to balance the interests of the parties for the best interests of Alaska," he said.

CIPL's tariff appears to be improper, Hall said. The pipeline operator is pursuing "unduly speedy recovery of expenses," he said, and has not informed shippers of its long-term tariff plans.

Hall said Cook Inlet Energy would be resuming production from its west Cook Inlet properties in coming weeks, moving its crude oil via CIPL to refiner Tesoro.

Counting tanker costs, the fledgling producer now faces a transportation rate of nearly \$20 per barrel, a burden that "will have grave impacts on oil companies remaining in the Cook Inlet basin," Hall said.

Volcanic threat

CIPL operates a 20-inch pipeline that runs 42 miles from Granite Point southwest along the western shore of Cook Inlet to the Drift River Oil Terminal, which also belongs to CIPL. The pipeline was installed in 1966.

Chevron subsidiary Unocal owns half of CIPL, while Pacific Energy continues to hold the other half.

Multiple eruptions last March and April at Mount Redoubt, located 103 miles southwest of Anchorage, forced a shut-in of most oil fields on the west side of Cook Inlet and created an emergency at the terminal near the mouth of the Drift River.

see TARIFF HIKE page 8



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Canada: Cleaning off a 'dirty' image

Canadian, Alberta political, industry leaders defend record in oil sands, say they are ready to participate in any Copenhagen deal

By GARY PARK
For Petroleum News

Government and industry leaders are fighting back against a tidal wave of criticism and abuse flowing from the Copenhagen climate change summit that has Canada cast as a "corrupt petro-state" because of the Alberta oil sands and the biggest single obstacle to a post-Kyoto deal.

In Denmark for the final days of the summit, two environment ministers — Canada's Jim Prentice and Alberta's Rob Renner — are trying to turn the tide of public opinion, against daunting odds.

Prentice is adamant that Canada "wants to achieve ... a new agreement," so long as its policy for cutting greenhouse gas emissions is in lockstep with the United States and it does not "suffer economic pain for no real environmental gain."

Known for his good cheer and unflappable manner, Renner has been campaigning in Copenhagen, presenting Alberta as the only jurisdiction anywhere with experience operating and regulating a process for imposing financial penalties on major industrial GHG emitters and now investing C\$2 billion in four projects to develop and demonstrate carbon capture and storage technologies.

"Protesters and those who posture are using the grand stage at Copenhagen to launch low blows at our province. However, Alberta can hold its head high as a responsible major global energy producer already acting to make real greenhouse-gas reductions."

He said there is no justification for fining the oil sands as a greater source of GHGs than oil development in Venezuela or California.

"Alberta is committed to doing its share and we're not asking for any kind of special concessions or any kind of exemptions for the oil sands," Renner said.

Rating the Kyoto Protocol as a failure because neither the United States nor China were signatories, he said any pact at Copenhagen "must be comprehensive, fair, achievable and transparent. Make no mistake, Alberta welcomes an ambitious agreement. It's half-measures that concern us."

Canada will stick to commitment

Prentice said Canada will stick to its

commitment to cut GHGs 20 percent below 2006 levels by 2020.

"We refuse to repeat the mistakes of the past," he said, in a clear reference to Kyoto.

"That is why it's imperative that we not rush into a deal for the sake of saying we've taken action. There's always a lot of hype and drama that gets built into this sort of international event, much of it intended to force the hand of participants. We aren't going to buy into that. We are not going to panic."

David Collyer, president of the Canadian Association of Petroleum Producers said oil and gas producers are doing their share to fight climate change.

While conceding that emissions continue to rise from the industry, Collyer said the critics fail to acknowledge that companies are working to reduce that increase.

"It's quite an unfair characterization of how our industry fits in a broader context with respect to greenhouse gas emissions and the performance of the oil sands industry over the last several years," he said, estimating the oil sands operations are responsible for about 0.1 percent of total global GHGs and 5 percent of Canada's GHGs.

Letter urges halt to projects

His remarks coincided with a letter sent by 11 members of the European Parliament to leading oil and gas executives, urging them to halt their projects in the oil sands because the sector produces two to three times more pollution than the fuel extracted from conventional sources and disrupts natural carbon sinks, forests and peat lands.

"Right now, during the climate negotiations in Copenhagen, the interest of some energy companies in this massively destructive energy source is difficult to understand," the politicians said. "The momentum for the creation of a global low-carbon economy and turning away from fossil fuels is stronger than ever before."

The letter landed on the desks of Royal Dutch Shell, BP, Statoil Hydro and Total.

It coincided with a statement by one of the Canadian industry's most respected



ROB RENNER

voices.

Murray Edwards, vice chairman of Canadian Natural Resources, said the industry must accept some responsibility for "not being as pro-active as it should have been or could have been over the last decade in making sure the public understands the balance in the oil sands between the economy and the environment."

He suggested that rather than putting money into marketing, the industry should direct its efforts toward "making advancements in terms of the impact on the environment."

Statoil unapologetic

Of the European-based companies with stakes in the oil sands, Statoil, following its C\$2.2 billion takeover of North American Oil Sands Corp. in 2007 and its development of a 10,000-barrel-per-day demonstration project, currently 73 percent complete, makes no apologies for giving such a high priority to the resource.

Lars Christian Bacher, newly appoint-

ed president of Statoil's Canadian unit, said the demonstration plant is designed to prove to the company and various stakeholders that bitumen can be produced profitably and in an environmentally friendly way.

The oil sands are "our single-biggest oil reserve as of today outside Norway," he said. "Canada has a huge reserve base and we will try to be part of developing the resources for the best of (Alberta) and our company," Bacher said.

"We are determined to stay in the oil sands and develop the resources," while being open to any suggestions on how to work closely with those who can suggest ways to reduce the environmental impact.

"Our future projects will be built carbon-capture ready, but we see that kind of technology definitely needs a lot of improvement before it's economically feasible," he said.

Bacher said Statoil's research and development center in Calgary will be a "technology center for heavy oil activities, not only in Canada but elsewhere." ●



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GOVERNMENT

Exploration credits holding steady

Proposed FY 2011 budget has \$180M for tax credits, funds in-state and out-of-state gas, variety of other resource-related projects

By ERIC LIDJI
For Petroleum News

The \$10.5 billion budget proposed by Alaska Gov. Sean Parnell on Dec. 14 continues to fund many resource development projects started under the Palin administration, and creates several new projects, many focused on expanding infrastructure to improve access.

The proposed fiscal year 2011 budget — which the state Legislature will begin debating in January — sets aside \$180 million for exploration tax credits, \$150 million to reimburse work performed under the Alaska Gasline Inducement Act, \$6.5 million for in-state natural gas development and \$15 million for resource-related road construction and improvements.

The proposed budget also sets aside \$25 million for the Renewable Energy Grant Fund.

Parnell based his first budget as governor on Alaska producing 623,000 barrels of oil per day at an average price of \$76.35, yielding around \$5.42 billion in unrestricted revenue.

Tax credit funding steady ...

The \$180 million appropriation for exploration tax credits is the same amount the Legislature approved for fiscal year 2010, but a decline from previous executive requests.

That, combined with recent administration projections about industry spending, suggests oil industry investment may be on the rise in Alaska and explorers are bringing projects online, but new companies are

not necessarily arriving in the state in equal number.

The exploration tax credit is a key component of Alaska's Clear and Equitable Share, or ACES, the new state fiscal regime for oil and gas development approved in late 2007.

Until spending plans began rolling in as required by the law, the state had to guess what it would need to set aside for credits. In FY 2009, the first budget cycle after the passage of ACES, the Legislature set aside \$400 million for exploration tax credits. In her proposed FY 2010 budget, then-Gov. Sarah Palin initially requested \$300 million for tax credits.

That decline most likely represented the startup of oil production from the offshore Oooguruk unit in June 2009. Oooguruk gave operator Pioneer Natural Resources and its partner Eni Petroleum their first production in Alaska, making the companies taxpayers.

Companies that produce oil in Alaska and pay production taxes to the state don't claim exploration tax credit certificates, which must be reimbursed by the state or sold to a third party. Instead, they simply deduct expenses from their tax payments.

As a result, the cost to the state shifted from "credits being paid" to "taxes not being received," and the budget line for the tax credit program fell even as investment rose.



GOV. SEAN PARNELL

If those figures prove accurate, the administration's decision to fund the exploration tax credit program at FY 2010 levels suggests it believes that current oil producers will increase spending, while explorers without production will hold spending levels steady (or at least request credits this year at the same level they requested them last year).

In a revised FY 2010 budget, Palin lowered her \$300 million request to \$200 million. At the time, state officials said the reduction also didn't indicate a drop in investment, but rather the lag time for getting and reimbursing requests from companies claiming credits.

That lag continued to play a role in the creation of the FY 2011 budget, Director of the Office of Management and Budget Karen Rehfeld said in a Dec. 14 press conference.

If companies began requesting tax credits at a higher or faster rate, Rehfeld said, the Department of Revenue would adjust the requested appropriation as needed.

... but investment to increase.

The Parnell administration expects industry investment in Alaska to rise.

Under ACES, oil companies give the state five-year estimates for planned spending. In his Dec. 10 revenue forecast, Revenue Commissioner Pat Galvin said those plans suggest investment in Alaska would jump from \$4.5 billion in FY 2010 to \$5 billion in FY 2011.

If those figures prove accurate, the administration's decision to fund the exploration tax credit program at FY 2010 levels suggests it believes that current oil produc-

ers will increase spending, while explorers without production will hold spending levels steady (or at least request credits this year at the same level they requested them last year).

State officials consistently point to the exploration tax credit program as proof that the state is balancing greater upfront risk in return for a larger share of industry profits.

Oil companies in Alaska have been divided on whether that balance works.

While larger companies believe the increased tax rate is starting to harm investment in the state, pointing to the fact that several traditional explorers don't have work planned for this year, many smaller companies, particularly those without any production in Alaska, say the exploration credits make Alaska more attractive than other regions.

Citing a "disconnect" between the claims that ACES is oppressive and the projected increases in industry spending, the state is now publicly challenging oil companies that oppose ACES to submit data proving that the tax system is harming investment.

"If they can suggest changes to ACES in a way that creates jobs and opportunities for Alaskans, I'm listening. ... Show me the data," Parnell said on Dec. 14.

Parnell also said that he has already discussed ACES with 10 oil companies. Of those, he said, "four to five" thought the tax system was "just fine," while "two or three" thanked the state for the tax credit program and two companies wanted to see ACES changed.

Asked for some specific examples of company opinions, Parnell said ConocoPhillips and Armstrong Oil and Gas wanted changes, while Renaissance Alaska liked the credits.

He also noted that the state is "paying a significant portion" of Exxon's on-going exploration effort at the Point Thomson unit on the eastern North Slope.

Continued funding for efforts

Although allocation-level information was not available at press time, the proposed budget appears to continue funding several on-going resources-related projects.

The proposed FY 2011 budget sets aside:

see BUDGET page 7



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• ALTERNATIVE ENERGY

Alberta opens nuke door

By GARY PARK
For Petroleum News

The Alberta government is defying an uneasy public by inviting proposals to build nuclear power plants in the province.

Energy Minister Mel Knight, on Dec. 14, issued the results of a telephone poll indicating that 27 percent of Albertans oppose nuclear plants, 19 percent support them and 45 percent were open to considering them on a case-by-case basis.

In addition, Knight released the 177-page findings of consultations with 3,600 participants, 55 percent of whom said they were opposed to nuclear development and only 16 percent were open to a case-by-case review.

Relying on the telephone poll of "regular Albertans," Knight declared the province would consider the controversial energy option, but would not invest government money or submit proposals to a moratorium.

He suggested the absence of subsidies might discourage companies from building plants.

"We are not proponents of nuclear energy," he said. "We need power and proponents that want to build (nuclear plants) in Alberta are welcome to do so."

"A private company would be responsible for development and a private company would assume all risk."

Keeping possibility open

Knight said "keeping our minds open is the way forward when it comes to any energy development in Alberta."

"We are not proponents of nuclear energy. We need power and proponents that want to build (nuclear plants) in Alberta are welcome to do so."

—Alberta Energy Minister Mel Knight

"There are a number of challenges that require us to move from the status quo and, of course, the biggest of those is climate change. We can't afford to close our mind to new possibilities."

He said nuclear energy has the potential in a carbon-constrained world to reduce greenhouse gas emissions," echoing Premier Ed Stelmach who said the nuclear option is "one way of keep down our carbon footprint."

Bruce Power — a partnership of TransCanada, Cameco and BPC Generation Infrastructure Trust which produces 20 percent of Ontario's electricity — once proposed building a C\$6.2 billion plant in the Peace River area of northwestern Alberta, but quickly collided with community resistance and never filed a formal application.

However, Bruce Power Chief Executive Officer Duncan Hawthorne said it was "encouraging to see the door remains open for us to demonstrate we can bring value to the province and help Alberta meet its future energy needs without contributing to greenhouse gas emissions."

A company spokesman said government investment was never part of Bruce Power's thinking.

It is estimated any plant would face three years of environmental assessment and need six years to build. ●

continued from page 6

BUDGET

- \$3.5 million for reservoir studies on the North Slope;
- \$2 million for the Fairbanks Pipeline Training Center;
- \$300,000 for the fourth year of a five-year study of the geologic hazards along the corridor of a proposed natural gas pipeline from Prudhoe Bay to southern markets;

*\$160,000 for Arctic Power, the lobbying group for opening the coastal plain, or 1002 Area, of the Arctic National Wildlife Refuge to resource development; and

*\$125,000 for the third year of a four-year analysis of the "gaps" in state management and oversight of resource development conducted by the Petroleum Systems Integrity Office.

The budget also kicks off several new multiyear programs, including:

- \$500,000 to assess in-state energy potential, the first in a three-year funding proposal and
- \$370,000 for a budget line listed as "Foothills Oil and Gas Development Infrastructure Investigations," which is also the first in a three-year funding proposal.

Increasing natural gas

Asked about his strategy for increasing natural gas supplies for Alaskans, Parnell took an expansive view, saying, "My administration is acting on all options." He said those include a big pipeline from Prudhoe Bay to southern markets, as well as various iterations of an in-state pipeline to deliver some source of northern natural gas to southern cities.

Currently, companies are exploring for

gas in the foothills on the Brooks Range and in the Nenana basin south of Fairbanks. Parnell said the administration wants to be ready for a project before a company discovers natural gas. "If they find something, we will hope to have permits in hand for a company that wants to build a pipeline," Parnell said.

The proposed budget also sets aside \$15 million for the Roads to Resource program, including \$8 million to permit a road to Umiat, \$5 million to resurface more than 100 miles of the Dalton Highway, \$1 million to study a road from Fairbanks to Nome, and \$1 million for general resource-related road projects that arise in the coming year.

The fiscal year begins July 1. ●

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• NATURAL GAS

Noah: standalone line work on schedule

Parks Highway route selected because it is shorter, could cost less; gas conditioning in Cook Inlet, at PBU facilities, considered

By KRISTEN NELSON
Petroleum News

Harry Noah, special manager of the in-state gas pipeline project, told Alaska legislators Dec. 16 that the standalone or bullet line — a project which would deliver gas just within Alaska, not to outside markets — is on schedule to meet what he called a very aggressive schedule to put the package of engineering work and permits out to bid in early 2011. The goal is to find a private party to build the line and have it delivering gas in 2015 or early 2016.

Noah, who has announced his departure, told members of the House Resources Committee and other legislators who participated that he is leaving because of the demands of his family business.

But he admitted to frustration with the process, telling the legislators that there's too much politics in Alaska right now and that commercial parties don't find that attractive.

"If you want commercial entities to make agreements, there's just so far they're going to step into this world of politics," he said.

Routing completed

An alternative routing analysis of the Parks and Richardson highways for that portion of the line south of Fairbanks to Cook Inlet has been completed, he said. The cost of the routes was compared, he said, "and we didn't find a whole lot of difference between the two other than the Richardson Highway route is longer, which equates to just slightly less than \$500 million more cost."

Since the goal was the lowest-cost project, the engineering effort then focused on the Parks Highway.

A permitting-level project description was also completed, major project applications have been prepared and filed and the scoping process for an environmental impact statement has begun.

Other work completed includes review of the capital cost estimates prepared by Enstar Natural Gas Co., compressor station locations set for the permitting process

and a letter sent to the chairman of the Federal Energy Regulatory Commission requesting verification that an in-state gas pipeline would not be regulated by FERC.

Different scenarios

The team looked at four scenarios: 250 million, 500 million, 750 million and 1 billion cubic feet per day.

Associated with the lower flow the team also looked at a 16- to 18-inch pipeline in addition to the base case of a 24-inch line. In addition, Noah said the team looked at the cost difference if a 48-inch line were built to Fairbanks and a 24-inch line beyond that, which amounted to an additional \$6.5 billion, he said, telling legislators that there wasn't a lot of work done on the 48-inch option, but that the intent was to provide a set of numbers which would answer questions which were expected to come up.

Work was also done on a pipeline route to western Alaska with an end point at Donlin Creek.

Point Thomson considered

Rep. Craig Johnson, R-Anchorage, co-chair of House Resources, asked about taking gas from Point Thomson to a pipeline at Pump Station 2 south of the North Slope.

Noah said one focus of the study was reducing gas conditioning costs. Unlike Prudhoe Bay gas, which has some 12 percent CO₂ and hydrogen sulfide, Point Thomson gas has lower CO₂ values and lacks the hydrogen sulfide, reducing conditioning requirements. He said the team looked at a pipeline route from Point Thomson to Pump Station 2 "with the idea that that may be a less expensive pipeline because it's going along the foothills and higher in the watershed so you don't have the length of the river crossings associated with it."

Although a line to Pump Station 2 was considered, Noah said the assumption the project is going with right now is that Point Thomson gas would come across "on the pipeline that's being looked at right now by Exxon" so the standalone project wouldn't be in the middle of ongoing commercial discussions.

Noah said that because a major cost issue is gas con-

ditioning on the North Slope the team looked at whether the standalone project could integrate into North Slope facilities for conditioning, or alternatively, "could we just bring the gas down to Point MacKenzie and condition it there where it would be much cheaper to build a gas conditioning plant than on the North Slope." A smaller plant in Fairbanks would clean up gas for the Interior and put what was taken out of the gas back into the line for shipment to the Cook Inlet plant.

Noah said the standalone team doesn't know right now what the cost would be for a conditioning plant.

Asked by Johnson whether using North Slope facilities had been discussed with the producers, and at what level, Noah said he'd had "sort of hazy" discussions with Exxon about the proposal. "No one said no; ... no one opposed taking a look at it; ... it was just hazy." He said they'd just started to have those conversations at the last commercial working group meeting some weeks ago.

NGL marketability at tidewater

Another issue that came out of the initial work is marketability of natural gas liquids at tidewater in Cook Inlet.

If the transportation tariff is based on the British thermal units of what's transported, "could you reduce the overall tariff by moving more Btus down the line — and that's essentially what Exxon and TransCanada are talking about doing," Noah said, moving as much of the gas liquids as possible "and literally use the methane ... just as a transport vehicle."

He said he has a question of whether, and how much, NGL could be sold at tidewater in Cook Inlet.

To drive the cost down on a standalone line moving North Slope natural gas to Cook Inlet you have two choices, Noah said: "One you increase the volume to the greatest extent possible or two the state subsidizes it."

Rep. Mark Neuman, R-Wasilla, co-chair of House Resources, asked about reducing the cost by shipping a higher-quality product.

Noah said the issue was whether you could market

see NOAH page 13



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continued from page 4

TARIFF HIKE

Volcanic mud flows, called lahars, swept down the river and lapped against the protective dike around the terminal's tank farm. The mud overflowed the terminal's airstrip, and as a safety precaution CIPL transferred oil from some of the storage tanks onto tank ships in a pair of

highly publicized emergency operations.

Once oil production resumed in the summer, CIPL began using a new procedure, pumping oil directly into tankers moored at the terminal's Christy Lee platform without using the terminal storage tanks.

CIPL's defense

Managers for Cook Inlet Energy suspect CIPL has insurance to cover most of the losses it might have sustained.

The higher pipeline tariff presumably will apply to Chevron's own Cook Inlet oil production, even though it is CIPL's parent company.

Petroleum News asked Santana Gonzalez, spokesman for CIPL, which has general offices in Bellaire, Texas, for more details about the damage the CIPL system sustained, and how the company calculated its new tariff.

Gonzalez supplied this written statement:

"CIPL makes a yearly tariff filing at the RCA following the model mandated by the RCA; the new rates reflect a balance of past revenues and expenses, such as CIPL's Redoubt volcanic event response which protected the integrity of the Drift River Terminal as well as the crude stored at the facility, and the expected costs and production rates in the operation going forward."

CIPL's tariff filing says the pipeline had throughput of just under 4 million barrels in 2008, with a 2009 forecast of 1.53 million barrels. ●

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• FINANCE & ECONOMY

On the one hand, on...

Husky, Nexen on opposite sides of cap-ex fence in Canada as analysts count on largest companies sticking close to '09 spending

By GARY PARK
For Petroleum News

As Canada's leading upstream companies start to unveil their 2010 capital spending programs, some appear more inclined to bide their time than others.

Analysts doubt the budgets of major players will do more than match this year's anticipated outlay, although the Canadian Association of Petroleum Producers is projecting a 15 percent increase to C\$40 billion, far short of the peak C\$53 billion in 2006, but that forecast depends heavily on U.S.-based independents such as Apache and Devon Energy opening their wallets.

The pendulum so far has swung in two directions, with Husky Energy raising its 2010 spending to C\$3.1 billion, up 20 percent from 2009, while Nexen has trimmed its plans to C\$2.5 billion, C\$600 million below what FirstEnergy Capital had expected and its lowest level in six years.

"What we've seen as we've prepared our budgets is that right across our industry there's quite a measured approach to ... the pace of investment," said Nexen Chief Executive Officer Marvin Romanow.

"I would say this: some of our partners are very large companies and some are slightly smaller companies than us, but I see this trend in all of them."

FirstEnergy analyst Martin Molyneux noted that Nexen's capital program is based on a price assumption of only US\$50 per barrel for oil, lagging US\$20 behind current levels.

Husky: upbeat thinking

Husky Chief Executive Officer John Lau said his company is "poised to take advantage of the forecast economic cycle and to pursue business growth."

That upbeat thinking includes C\$1.285 billion in Western Canada, an increase of 65 percent over 2009 as Husky concentrates on heavy oil and the oil sands in Alberta, including continued progress on the Sunrise project tentatively set for sanctioning by Husky and its partner BP in 2010 and due on stream in early 2014 at an initial 60,000 bpd, and unconventional gas prospects in British Columbia.

Canada's East Coast offshore, one of Husky's core regions, will see spending taper off to C\$4.85 million from C\$590 million this year as efforts turn to ramping up production from the tie in of the North Amethyst satellite at the White Rose operation.

Southeast Asia will get a lift to C\$660 million from C\$520 million, including six to eight deepwater wells in the South

While confident it has put most of the Long Lake troubles behind it, Nexen must still raise output from the current 17,000 bpd to the designed Phase 1 capacity of 60,000 bpd.

China Sea and development of a new gas discovery.

The overall result could be solid production gains, with guidance for 2010 set at 306,000-330,000 barrels of oil equivalent per day from a forecast 306,000 this year.

Nexen is taking a less adventurous path, targeting output from its global operations — notably Canada, Gulf of Mexico, North Sea and Yemen — in the midpoint range of 225,000 barrels of oil equivalent per day, no more than when it was given its autonomy in 2000 by parent company Occidental Petroleum and nowhere close to the 300,000 boe per day it targeted in 2005.

Long Lake greatest challenge

And the Long Lake oil sands project (35 percent owned by OPTI Canada) is the greatest current challenge facing Nexen as the operation strives to overcome startup problems and apply its patented technology to use the so-called "bottom of the barrel" bitumen to produce synthetic gas to power its upgrader and eliminate the need for natural gas.

While confident it has put most of the Long Lake troubles behind it, Nexen must still raise output from the current 17,000 bpd to the designed Phase 1 capacity of 60,000 bpd.

Until then, along with confidence in a sustained economic recovery and "more clarity on climate change regulations," sanctioning of Phase 2 is unlikely to happen within the next two years, the company said. And with that the Long Lake dream of 360,000 bpd will be a long-range target.

Nexen, which assumed West Texas Intermediate prices will average US\$70 per barrel, has assigned C\$400 million of its capital budget to the oil sands in 2010, including C\$100 million to cover its 7.23 percent stake in the Syncrude Canada consortium.

On a more positive note, it plans to spend C\$200 million at its Horn River shale gas play, advancing technology and aiming to produce 50 million cubic feet per day in early 2011, followed by an 18-well super-pad that should double output and could boost volumes to 200 million cubic feet per day by fall 2011, drawing on reserves of 3-6 trillion cubic feet. ●

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Savant ahead of schedule

Vigil: ACES works for small explorers, producers; hires lobbyist to make sure Alaska legislators aware of independent's position

By KAY CASHMAN
Petroleum News

Savant Alaska is ahead of schedule on the construction of its ice road to the eastern North Slope's Badami unit, where the company plans to finish an oil exploration well it began last winter. The well is in the Denver independent's Red Wolf prospect, which lies in the western part of the shut-in Badami unit.

In a three-week period in November lead contractor CH2M Hill and subcontractor Cruz Construction pre-packed the ice road route, which starts at the eastern end of the North Slope's road system, specifically 10 miles east of Prudhoe Bay, at the edge of the causeway to the Endicott oil field.

The contractors began ice road construction on Dec. 3, and have since been completing about a mile of the 27.5-mile road each day. The ice road should be rig-ready around Jan. 10.

Because the ice road is being built farther inland, away from the Beaufort Sea coastline where last winter Savant had to contend with thin ice, storm surges and rerouting for polar bear dens, drilling in 2010 is expected to begin two months earlier, in mid-January, company executive Greg Vigil told Petroleum News Dec. 16.



GREG VIGIL

All drilling is being done from Badami's single, compact pad, B1, which also holds the unit's production facilities.

The Red Wolf B1-38 well is primarily targeting oil in the Middle Ellesmerian Kekiktuk formation, a deeper and older geologic formation than the Brookian turbidite sands where previous Badami development by BP occurred from six vertical and near-vertical wells.

The redevelopment well will be a sidetrack to BP's existing B1-18 vertical well, utilizing horizontal well construction.

Depending on "observed results" Savant might prepare for a well production test or for a hydraulic fracture treatment at a later date, Vigil said.

ACES working well for Savant

As part of its agreement with BP, Savant is evaluating

see SAVANT page 11



Doyon Rig 15 at Deadhorse on Alaska's North Slope.



Tundra winter road (ice road) near Mile Post 10.

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SAVANT ALASKA

Light plant at entrance ramp to Savant's ice road.

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SAVANT

the re-start of Badami production from the Brookian formation, but its investment decisions are influenced by the state's current production tax regime, commonly referred to as ACES. Rumors that changes in ACES, Alaska's Clear and Equitable Share, will be considered in the 2010 session of the Alaska State Legislature are worrisome, Vigil said. So worrisome that Savant has, for the first time, hired a lobbyist.

"We've engaged David Parish & Associates, just to make sure our presence is known ... to make sure legislators know we are exploring on the North Slope largely because of ACES.

"The state's qualifying capital expenditures and net operating loss credits are paramount to ... our exploration effort in Alaska. ... They are a great incentive for us to continue to explore in the state," Vigil said.

"Certain ACES provisions are very important and serve their purpose well. Adverse changes to those parts of ACES would not be good for small producers and explorers and are of concern to us."

The company's "Badami plant re-start analysis is particularly sensitive to potential ACES changes," he said. "We can't do an economic model that we can trust if legislative changes are in the works. ... The uncertainty increases our risk."

As is, ACES allows smaller producers to have "a severance tax credit if they produce less than 50,000 Btu-equivalent barrels per day — the first \$1 million per month of severance tax liability is exempt if you are a small producer on the North Slope."

Without that relief and the tax credits, Vigil said, "barring the discovery of new reserves (such as at Red Wolf), the financial risk associated with resuming production from the existing reserves at Badami would be too great."

Just 2,600 feet left to drill

This winter's ice road inland route, which roughly follows the Badami pipeline corridor, not only adds time for drilling at the beginning of Savant's program, but also reduces the risk of having to wrap up operations ahead of schedule at the end of the season, which Savant had to do last spring due to unusually warm weather that caused early breakup along the Sagavanirktok River, over which ran Savant's 2008-09 ice road — a road it built and shared with ExxonMobil for that company's Point Thomson operations east of Badami.

As of Dec. 16, Cruz Construction had completed 13 miles of ice road to the Badami pad, where last winter Savant drilled its Red Wolf exploration well to a measured depth of 12,835 feet and set intermediate casing.

"This winter we have approximately 2,600 feet left to drill to test the Kekiktuk" formation, Vigil said.

BP's highly efficient Endicott field produces oil from the Kekiktuk, and Red Wolf is down-trend from BP's Beaufort Sea, 100 million-barrel Liberty project, in the same fault block as Liberty's discovery well.

In a January interview with Petroleum News, Vigil said Savant's "most likely reserve estimate" for the Kekiktuk accumulation was 45 million barrels.

Initially, before it ran into technical production problems with the highly compartmentalized Brookian reservoir, BP hoped to recover 120 million barrels of oil from those sands, which sit about 2,000 feet above the Kekiktuk.

Shale fracturing technology

Operator BP had hopes of producing 30,000 barrels a day from Badami, but while early production ramped up as expected, it soon fizzled, dropping to only about 1,400 barrels a day by 2003 and 900 barrels a day in 2007.

In a 2008 letter, Kevin Banks, director of the State of Alaska's Division of Oil and Gas, said that Savant "is a capable third party based on its experience drilling an Alaskan exploration well (off-shore Kupcake well, near Liberty, in early 2008) and applying new fracturing technology in low permeability shales."

Depending on what it finds at this winter's Brookian sidetrack, Savant is looking at combining horizontal drilling with hydraulic fracturing — pumping large volumes of fluid into the ground to crack the formation — to try to improve the oil flow from Badami's Brookian sands.

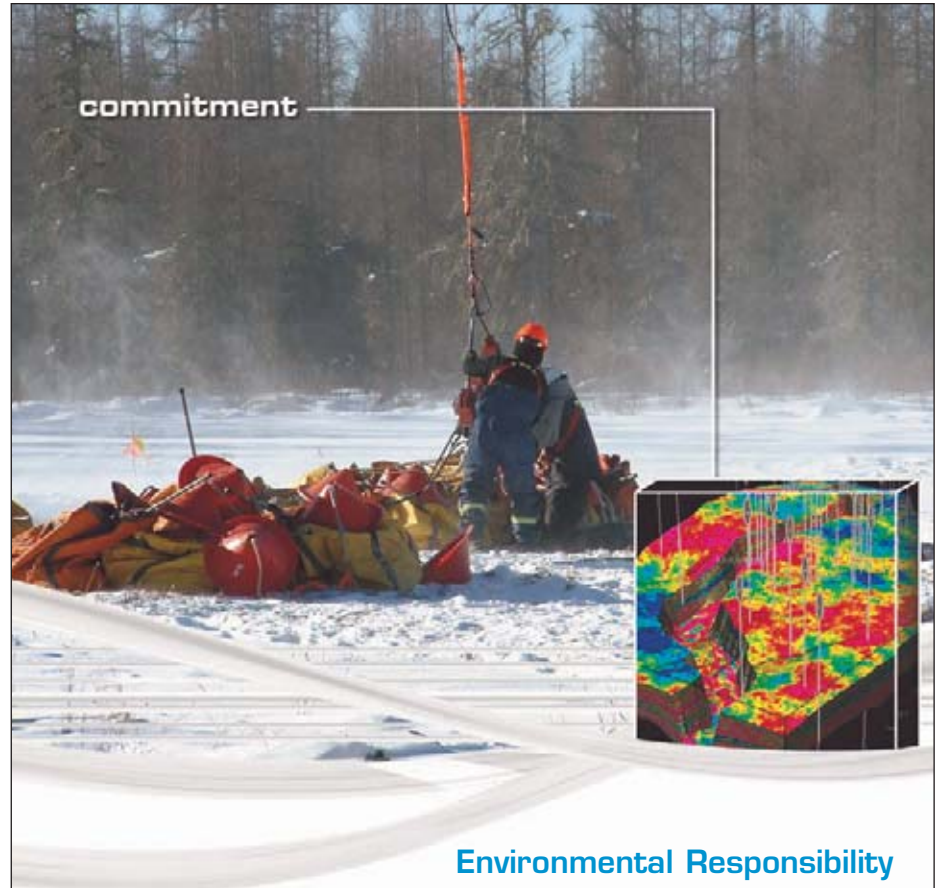
Hydraulic fracturing has been tried before at Badami, but only on traditional vertical wells.

Savant Resources, parent to Savant Alaska, is active in the Bakken shale in North Dakota, the New Albany shale in Kentucky and in the Mancos shale in Colorado.

Last winter Savant used Doyon Rig 16; in 2010 it will be using Doyon Rig 15, which was moved from Kuparuk to Prudhoe on Dec. 13.

Vigil said it will take one day to mobilize the rig from Prudhoe to Badami. ●

Contact Kay Cashman
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• LAND & LEASING

BBNC opposes offshore leasing, Pebble

Native regional corporation says oil and gas leasing, mine development are too risky for fish-rich Bristol Bay; others fire back

By WESLEY LOY
For Petroleum News

A major stakeholder in the Bristol Bay region has come out against offshore oil and gas leasing in the North Aleutian basin.

The Bristol Bay Native Corp. announced Dec. 11 its board passed a resolution opposing the federal government's planned lease sales in the basin, which takes in some of the nation's richest commercial fishing grounds.

A press release said the BBNC board "believes that the risks from offshore drilling to the Bering Sea's living marine resources, and the communities that depend on them, from significant industrial activity and petrochemical spills, far outweigh any potential local or national benefits."

The BBNC board also passed a resolution opposing Pebble, a hugely controversial copper and gold mine proposed in the distant headwaters of two important Bristol Bay salmon rivers.

'Way of life'

BBNC is one of 13 regional corporations formed under the Alaska Native Claims Settlement Act of 1971. It represents more than 8,500 Eskimo, Aleut and Athabascan shareholders and has extensive land holdings in southwestern Alaska.

Corporation businesses include fueling, construction, environmental engineering and remediation, and government contracting. Its CCI subsidiary provides a range of services in the North Slope oil fields including asbestos abatement and oil spill response.

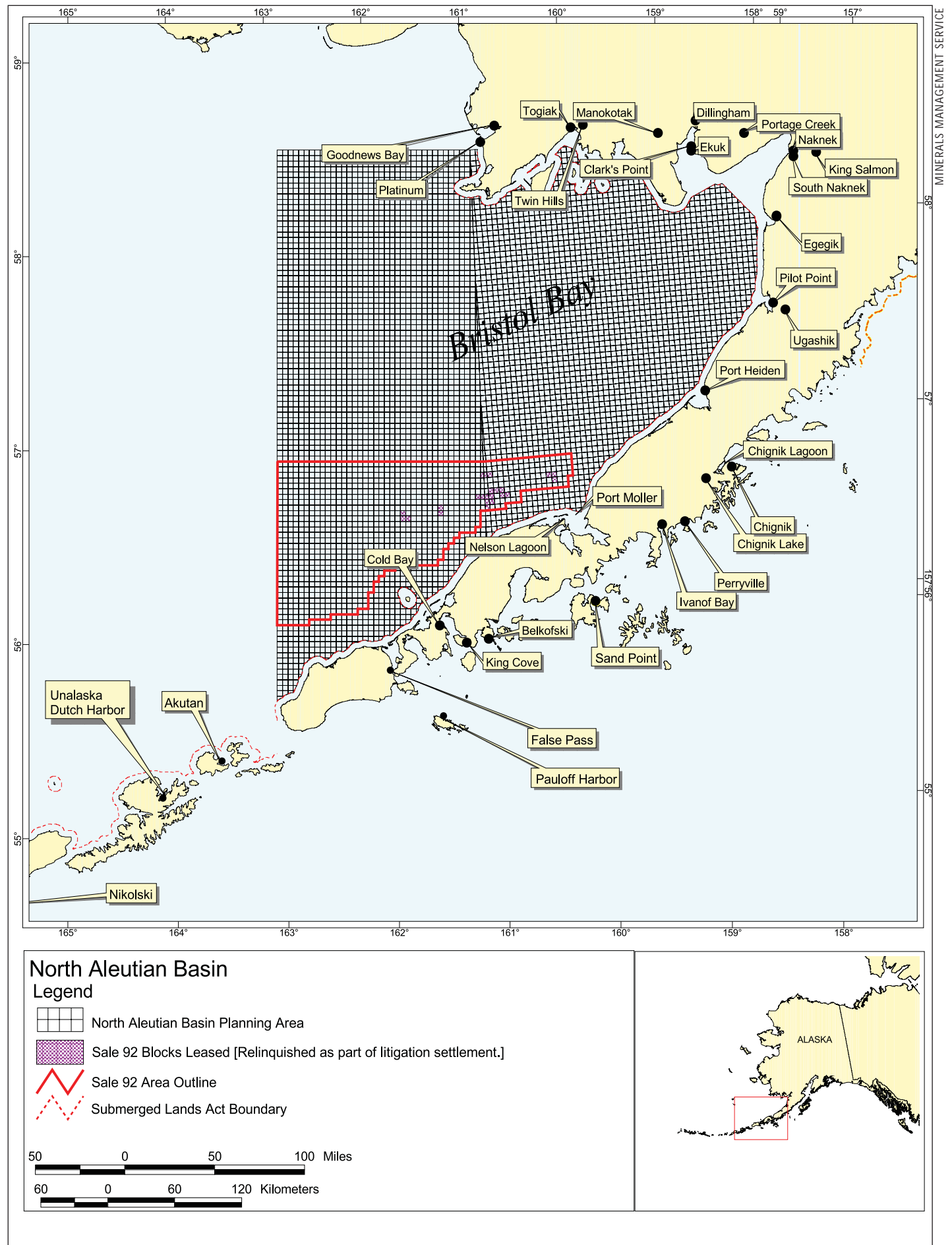
The U.S. Minerals Management Service is proposing two lease sales in the North Aleutian basin, one in 2011 and another in 2014. The agency is now preparing an environmental impact statement for the first sale.

The basin is considered a much better prospect for natural gas than for oil. One company, Shell, has expressed strong interest, going so far as to lay out a plan for producing liquefied natural gas from the region.

The BBNC board, however, doesn't favor leasing in the basin.

"The corporation encourages the

see BBNC page 13



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continued from page 8

NOAH

NGLs at a good profit from Cook Inlet. “The reason that it made sense to take those NGLs to Calgary is there’s an existing infrastructure” to handle the gas liquids.

The project schedule calls for moving gas in 2015 or 2016, Noah said, calling it a “very aggressive schedule.”

That requires completing the basic cost of transport estimate in the early summer of 2010.

He said he suggested another \$6.5 million, a lot of that for field work, for this year’s budget, and said the lead federal agency has come up with a program that will allow completion of initial permitting by February 2011. That would allow the project to be put up for bid, a process which would be complete in April 2011. “To do that the intent was to start the process in the fourth quarter of 2010 to find that company,” Noah said.

Policy decisions

Asked by Rep. Les Gara, D-Anchorage, whether the big pipeline wouldn’t provide cheaper gas than an in-state line, Noah said “absolutely” the gas from a big line would be cheaper.

Fairbanks has the more immediate need for gas, Gara said, while Anchorage is looking for a next generation supply, and he said he was concerned that a pipeline project that gets needed gas to Fairbanks now, reducing their cost of energy, could end up costing Anchorage more for gas than what it pays now. Is there an economic way to get natural gas to Fairbanks without saddling Anchorage with gas that might be more expensive than what Anchorage could get elsewhere? Gara asked.

Those questions “are at the heart of the policy decisions that have to be made,” Noah said.

“There is no question if the big line were coming along in a timely manner I’d

say stop all this,” he said, because as long as the state can get “a reasonable amount of gas out of the big line, then that’s a slam dunk, no question about that.”

Noah said the problem is that there’s no way to define what the schedule is for the big line. If you work on these projects for 20 years “you see the circle go around and around and the enthusiasm build up and the ... engineering work gets done and then, oh my goodness ... it’s not going to work. And it goes around and around on the big line.”

A project we can control

The intent of the standalone program is to identify “the cost of doing a project that we can control,” Noah said.

The only way Fairbanks gets a reasonable cost of gas is if a pipeline is going by, he said, because the market isn’t big enough.

He said he can’t think of a reason the State of Alaska doesn’t want to encourage a big pipeline.

“But the question is when do we say we’ve got to take care of ourselves. And if you make the assumption that the gas is going to be more expensive in Cook Inlet because the big line is coming along, then you have to have the underlying assumption that the big line is coming.”

Noah said he didn’t know whether it is true that it’s only a matter of time until the big line comes along.

But would an in-state gas line provide gas for less than a big line, something Gara said many Alaskans believe.

Noah said that for gas to work for the Nikiski LNG plant or for Agrium, “we’re going to have to get gas here for something around Nymex or just slightly less.”

But the North Slope producers are also going to have to make as much or more on gas sold in-state as they would make on gas going to the Lower 48, Noah said.

“It has to be a commercial deal or they’re not going to do it.” ●

Contact Kristen Nelson
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continued from page 12

BBNC

restoration of measures to protect Bristol Bay and the southeastern Bering Sea from offshore oil and gas development. BBNC plans to be a staunch advocate on behalf of its shareholders and their way of life as this issue becomes more imminent,” said Joseph Chythlook, board chairman.

While BBNC is not alone in opposing offshore leasing, other organizations such as the Aleutians East Borough and the industrial fishing town of Unalaska have expressed support.

A 1986 sale resulted in issuance of 23 leases in the basin, but the government later bought the leases back in the wake of the Exxon Valdez oil spill.

Pebble opposition, backlash

The BBNC board also passed a resolution opposing Pebble, the massive mine project partners Anglo American and Northern Dynasty Minerals are advancing toward the permitting stage. The mine site is northeast of Bristol Bay, near Iliamna Lake.

The resolution was a departure from the neutral stance the corporation took in 2006. A BBNC press release cited “unquantifiable impacts the project could have on the natural resources of the Bristol Bay region.”

“Maintaining a neutral stance on the Pebble Mine project is no longer in the best interest of the corporation or to the values of cultural and economic sustain-

ability to which we hold ourselves,” Chythlook said.

The BBNC resolution drew fire from two Native village corporations with land near the Pebble prospect.

“Bristol Bay Native Corporation’s unilateral decision to oppose the Pebble Project is a declaration of economic warfare on our shareholders, our villages and our future,” said a press release from the Alaska Peninsula Corp., which has extensive land holdings at Iliamna Lake and includes the villages of Newhalen, Kokhanok, South Naknek, Ugashik and Port Heiden.

Alaska Peninsula President Ralph Angasan said in part: “BBNC has not developed, or sought to develop, economic opportunities in our villages, and has now threatened to extinguish our ability to survive and provide real opportunities for our people. We are committed to the wise development of the resources and to creating real economic opportunities for our shareholders, who are also shareholders of Bristol Bay Native Corporation. There is no mine, and there may never be a mine. But BBNC’s decision to oppose, rather than to weigh the evidence, before the permitting process has even begun, condemns our people to poverty.”

Pedro Bay Corp., which holds land linking Pebble to Cook Inlet and is neutral on the mine pending the outcome of the permitting process, also denounced BBNC’s resolution. Pedro Bay Chairman John Allen Adcox said the resolution is based on an “irrational and unsubstantiated fear of the future.” ●

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• NATURAL GAS

What chance now for North Slope LNG?

World market is growing fast but North Slope gas would need to compete on cost with massive new supplies close to tidewater

By ALAN BAILEY
Petroleum News

Few subjects raise the temperature more in a room full of Alaskans on a cold winter night than the perennial debate about exporting North Slope gas in a pipeline through Canada versus exporting the gas as LNG from an Alaska port using an all-Alaska pipeline that generates income within the state.

But what are the realities of exporting North Slope gas as LNG?

The idea of converting the gas to LNG for export goes right back to the discovery of Prudhoe Bay and its massive gas cap, Bradford Keithley, a partner with Perkins Coie LLP, told the Law Seminars International Energy in Alaska conference on Dec. 8. In fact, following field discovery, the oil companies sought ways of exporting natural gas as well as oil from the field, he said.

LNG for California

And, having discounted the possibility of shipping LNG direct from the Slope, given the lack of suitable ice-breaking LNG carriers, one of the first natural gas

So, with the Port Authority still waiting in the wings, the possibility of eventually exporting North Slope gas through Valdez as LNG is still out there, a focus for those who see a gas line to Valdez as a vehicle to enable Alaskans to control the destiny of where Alaska gas is marketed.

export concepts to emerge was the idea of building a gas line to Valdez, roughly along the route of the trans-Alaska oil pipeline. LNG produced at the Valdez terminus of the line would be shipped to an LNG terminal that would be constructed in California.

"That proposal, frankly, hung around for a long time, and was a fairly well-researched and fairly well-thought-through proposal," Keithley said.

But there were some issues with the project economics and problems with obtaining permission to build the California LNG terminal.

Then, after Congress passed the Alaska Natural Gas Transportation Act in

1976, President Carter ordered that North Slope gas be exported overland through Canada, in preference to using the LNG option, thus putting North Slope LNG out of the running for several years.

TAGS

But around 1984 a gas production boom in the Lower 48 killed the need for Alaska gas and put the overland pipeline concept out of play. The idea of exporting LNG through Valdez came back into the spotlight, this time in the form of the Trans-Alaska Gas System, or TAGS, championed by Walter Hickel, sometime Alaska governor.

"The TAGS project had legs," Keithley said. "The proponents of it spent a considerable amount of money obtaining permits ... spent a lot of time over on the Pacific Rim trying to market LNG to the Japanese and the Koreans."

But TAGS eventually ran aground on two fundamental sandbars: the cost of bringing gas from the North Slope to Valdez and the economic impact of bringing large volumes of North Slope gas into what was then quite a small LNG market, Keithley explained. And in addition to transportation costs, North Slope gas would require the removal of carbon dioxide in an expensive treatment plant before it could be converted to LNG, he said.

"In order to cover that cost and make the LNG economic, you have to have big volumes," Keithley said. "Well the problem that TAGS kept running into was that they had too big a volume. ... It would swamp the market with too much LNG and drive the price down to the point where the project became uneconomic."

In the late 1990s, by which time the TAGS project had ground to a halt, the North Slope producers, led by ARCO, investigated the TAGS concept, seeking ways to drive down costs but ultimately reaching the same conclusion that others had found: There would be too much LNG chasing a small market at high cost.

"And so the producers sort of bundled up what they had around LNG in the late 1990s and sort of put it on the shelf some

place," Keithley said.

The Port Authority

But, at around the same time, the North Slope Borough, Fairbanks North Star Borough and City of Valdez formed the Alaska Gasline Port Authority, with the objective of pursuing the TAGS concept, but reducing the project costs through the use of tax exempt municipal bonds for project funding. The proposed pipeline would create a new tax base and jobs in its municipalities, the Port Authority hoped.

The Port Authority, with various partners at various times, has continued its efforts to promote its project, right up to the present day.

"That effort is continuing today and is now showing up in the form of the (gubernatorial) campaign of the general counsel, executive director of the Alaska Gas line Port Authority, Bill Walker," Keithley said.

And the world LNG market has changed dramatically in the past five to 10 years, with climate change and ocean acidification concerns driving China, for example, to try to move away from coal-fired power stations and instead use natural gas. New LNG terminals are coming into operation for the import of LNG on the Pacific Rim.

But, although this surge in Pacific Rim LNG demand has effectively removed the issue of Alaska LNG swamping world LNG markets, the surge in demand has been accompanied by a corresponding surge in LNG supplies from places such as Qatar, Russia and Australia. And major gas producers like Qatar enjoy the benefit of huge natural gas resources, close to tidewater and without the same level of carbon dioxide content as North Slope gas.

"So the big issue that's going to be driving LNG going forward is the distance from tidewater and the ability to bring down costs," Keithley said.

North Slope gas line


And the pendulum of interest in Alaska North Slope gas has swung back in recent years to the inland pipeline route through Canada, with TransCanada's North Slope gas line project under AGIA, and the competing BP and ConocoPhillips' Denali pipeline project.

But under the terms of AGIA, TransCanada must offer an option to deliver gas to Valdez for export as LNG through an offshoot from the main gas line. And if during the upcoming gas line open season TransCanada and its partner ExxonMobil accept bids for the delivery of gas to Valdez for LNG production, TransCanada would do some engineering work for the LNG option, Keithley said.

Denali has talked about an LNG option but has made no formal announcement on the topic, he said.

So, with the Port Authority still waiting in the wings, the possibility of eventually exporting North Slope gas through Valdez as LNG is still out there, a focus for those who see a gas line to Valdez as a vehicle to enable Alaskans to control the destiny of where Alaska gas is marketed. ●

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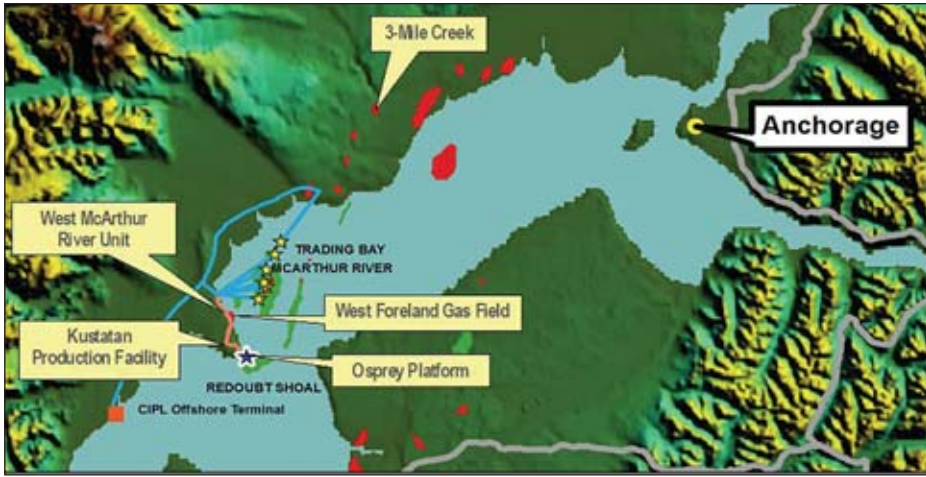


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The Osprey Platform

continued from page 1

COOK INLET ENERGY

said David Hall, chief executive of Cook Inlet Energy and formerly vice president in charge of Alaska operations for Pacific Energy.

“Our initial strategy will be to restore base production at the West McArthur River field by repairing a couple of our champion wells,” Hall said, “but our long-term strategy is to significantly raise oil and gas production at the properties through new drilling. This will allow us to bring proven reserves to market and prove up new additional reserves through sound geological principles and advanced drilling.”



JR WILCOX

The properties

The asset package includes the West McArthur River unit, the West Foreland natural gas field, the Redoubt unit and its shuttered Osprey offshore platform, the Kustatan onshore production facility, a 30 percent stake in the Three Mile Creek field operated by Aurora Gas, and more than 600,000 acres of exploration lands. The Sabre and Valkyrie exploration prospects also were included.

All are arrayed along the rugged west side of Cook Inlet.

Cook Inlet Energy managers said independent auditors in March of 2008 valued the purchased reserves at \$327 million.

Company President JR Wilcox, also a former Pacific Energy employee, said “2009 was probably the hardest year imaginable to pull something like this together, given the state of the financial markets.”

“But we’ve received tremendous support and encouragement from a lot of people. We’ve been working closely with the Department of Natural Resources since June in an effort to ensure as smooth a transition as possible, and really appreciate their efforts to help us get people back to work.”

Alan Dennis, of DNR’s Division of Oil and Gas, told Petroleum News that Cook Inlet Energy has met all requirements as an operator.

Production goals

From a production standpoint, Cook Inlet Energy and its parent, Miller, will be starting almost from zero with their newly acquired properties.

“Initial production is estimated to be 280 barrels of oil a day,” said Scott Boruff, Miller’s chief executive. The goal is to push production to more than 1,100 barrels daily by the fourth quarter of 2010, he said.

The Cook Inlet Energy managers said the recent small output from the properties was largely due to lack of available capital.

Production from the West McArthur River unit, which Stewart Petroleum developed in 1991, peaked at 4,950 barrels of oil per day, but had declined to less than 250

barrels at the time it was abandoned in September, the managers said.

Redoubt production via the Osprey platform, which Forcenergy and Forest Oil installed early this decade, peaked at 4,850 barrels per day, but had fallen to 20 barrels, they said.

Miller’s role

Miller, based in Huntsville, Tenn., focuses on the Appalachian basin and bills itself as the largest owner-operator of oil and gas wells in Tennessee. The company also is known as Miller Petroleum Inc. Its stock price is quoted on the OTC

Bulletin Board. By mid-afternoon on Dec. 17, the day after Miller announced the close of the Alaska deal, its shares had spiked by more than 30 percent to \$1.27.

Miller said it paid \$2.25 million for the Cook Inlet properties, plus an additional \$2.2 million to cure contract obligations and cover bonding and other requirements for operating the assets, which sit on state and Native lands.

“Miller raised the money that we used to do the deal,” Wilcox, the Cook Inlet

Energy president, told Petroleum News. “They’ve been working closely with an investment firm named Vulcan Capital Management, which is a New York firm not to be confused with Paul Allen’s Vulcan Capital based in Seattle. Vulcan’s done a lot of very large natural resources projects, so they’ve been a good fit.” ●

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• FINANCE & ECONOMY

EIA expects \$76 per barrel this winter

Henry Hub natural gas spot price projected at \$3.95 per thousand cubic feet this year, \$4.62 in 2010; US natural gas consumption down

PETROLEUM NEWS

The U.S. Energy Information Administration said Dec. 8 in its Short-Term Energy Outlook that it expects the price of West Texas Intermediate crude oil to average \$76 from October through March, with a dip to \$75 early next year and a rise to \$82 per barrel by December 2010, "assuming U.S. and world economic conditions continue to improve."

The EIA forecast assumes growth in U.S. real gross domestic product of 1.9 percent in 2010 and a world oil-consumption-weighted real GDP growth of 2.6 percent.

The agency said it expects the annual average Henry Hub natural gas spot price to be \$4.62 per thousand cubic feet next year, a 67-cent-per-thousand-cubic-foot increase from an estimated 2009 price of \$3.95.

Working inventories of natural gas in the U.S. reached a record-high level of 3.837 trillion cubic feet on Nov. 27, the agency said, as mild weather throughout much of the country contributed to uncommon levels of storage increase for the month.

The Organization of Petroleum Exporting Countries began production cuts in January 2009, and EIA said that

"Shorter completion times and enhanced well productivity in shale basins contributed to sustained higher production levels amidst a dramatically lower rig count in 2009."

—Energy Information Administration November short-term outlook

while compliance with the cuts has weakened and global oil inventories are "very high by historical standards," the November WTI oil price averaged \$78, continuing a generally upward price trend which began last February.

Consumption expected to grow

EIA said it is forecasting a growth in world oil consumption next year to 85.2 million barrels per day, an increase of 1.1 million bpd over 2009 consumption, with countries outside the Organization for Economic Cooperation and Development likely to account for almost all of the growth. Projected OECD oil consumption growth is only 100,000 bpd next year, although U.S. growth is projected at 270,000 bpd after a very weak 2009.

Non-OPEC oil production is expected to average 50.3 million bpd this year, up some 600,000 bpd from 2008, with

increases largely the result of higher production from the U.S., Brazil and the Former Soviet Union.

OPEC crude oil production is expected to average 29.1 million bpd this year, down more than 2 million bpd from 2008. EIA is projecting OPEC crude oil production to increase to an average of 29.6 million bpd next year in response to anticipated rebound in global oil demand.

\$78 per barrel November average

WTI crude oil spot prices averaged \$78 per barrel in November, EIA said, up more than \$2 from the October average, reflecting improved expectations of global economic recovery and higher oil consumption offsetting concerns about the level of oil inventories.

EIA said it was forecasting weaker WTI spot oil prices over the next few months, falling to \$75 in February, and rising to about \$82 by the end of 2010. Crude oil prices were less volatile in November than in October, the agency said, with the WTI spot price trading within a \$5-per-barrel range, roughly \$75 and \$80 per barrel, contrasting with October when the WTI spot price traded in an \$11-per-barrel range, between \$70 and \$81 a barrel.

The December average price is likely to be lower, with The Associated Press reporting in mid-December that prices had slid below \$69 a barrel due to signals from OPEC that it would not lower production at its scheduled Dec. 22 meeting.

Natural gas consumption down

EIA said it expects U.S. natural gas consumption to decrease by 1.9 percent in 2009 and by an additional 0.4 percent next year. The agency said a steep decline in industrial demand and smaller but still significant residential and commercial declines have been partially offset by electric power consumption this year.

"Low natural gas prices relative to coal caused substantial switching to natural gas for baseload electric power generation throughout most of 2009," EIA said.

A return to normal weather and expectations for economic growth are expected to drive natural gas consumption increases in the residential, commercial and industrial sectors next year, but the agency said it still expects total consumption to fall "as higher natural gas prices contribute to some reversal of the coal-to-natural-gas switching that took place in the electric power sector during 2009."

Gas production up, down

EIA said it expects U.S. marketed natural gas production to increase by 3.7 percent this year and to decline by 3.1 percent in 2010.

"Minimal hurricane disruptions and

significant growth in production from onshore shale basins have contributed to the increase in domestic supply this year, despite a nearly 60 percent decline in the working natural gas rig count from September 2008 to July 2009," the agency said.

Marketed production in the Lower 48, including the non-federal Gulf of Mexico, has declined since a peak in February, but EIA said "the recent dip in September production appears to be the result of shut-ins, maintenance and pipeline constraints, as opposed to declining field productivity," and expects October and November production volumes to recover from the September dip.

"Shorter completion times and enhanced well productivity in shale basins contributed to sustained higher production levels amidst a dramatically lower rig count in 2009," the agency said.

Natural gas imports by pipeline averaged some 9 billion cubic feet a day in the first nine months of the year, compared to 9.9 bcf in the same period of 2008, with lower drilling activity and production in Canada contributing to reduced pipeline imports this year. EIA said it expects pipeline imports will fall by 12 percent for the year, with persistent low rig counts in Canada expected to lead to lower Canadian natural gas production and lower U.S. pipeline imports next year.

Liquefied natural gas imports into the U.S. increased this year, averaging some 1.3 bcf per day through September compared to almost 1 bcf per day in the same period in 2008.

"Imports rose, albeit from very low levels in 2008, as new global liquefaction capacity added to supply while global LNG demand suffered under the economic crisis," the agency said. It is projecting U.S. LNG imports to increase to 1.7 bcf a day next year with expected completion of additional global LNG projects, but said the "start-up dates for supply additions have historically been subject to delay."

Record gas storage

The Nov. 27 volume of 3.837 tcf of working gas in storage was 487 bcf above the 2004-08 five-year average and 470 bcf above the level in the same week in 2008, EIA said.

If storage withdrawal between the end of November and the end of March is 6.1 percent greater than the previous five-year average, the end-of-winter, March 31, stocks will be some 1.845 tcf, the highest end-of-winter storage level since 1991, when inventories measured 1.912 tcf.

The average Henry Hub spot price of \$3.77 per thousand cubic feet in November was 35 cents lower than the October average spot price, with prices depressed by warmer-than-normal November weather which reduced residential and commercial space-heating consumption by some 7 percent.

While EIA expects prices to increase as space-heating demands increase over the winter, "strong domestic production, a retrenchment of electric-power-sector natural gas demand and uncertainty about the extent of recovery in the industrial sector, should limit sustained upward price movements through the winter and well into next year."

EIA is projecting the Henry Hub spot price to average \$3.95 per thousand cubic feet this year and \$4.62 in 2010. ●

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Groups sue to stop Beaufort Sea drilling

By DAN JOLING

Associated Press Writer

A group that helps manage Eskimo whaling in Alaska has sued to halt petroleum drilling proposed next year in the Beaufort Sea by a subsidiary of Shell Oil.

The Alaska Eskimo Whaling Commission and the Inupiat Community of the Arctic Slope, a federally recognized tribal government representing Alaska North Slope communities, asked the 9th U.S. Circuit Court of Appeals Dec. 15 to overturn a drilling plan approved in October by the Minerals Management Service.

The lawsuit, filed in San Francisco, says MMS failed to consider the cumulative effects on bowhead whales of plans by Shell Gulf of Mexico Inc. to drill in the Chukchi Sea off Alaska's northwest coast and the Beaufort Sea off the northern coast.

"Shell wants to drill wells and drive its fleet of vessels straight through the bowhead whale migration," said George Edwardson, president of ICAS, in a prepared statement. "What happens if there is a major oil spill? We have an obligation to protect our people."

Harry Brower, chairman of the whaling commission, said he understands that people want oil and gas.

"But the government and the offshore operators need to understand that development has to be done in a way that does not threaten our subsistence livelihood and culture," he said. "We depend on the bowhead whale for food."

The commission represents 11 coastal subsistence whaling villages and co-manages the bowhead whale subsistence hunt under a cooperative agreement with the federal government.

MMS spokesman Nicholas Pardi said the agency had not seen the lawsuit and could not comment.

Shell Alaska spokesman Curtis Smith said MMS was thorough in its technical and environmental evaluation.

"Shell has demonstrated its ability to operate in the Arctic in an environmentally responsible manner," he said in an e-mail. "We fully expect MMS to be successful in defending its approval."

He said Shell has gone to great lengths to minimize the impact of its drilling program, including a voluntary shutdown during the fall subsistence whaling harvest by the villages of Nuiqsut and Kaktovik, installing best available discharge technology and reducing the number of wells.

"These steps were taken after considering direct feedback from North Slope

The lawsuit, filed in San Francisco, says MMS failed to consider the cumulative effects on bowhead whales of plans by Shell Gulf of Mexico Inc. to drill in the Chukchi Sea off Alaska's northwest coast and the Beaufort Sea off the northern coast.

stakeholders," he said.

MMS in October approved Shell's Beaufort plan for two wells. The agency last week conditionally approved a Shell drilling plan for up to three exploratory wells in the Chukchi Sea. For both projects, Shell proposes exploratory drilling in open water using a 500-foot drill ship, an ice management vessel, an ice class anchor handling vessel and oil spill response vessels.

Shell's Beaufort offshore drilling has been challenged before.

In 2007, MMS approved Shell's drilling program, but the 9th Circuit stopped it, ruling that MMS failed to disclose potential impacts to the bowhead whale and subsistence communities. Shell eventually withdrew the plan.

Shell's new plan received a cursory environmental assessment, according to the groups.

Brower said Shell agreed to hunters' requests for a halt in operations during the bowhead whale subsistence hunt by Nuiqsut and Kaktovik.

"Even though this proposal has some protection for our hunting, it would allow Shell to dump thousands of barrels of drilling muds, cuttings, and other waste into Camden Bay, including cooling water full of biocides. Our whales feed and rest in Camden Bay, and care for their young there. We are very concerned that these discharges will harm the whales."

Edwardson said the project has gotten worse since 2007.

The groups are represented by Chris Winter of Crag Law Center in Portland, Ore. ●

NSB not part of suits against MMS

The North Slope Borough said Dec. 15 that it has opted to continue to work with Shell and agencies on the company's Beaufort Sea exploration plan, and will not join lawsuits filed in the wake of federal approval of Shell's 2010 plan.

"This is the first time that the Minerals Management Service has required a shutdown of drilling activities during our fall hunt of the bowhead whale," NSB Mayor Edward Itta said in a statement. "The certainty of this protection is a positive stop. The whalers in Barrow, Nuiqsut and Kaktovik can rest assured that their fall hunt will not be interrupted by Shell's industrial noise."

The borough said the scope of exploration conditionally approved by MMS in October was significantly scaled back from the company's originally plan and Itta said he gives Shell "credit for responding to some of our concerns."

But Itta said a number of permits and issues remain — noise, air and water pollution issues and whalers' concerns about cow-calf pairs diverted from Camden Bay feeding due to industrial noise.

"We expect a huge company like Shell to clear the bar with room to spare," Itta said. "We need them to provide robust protections, not just minimums. That's why we continue to engage with them and the agencies. I think we're making progress. I'd rather work it out this way if we can."

Call for more safeguards

Itta also called on state and federal governments to upgrade safeguards in the Arctic.

"Why should North Slope residents expect anything less than the protections afforded other Alaska residents," he asked.

He said the U.S. Coast Guard has a very limited presence in the Arctic, while it provides ample coverage in Southeast, the Gulf of Alaska and Southwest Alaska.

Itta also said the Arctic needs state-licensed marine pilots on certain vessels, as is required in other Alaska waters.

The Science Advisory Committee at the University of Alaska Fairbanks will meet in January to advise Itta on recommendations for reducing industrial discharge into the water. The borough said Shell has agreed to accept the committee's recommendations as its guidelines for discharge.

"Ocean discharge is a real bone of contention for us, and Shell's decision to live by the SAC's recommendations is an important step," Itta said. "I believe we can ultimately get to a plan that works for industry and satisfied our deepest concerns."

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EXPLORATION & PRODUCTION

DNR opens travel in western coastal area

On Dec. 17 the Alaska Department of Natural Resources opened the western coastal area of state land on the North Slope for off-road tundra travel, for vehicles with off-road travel permits. Conditions in the area have met the tundra travel criteria of at least six inches of snow and soil temperatures of minus 5 degrees C or less at a depth of 30 centimeters.

The eastern coastal area and the upper and lower Brooks Range foothills remain closed for off-road travel. Soil temperatures at all coastal monitoring stations have dropped below the tundra travel threshold, but snow cover is still too thin at one station in the eastern area. Snow depths have reached the required levels at several foothills stations, but snow is still too thin in some places. Soil temperatures in the foothills remain too high for off-road travel in some areas, especially in the upper foothills.

And DNR warned that, although snow cover in the western coastal area is good, it may be thin in some places — operators should avoid these locations or use special construction methods to protect the tundra surface, DNR said. Alaska's Division of Mining, Land and Water stipulates the required frost and snow conditions for driving across the tundra.

—ALAN BAILEY

NATURAL GAS

Fire damages FNG Port Mackenzie plant

A fire ripped through a maintenance shop adjacent the Fairbanks Natural Gas LNG plant at Port MacKenzie, north of Anchorage, early in the morning of Dec. 17. The cause of the fire has yet to be determined, Dan Britton, president of Fairbanks Natural Gas, told Petroleum News. And the LNG plant, used to liquefy Cook Inlet natural gas for trucking to Fairbanks, was not impacted.

All natural gas used in Fairbanks passes through the Port MacKenzie facility.

At the time that Britton spoke to Petroleum News FNG was still working with the fire marshal, to determine when the Port MacKenzie plant could go back into operation. But Britton did not anticipate any interruption in gas supplies for Fairbanks gas consumers.

"We maintain in excess of five days of supply here in Fairbanks at any given time and we actually have about seven days (supply) right now, based on current inventories and weather," Britton said. "... We'll be working to get the plant re-started as soon as possible."

In addition to maintaining reserve supplies of LNG in Fairbanks, FNG has contingency plans to bring in LNG from some facilities in the Lower 48, were an incident resulting in extended outage at Port MacKenzie to occur, Britton said.

Explosions reported at the Port MacKenzie facility during the fire incident are likely related to drums of oil located in the maintenance shop prior to dispatch to a recycling company, Britton said.

—ALAN BAILEY

continued from page 1

NEW LIFE

"We could reach our potential if we could join an organization to bring scale and financial capacity to what we were doing," he said.

And that, coming from a company with 45 trillion cubic feet of resources and expected production this year of 2.87 billion cubic feet per day, was a clear expression of the challenges confronting shale independents.

Risks even for Exxon

ExxonMobil Chief Executive Officer Rex Tillerson made no attempt to hide the risks even his company faces in absorbing XTO, its biggest transaction since the \$81 billion merger of Exxon and Mobil 10 years ago.

"We'll probably suffer in the near-term as we put it together," he said. "This is really about value creation over the next many years. This is not a near-term decision. This is about the next 10, 20, 30 years."

That strengthens ExxonMobil's own view that fossil fuels will remain a critical part of North America's energy supply for many years. The company estimates that by 2030, worldwide, wind, solar and bio-fuels will grow sharply, but still only account for some 2.5 percent of total energy, no matter what measures are taken to lower greenhouse gas emissions.

What the company believes is that gas consumption, which emits half as much carbon dioxide as coal when burned, will grow faster than oil or coal over the next two decades and that investment is needed in such energy sources as wind, solar and biofuels.

"There will be an expansion of natural gas supply, particularly in the U.S. where unconventional gas supplies are expected to satisfy more than 50 percent of gas demand by 2030," said ExxonMobil's "Outlook for Energy: A View to 2030."

Tillerson said the report sees many hopeful trends — "economic recovery and growth, improved living standards and a reduction in poverty and promising new energy technology."

Major shale investments

Larry Nicols, chairman of Devon Energy and chairman of the American Petroleum Institute, endorses Tillerson's gas forecast by insisting that the U.S., no matter what legislation the U.S. Congress passes to regulate carbon, will "need a growing amount of electricity and natural gas is in an excellent position to capture a significant amount of that market."

It's technology that has brought shale gas from the shadows over the past

decade, and now needs the control levers to be passed from a handful of smaller companies that staked their claims almost unnoticed in Texas, Louisiana, Arkansas, Oklahoma, Pennsylvania, New York, Quebec and British Columbia to those who have a pile of unused cash to commercialize the resource.

The moves in that direction have been under way over the past year as European-based companies BP, Royal Dutch Shell, StatoilHydro and Eni along with Chevron have invested billions in shale assets and answer the call by their shareholders to increase reserves and production.

They also represent an indirect boost for the future of stranded Arctic gas deposits in Alaska and Canada's Northwest Territories — where development is effectively in the hands of ExxonMobil and its controlling share of Imperial Oil.

Analysts at Tudor, Pickering, Holt & Co. in Houston said in a report the ExxonMobil-XTO deal could signal a major consolidation trend by majors who "tend to be lemmings around trends like JVs-consolidation."

UBS Securities said the "major's limited access to resources, coupled with the plethora of low-cost U.S. shale plays, has prompted several to recently invest in U.S. unconventional resources," but not anywhere near the scale of the XTO deal.

Oppenheimer & Co. analyst Fadel Gheit was emphatic there will be more deals, making the industry "more resilient to volatility in natural gas prices."

Analyst: Time to buy

Wells Fargo Securities analyst Dave Tameron said in a report that if "ever there was a time to buy U.S. natural gas, it would be now, while fundamentals are weak and reflected as such in share prices."

That was despite the implied per-share price offered by ExxonMobil of \$51.69, a premium of 25 percent on XTO's closing price on the previous day's trading, which Calgary-based investment dealer Peters & Co. estimates at a staggering \$88,611 per flowing barrel of oil equivalent or \$2.88 per thousand cubic feet of reserves, excluding the development cost.

FirstEnergy Capital analyst Martin Molyneaux told the Calgary Herald that ExxonMobil's record of pursuing targets that offer "pretty robust rates of return" is evidence that the supermajor thinks "gas prices are going to go higher and there's a lot of running room in bookable reserves."

He suggested XTO's skills in unlocking shale resources will likely be deployed in northern British Columbia, where ExxonMobil and Imperial are joint-venture partners in the Horn River basin.

see NEW LIFE page 19

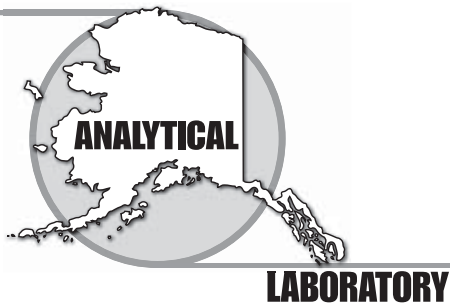


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ExxonMobil buys XTO Energy for \$31 billion

XTO has two platforms in Cook Inlet, which will make Exxon a producer in Alaska; main focus of purchase XTO's natural gas assets

By MARK WILLIAMS
Associated Press Energy Writer

ExxonMobil will buy XTO Energy Inc. in an all-stock deal worth \$31 billion as the oil giant moved aggressively Dec. 14 to capitalize on the growing supply of natural gas at home. The deal could signal a new rush to own natural gas assets by major integrated producers, and perhaps the start of a significant consolidation in the energy industry.

"Exxon is the group leader and it sets the trend. I would expect more acquisitions in the next three to six months," said Fadel Gheit, senior energy analyst for Oppenheimer. "Who that will be is the \$64,000 question."

XTO's holdings include two oil and gas platforms in Cook Inlet's Middle Ground Shoal field. The company acquired the Alaska interest in 1998 from Shell. That field started production in the mid-1960s and peaked a few years later. It is a minor oil and gas producer now — producing about 80,000 barrels of oil and 17 million cubic feet of gas per month, according to state statistics. XTO once held a small interest in the North Slope's Kuparuk River field, but it sold that interest in 2005.

Although Exxon has extensive production from North Slope oil fields, it doesn't operate any of the fields, and Middle Ground Shoal would be the first field the oil giant would run in the state. Exxon is developing the Point Thomson field on the North Slope, but that field isn't

expected to start production until 2014.

Exxon is closely watched in the industry and an acquisition like XTO could prompt other companies like Royal Dutch Shell, BP or Chevron Corp. to move.

Potential targets include big natural gas companies like Chesapeake Energy, Devon Energy and Anadarko, Gheit said.

XTO shows the priority that major producers are giving to natural gas as a fuel source. New technology has unlocked trillions of cubic feet of natural gas at home, meaning energy producers do not have to navigate tricky political environments overseas.

That doesn't mean that those projects are being excluded. Exxon just last week gave the go-ahead for a \$15 billion natural gas project in Papua New Guinea, positioning the world's largest publicly traded oil company to provide energy to a fuel-hungry China.

XTO claims about 45 trillion cubic feet of gas, much of it trapped in tight formations known as shale. Shares in the company jumped 15 percent, or \$6.37, to \$47.86 on the New York Stock Exchange Dec. 14.

Shares of Exxon fell 4.3 percent, or \$3.14, to \$69.69.



BOB SIMPSON

XTO's holdings include two oil and gas platforms in Cook Inlet's Middle Ground Shoal field. The company acquired the Alaska interest in 1998 from Shell.

New organization

Exxon has signaled recently that it was moving increasingly toward landing natural gas assets. Once the deal closes, Exxon said it will establish a new organization to manage global development and production of unconventional resources.

The company, based in Irving, Texas, will issue 0.7098 common shares for each common share of XTO, representing a 25 percent premium to XTO stockholders. Exxon also will assume \$10 billion in XTO debt.

The deal values XTO's shares at \$51.69, based on the closing price Dec. 11.

"XTO has a proven ability to profitably and consistently grow production and reserves in unconventional resources," Bob Simpson, chairman and founder of XTO, said in a statement.

Simpson is one of the highest paid executives in the United States. His compensation last year was valued at \$53.5 million.

He retired as CEO in 2008. ●

continued from page 18

NEW LIFE

The initial skirmishes for shale assets started in 2008 when BP acquired 25 percent of Chesapeake Energy acreage in Arkansas' Fayetteville shale for \$1.9 billion and Statoil paid \$3.375 billion for 32.5 percent of Chesapeake's acreage in the Marcellus shale of Pennsylvania.

Other potential targets

Tillerson is not ruling out more moves by ExxonMobil, noting "we still have a lot of financial capacity and wherewithal to look at and consider other things we would find attractive."

Those considered ripe for the picking include Chesapeake, Devon, Anadarko Petroleum, EOG Resources, Petrohawk Energy, Southwestern Energy and, in the eyes of some, Canada's EnCana, which has become a possible prime target having split off its unconventional gas holdings from its oil operations, plus ARC Energy Trust and Progress EnergyTrust.

Chesapeake Chief Executive Officer Aubrey McClendon, who is keeping tightlipped about whether his company has ever been courted by ExxonMobil, said the pending XTO transaction is "the latest and highest-profile validation of the future potential of deep shale plays to provide enormous new reserves of clean fuel" for the U.S.

What that might mean for the new EnCana, which has scarcely had a chance to draw breath since its rebirth as a pure-play unconventional gas producer, is the hottest talking point in Canada.

Genuity Capital Markets analyst Phil Skolnick estimated that what ExxonMobil is prepared to pay for XTO raises EnCana's worth to between \$49 and \$38 per share, compared with its current trading range of about \$30. At \$49, the market value of EnCana would soar from about \$23 billion to \$38 billion, a prospect that has investors salivating and probably has lawmakers quaking at the fallout should a foreign-owned entity make a run at one of Canada's corporate jewels. ●

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Edith Vorderstrasse

Recently named general manager, Edith Vorderstrasse brings more than 30 years of North Slope leadership experience to UMIAQ, including former positions as the mayor of Barrow and president of Ukepeagvik Inupiat Corp. She also has 25 years of general contracting experience



Edith Vorderstrasse,
General Manager

COURTESY PHOTO

as owner of Border Ventures. Born and raised in Barrow and fluent in the Inupiaq language, Vorderstrasse worked as a liaison for oil and gas operators in her most recent role as UMIAQ's stakeholder relations specialist. A UIC shareholder, Vorderstrasse is active in the promotion of shareholder hire and career advancement.

Amanda Henry

Named division manager of UMIAQ'S Consulting Group, Amanda Henry has more than nine years of regulatory experience for resource development, construction, and transportation projects throughout Alaska, as both a consultant and a state regulator. Henry holds a Juris Doctorate with an emphasis in Environmental and Natural Resources Law from the University of Oregon. She is well-versed in the regulatory and environmental requirements associated with operating in Alaska and is adept at successfully guiding projects to completion.



Amanda Henry, Division Manager,
UMIAQ Consulting Group

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—MARTI REEVE

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GOVERNMENT

Legislators want heavy oil discussions

Heavy oil is thick as honey and hard to pump out of the ground. That's where most of it has stayed while lighter crude is available.

But heavy oil may be the future of Alaska's petroleum development, despite higher costs and more environmental concerns. It's likely to be part of state lawmakers' discussions about the oil business when they meet in Juneau.

State Sens. John Coghill and Joe Paskvan say heavy oil should be included in a review of energy policies.

"Oil is still precious up there," said John Coghill, R-North Pole. "Heavy oil needs to be included in the discussion."

Lawmakers will be interested in knowing whether some of the North Slope's vast natural gas resources would be best used helping to reach heavy oil fields.

"If we want to develop new sources within known fields, then you have to talk about heavy oil," said Paskvan, D-Fairbanks.

The Alaska Division of Oil and Gas reports heavy oil production accounts for about 6.5 percent of this year's production on the North Slope, up from 5 percent in 2005.

Conoco Phillips and BP increased investment in heavy oil five years ago, and Italian firm Eni's new Nikaitchuq project focuses partly on heavy oil production, according to the division.

The North Slope has an estimated 30 billion barrels of "in place" heavy oil, up to one-fifth of which could be recoverable, said Kurt Gibson, division deputy director.

Heavy oil production, however, takes a lot of work. Companies need special submersible pumps or other equipment to draw it through thousands of feet of rock and toward production facilities.

"Heavy oil is traditionally more expensive to extract and refine than light oil," said Robert Dillon, an energy spokesman for U.S. Sen. Lisa Murkowski, R-Alaska. Dillon said much of the environmental community objects to the prospect of developing heavy oil deposits because doing so creates more greenhouse gases than many other energy processes.

"There are a number in Congress, mainly Democrats, who oppose heavy oil production and would like to combine climate legislation with a low carbon fuel standard."

But since development of heavy oil can often use existing drilling sites, the environmental footprint might be smaller than expanding for more light oil, said Pam Miller, an Arctic specialist at the Northern Alaska Environmental Center.

"It may be better environmentally to extract more oil from the existing developmental footprint than to reach into riskier offshore areas or into some environmentally sensitive areas on the North Slope," Miller said. "And it is on state lands, so that is generally better for Alaskans from the revenue standpoint."

—THE ASSOCIATED PRESS

continued from page 1

INSIDER

Davis immediately wrote to Banks for a guarantee the state would not allow the federal government to stand in the way of Kitchen Light exploration and development.

"Escopeta well understands the executed and recorded oil and gas leases we have with the State of Alaska to be a legal contract between us. I do not see anywhere in these contracts where the federal government has the right to supersede the State of Alaska in the obligations and operations under these oil and gas leases to Escopeta and its partners," Davis wrote.

He told Banks that it was "imperative and very urgent that Escopeta and its part-

ners know what guarantees the State of Alaska can give us today, that we can move our jack-up rig, begin drilling in late April, and fully develop the Kitchen Lights unit, as scheduled, without federal interference."

Davis asked for a response from Banks in the next 10 days, reminding the director that there was a "serious supply shortage of natural gas for Anchorage and the surrounding rail belt area."

The Kitchen Lights unit, he said, had the reserves to meet those needs.

For details about the beluga critical habitat process, see the article titled "Beluga territory" in the Dec. 6 edition of Petroleum News. It is online at www.petroleumnews.com/pnads/249277950.shtml.

—KAY CASHMAN

ACS \$6.8 million gift to the University of Alaska

Alaska Communications Systems said Dec. 8 that it has provided a gift to the University of Alaska worth an estimated \$6.8 million, enabling service continuity of core university functions should a major disruption occur. The gift will provide the university with a backup data center for its most important systems at ACS' facility in Hillsboro, Ore., along with all the necessary connectivity for its core systems, allowing UA to continue online operations that would otherwise be disrupted in the wake of a major disaster or outage. The gift comes at no cost to the university for five years, including maintenance at the Oregon facility. "ACS is proud to give back to the community and support the mission of the university," said Liane Pelletier, president and chief executive officer, ACS. For more information visit www.acsalaska.com.

Crowley takes delivery of 'Sunshine State' tanker

Crowley Maritime Corp. said Dec. 4, that it has taken delivery of Sunshine State, a 331,000-barrel, double-hull oil and chemical tanker, from General Dynamics NASSCO in San Diego, Calif., for American Petroleum Tankers LLC.

The Sunshine State is the first vessel Crowley has taken delivery of since the company was contracted by APT to handle shipyard construction management and overall vessel management, crewing and operation of the company's growing fleet. The Sunshine State measures 600 feet by 106 feet by 39 feet and has the capacity to carry 331,000 barrels of product. It has a single-screw, slow-speed diesel plant propulsion system with speeds of 15 knots. Two other sister vessels, the Empire State and the Evergreen State, which will both be chartered to the Military Sealift Command, are scheduled to be delivered to Crowley in 2010. For more information visit www.crowley.com.



COURTESY CROWLEY

Schlumberger launches temperature sensing service

Schlumberger said Dec. 8 that it has released its OPTICall thermal profile and investigation service. This new distributed temperature sensing service tracks fluid movements in real time along the wellbore, helping to detect leaks, monitor gas lift and evaluate fractures to improve field productivity. The OPTICall service is enabled by OpticLine fiber-optic line, which provides a thermal profile along the entire length of the line continuously in realtime, providing immediate answers on site. This fiber-optic line, which is deployed in a single run using slickline-type intervention, monitors dynamic temperature events with minimal interference. OpticLine can also run conventional production logging tools in memory mode while monitoring, for single-trip efficiency. For more information visit www.slb.com/OPTICall.

Unique Machine receives accreditations

Unique Machine LLC said Dec. 11 that the American Petroleum Institute, after completing a full review of Unique Machine's quality programs, has granted API Monogram License No. 5CT-1163 and API Monogram License No. 7-1-0758 to Unique Machine's products stated in API Spec 5CT and API Spec 7-1. In addition, Unique Machine's facility quality management system was found to be in conformance of requirements for the APIQR program. This program includes ISO 9001:2008, Q1-0456 for API SPEC Q1 and TS-0268 for ISO/TX 29001. "These accreditations reflect our on-going commitment to improve our quality management system and our desire to better serve our customers throughout the state," said Pat Hanley, general manager of Unique Machine.

Editor's note: All of these news items — some in expanded form — will appear in the next Arctic Oil & Gas Directory, a full color magazine that serves as a marketing tool for Petroleum News' contracted advertisers. The next edition will be released in March.



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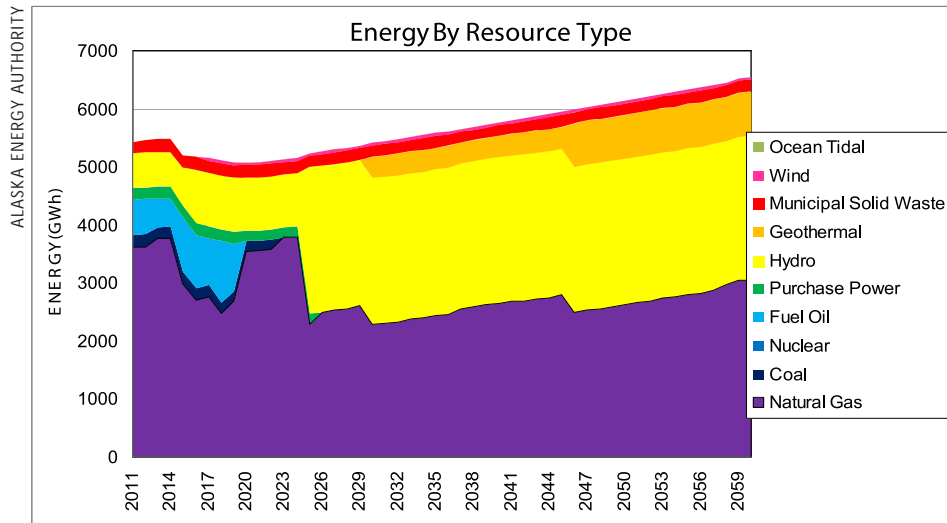
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A projection of energy obtained from different resources in a scenario in which Railbelt power demand increases at a modest rate shows large-scale hydropower becoming a major power source that somewhat displaces the future use of natural gas.

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FUTURE POWER

power grid and extending more than 500 miles from the southern Kenai Peninsula north to Fairbanks and Delta Junction, is facing a series of power supply problems: rapidly tightening supplies of natural gas, the main fuel for power supplies in Southcentral Alaska; a high level of dependence on fossil fuels; and an aging power generation and transmission infrastructure, with inefficient power plants and single points of failure along transmission interties of limited capacity.

Southcentral Alaska faces potential power shortages because of the deteriorating gas supply situation, while the Fairbanks area, with its partial dependence on oil-fueled electricity generation, has seen electricity costs soar.

SUBHEAD: Large-scale hydro

The integrated resource plan recommends a major move into the use of large-scale hydropower, but with natural gas continuing as a major fuel for power generation, albeit with the region's dependence on gas substantially reduced. In fact, the exceptionally long 50-year timeframe for the plan reflects an anticipated need for major hydropower projects, Kevin Harper, Black & Veatch project manager, told an audience of state legislators, state officials, power utility executives and interested members of the public at an AEA-convened meeting in Anchorage on Dec. 10.

"We did it for 50 years because we were looking specifically at large hydro as ... a key resource, and those projects are very long lived," Harper said.

Other significant but less prominent energy sources would be geothermal energy from the Mount Spurr volcano, wind power, and methane from municipal

solid waste sites. Coal would also be used as a fuel source in some situations. The use of fuel oil for power generation in Fairbanks would be phased out over a period of about 10 years. And the study recommends investigating with government agencies the environmental and permitting issues that may be associated with the use of tidal power, probably from the Turnagain Arm of Cook Inlet, although the study team views tidal power technology as insufficiently mature for inclusion in the integrated resource plan at the current time.

An underground coal gasification power plant proposed by Cook Inlet Region Inc for the west side of Cook Inlet is not included in the plan, this particular proposal not having appeared until some way through the integrated resource plan study period.

The integrated resource plan says that the primary source of future hydropower would likely be a proposed 330-megawatt system at Lake Chakachamna near Mount Spurr, although an alternative 600-megawatt system on the Susitna River, to the north of the Talkeetna Mountains, is also a possibility. The scale and cost of the Lake Chakachamna system would be more appropriate to the needs of the Railbelt grid than that of a Susitna system but, given the significant technical and permitting uncertainties associated with both systems, both projects should be pursued until sufficient information is available to make a decision on which to construct, the plan says.

Transmission network

In addition to recommending a particular mix of power sources for the future, the plan recommends a series of upgrades and additions to the current Railbelt transmission network, to alleviate the

see FUTURE POWER page 23

Planning for different power outcomes

In developing an integrated resource plan for power generation and transmission in the Alaska Railbelt, consultancy firm Black & Veatch evaluated four possible future power scenarios, Kevin Harper, Black & Veatch project manager, told a meeting organized by the Alaska Energy Authority to present a draft version of the plan. And for each of the scenarios, the Black & Veatch analysts plugged a shopping list of possible future power generation and transmission projects into a couple of computer models, to enable a determination of which projects would lead to the lowest cost of power for Railbelt consumers over the 50-year time period that the plan encompasses.

Base case

The simplest "base case" scenario assumed that the electricity load in the Railbelt region will continue to grow from its current peak of about 870 megawatts at a modest, steady rate, essentially as forecast currently by the region's electricity utilities. A second "high growth case" arbitrarily factored onto the base case two large 500-megawatt jumps in load, one jump occurring in 2015 and the other jump occurring in 2040. Those jumps in load could represent factors such as new mines coming on line, the introduction of a state policy to encourage the use of electricity for heating buildings, or the widespread use of electric vehicles in the region.

"The ability to absorb large generation projects and the ability to afford transmission projects could be enhanced if you have a bigger load," Harper said. "... The (current) load in the region is so low ... that it is hard to justify the types of investments necessary to develop the type of transmission network that you see elsewhere."

Factored onto these two distinct power demand scenarios, the analysts developed two other scenarios by constraining their models, to require at least 50 percent of the future Railbelt power generation to come from renewable energy sources by 2025, a renewables target proposed by former Gov. Palin.

The analysts also factored in 8 percent savings in energy requirements as a result of improved energy efficiency after the first few years of the plan.

"There are ways of developing these (energy efficiency) programs and delivering these programs which have been proven in numerous states," Harper said.

Major hydropower

The results for the simple base case showed that electricity pricing could be optimized over the 50-year plan period if new major hydropower were to displace some of the use of natural gas, the resource that currently fuels the bulk of Railbelt power generation. The new hydropower would not go into operation until around 2025, presumably as a consequence of the lead time for hydropower system assessment, planning, design, permitting and construction.

Natural gas would remain an important component of the energy mix, but oil-fired generation in Fairbanks would phase out by around 2020. Wind power, municipal solid waste methane and geothermal energy would all play increasing but modest roles as energy sources.

The high growth scenario, with its big jumps in power demand, would drive a need for both more hydropower and more natural gas-fueled power generation, with a need also for some growth in coal-fired power generation. Interestingly, the economies of scale inherent in the high-growth scenario cause a power cost reduction of about 4 percent relative to the base case.

However, it turned out that, because the Black & Veatch modeling selected large-scale hydropower generation, together with some wind power and geothermal, in both the base case and the high-growth scenarios, 50 percent of Railbelt power would come from renewable energy sources by 2025. Thus, the forcing of a requirement for 50 percent renewable energy would make virtually no difference to the cost of upgrading the generation and transmission infrastructure.

Unless, that is, the development of large-scale hydropower plants proves impractical. In which case, forcing a need for 50 percent renewable energy would drive up the costs by 9 to 10 percent, Harper said.

The modeling assumed a future carbon emissions cost as a consequence of federal greenhouse gas cap-and-trade legislation. Removing the carbon cost makes coal generation, such as generation from the Healy Clean Coal Project, more competitive.

—ALAN BAILEY

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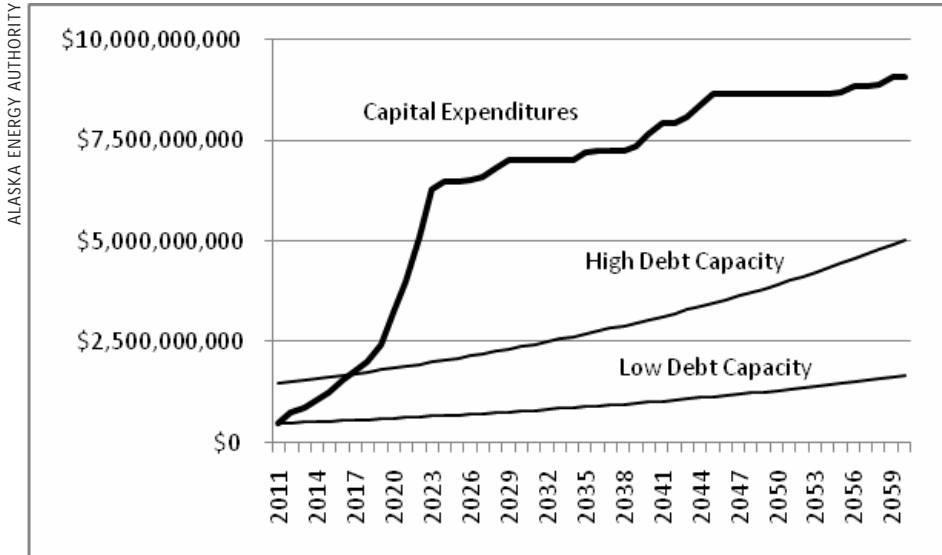
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The draft regional integrated resource plan shows capital investments in needed power generation and transmission infrastructure additions and upgrades totaling nearly \$10 billion over a 50-year period. The much lower range of debt capacity of the region's electricity utilities indicates a significant funding gap.

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FUTURE POWER

existing constraints on the amount of power that can be transferred between different parts of the region, to improve the overall reliability of the transmission system and to enable proposed new generation capacity to be brought on line.

The plan also recommends the development of state targets for improved energy efficiency, given that increased efficiency in energy consumption is a highly cost-effective way of managing the balance between energy demand and energy supplies. However, given factors such as a low dependency on electrical power for heating water and buildings in Alaska, the plan anticipates a relatively modest saving of around 8 percent in Railbelt power demand as a consequence of demand management and energy efficiency improvements.

The focus of the integrated resource plan is to minimize future Railbelt electricity costs while maintaining or improving power supply reliability for Railbelt consumers, considering the Railbelt region as a unified whole, rather than as a series of individual Railbelt utilities or independent demand centers. In fact, the plan envisages uniform power rates and a consistent, minimum reliability of service across the whole region.

"The regional plan is based on looking at the region as a whole, in terms of what transmission and generation investments would be best for the region," Harper said. "That is different than looking at what's best for each of the (current) individual six utilities."

Single entity

And the plan assumes the formation of a single entity for operating power generation and transmission throughout the Railbelt — proposed state legislation to be considered in the 2010 legislative session envisages the formation of such an entity, in the form of a greater Railbelt energy and transmission company, or GRETC, a nonprofit private company established under state statutes.

For various practical reasons, it is very unlikely that a regional integrated resource plan would come to fruition in a grid that continues to be managed by several independent utilities, Harper said. And were the existing utilities to proceed with all of their currently planned generation and transmission projects, that would likely add about 7.5 percent to the cost of the 50-year upgrade program, he said.

"It is a function of the fact that when you make decisions on an individual utility basis ... it's simply a suboptimal solution from a regional perspective," Harper said.

Moreover, the cost of upgrading the Railbelt grid over the 50-year period under a unified entity would likely total out at about \$10 billion, a figure far in excess of the maximum capital that the current utilities could raise.

"Today the utilities have anywhere from about \$500 million to \$1.5 billion in additional debt capacity and even if you grow that over time ... you end up with a significant (financing) gap," Harper said. "... The utilities cannot finance the future on their own."

Cost of financing

Dick Schober, a managing director with Seattle-Northwest Securities Corp., the firm that modeled and analyzed the financing required for the integrated resource plan, told the Dec. 10 AEA meeting that the financial analysis presented with the plan assumes the efficiency of raising capital by a single Railbelt entity such as GRETC, rather than the relative inefficiency of raising capital on a project-by-project basis. And borrowing by individual Railbelt utilities would be inherently more expensive than borrowing by a Railbelt-wide entity, he said.

"The capital markets view all the utilities as being somewhat in competition with one another, and they'll say that one entity may have more (financial) capacity than another, or may have more rate pressure on it than another, and that creates noise out there," Schober said.

see FUTURE POWER page 24

Taking another look at Susitna hydropower

To some an elegant dream but to others a gargantuan nightmare, the prospect of a mega hydropower project on the Susitna River, in the upcountry somewhere between the Talkeetna Mountains and the Alaska Range, periodically reappears within the sights of those seeking solutions to the power generation issues facing Alaska's Railbelt.

Originally envisaged in the 1970s in the form of a variety of dam possibilities on the upper Susitna River, and investigated in some detail as a two-dam project in the early 1980s, potential Susitna hydropower has recently received further scrutiny in a study conducted for the state by HDR Alaska Inc. This new study has dovetailed into the development of a draft Alaska Railbelt regional integrated resource plan by consultants Black & Veatch for the Alaska Energy Authority.

The new assessment considered six possible hydropower dam concepts on the upper Susitna, with power capacities ranging from 380 megawatts to 1,880 megawatts and with estimated construction costs ranging from \$3.6 billion to \$10 billion.

The new assessment considered six possible hydropower dam concepts on the upper Susitna, with power capacities ranging from 380 megawatts to 1,880 megawatts and with estimated construction costs ranging from \$3.6 billion to \$10 billion. Five concepts involve the building of a dam in the area of Watana Creek, in remote territory south of the Denali Highway, while one concept involves a dam between Watana and Devil's Canyon, a few miles east of where the Alaska Railroad veers north from the Susitna River.

And most of the projects are large in relation to the scale of power demand in the Alaska Railbelt.

Reduced scale

"When the Railbelt integrated resource plan (project) started we realized and they told us that most of the projects we were looking at ... were too big and too expensive," said Bob Butera, an HDR civil engineer, during a Dec. 10 AEA-organized presentation of a draft Railbelt integrated resource plan. "So essentially we looked at lower cost alternatives ... and we looked at determining what's called the firm capacity, which is the amount of power that a project can produce on a continual basis."

Butera said that either of two Susitna projects looked to fit within an integrated resource plan scenario that assumes a high rate of growth in Railbelt electricity demand and that requires at least 50 percent of the power to be generated from renewable energy sources. One of those projects is a 600-megawatt, \$4.5 billion concept called "low Watana non-expandable." The other project is an expandable \$4.9 billion version of the 600-megawatt "low Watana" system.

And the Susitna hydropower concepts are well understood, appear to be technically feasible and appear to have manageable environmental and seismic risks, Butera said.

Chakachamna?

However, Black & Veatch has concluded that, for a base-case Railbelt power scenario with modest growth in power demand, considerations of cost and scale favor the construction of an alternative hydropower system that would draw water from Lake Chakachamna, next to Mount Spurr on the west side of the Cook Inlet. But the feasibility of the Chakachamna hydropower concept has been less thoroughly investigated than that of Susitna hydropower: Black & Veatch has recommended further assessment of both Chakachamna and Susitna hydropower, to enable a fully informed decision on which project to pursue.

So, a major dam across the Susitna River remains a future possibility.

—ALAN BAILEY



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FUTURE POWER

However, despite the relative efficiency of funding a single Railbelt entity, the magnitude of the cost of the required upgrades and additions to the Railbelt grid would drive the need for some level of state or federal assistance, with a GRETC-style entity acting as a vehicle for that assistance, Schober said.

Bradley Lake model

Up-front state funding with later payback to the state, as was established for the hydropower plant at Bradley Lake on the Kenai Peninsula, may prove an effective model for the funding of future generation and transmission infrastructure, Schober said. And the financing concept proposed in the integrated resource plan involves the supplementing of private capital with low-interest state loans.

"We've basically used a form of that (Bradley Lake) model in our funding analysis as we tried to create equity in the rate structure relative to the integrated resource plan projects," Schober said. "... With the state involvement as risk taker in the project, the capital cost of doing those projects would be greatly reduced."

Also the state can extend the amortization of the funding beyond what is normally available in commercial markets, thus reducing near-term power rates associated with long-lived assets such as hydropower plants, he said.

However, recognizing the inherent uncertainties associated with both the technical and commercial aspects of the integrated resource plan, the authors of the plan recommend maintaining a high level of flexibility in determining which specific generation and transmission projects to pursue — the plan can help set general policy direction, while the precise choice and nature of specific initiatives and projects will evolve over time. For example, although the plan envisages the continued use of gas-fired power stations, there is considerable uncertainty over where the gas to fuel these power stations is going to come from. And technical uncertainties and permitting risks associated with large-scale hydropower proposals need to be resolved before development decisions can be made.

Near-term actions

But, to set the stage for future flexibil-

Power from the North Slope by HVDC?

State-of-the-art high-voltage direct current, or HVDC, technology is changing the rule book for long-distance power transmission, thus perhaps making feasible the export of large-scale power supplies from the North Slope, Todd Glass, a partner with law firm Wilson Sonsini Goodrich & Rosati, told the Law Seminar International's Energy in Alaska conference Dec. 8. An HVDC power transmission line hooked into a North Slope gas-fired power station might prove a viable alternative to a gas line for monetizing North Slope gas, he said.

"The estimated cost of bringing a 600- to 800-kilovolt HVDC system from the North Slope down at least to Valdez or thereabouts is about \$1 billion to \$1.2 billion," Glass said. That cost compares very favorably with the cost of a gas line. Cheap power shipped from the North Slope could be connected into the Anchorage and Fairbanks areas as a power source for new industries. And it's also possible to envisage extending a North Slope power transmission line down to the U.S. West Coast, Glass said.

A North Slope power transmission line might also support North Slope wind farms, or hydropower in the Brooks Range, he said.

"All of a sudden you're going to have an electric power system that is robust and creates jobs, creates a whole lot of economic opportunity," Glass said. "... This to me is exciting and this to me a real possibility."

Long-distance HVDC transmission is a reality, and not a theoretical concept, with China for example having already established an HVDC transmission network, including a line connecting power generation near the Tibetan plateau into main electricity demand centers, Glass said.

"There are 800-kilovolt, 1,000-kilovolt lines that are being built from the generation systems to the load centers in China," he said. "They are building them today."

And in North America, there is a plan to lay a 500-kilovolt HVDC transmission cable between Vancouver Island offshore western Canada to the Olympic Peninsula of Washington state.

The traditional use of alternating current, as distinct from direct current, for transmitting electricity dates back to an 1880s feud between George Westinghouse and Thomas Edison over the appropriate technology for distributing electricity, with Westinghouse's AC technology, devised by a Serbian called Nikola Tesla, winning out over Edison's DC system.

But it has long been known that DC current moves power more efficiently than AC. And DC cabling, with few electromagnetic effects, can be buried underground or even run under water. A relatively thin DC line can carry a lot of power — rights of way for DC transmission lines are typically 70 percent smaller than those for AC lines, Glass said.

—ALAN BAILEY

Long-distance HVDC transmission is a reality, and not a theoretical concept, with China for example having already established an HVDC transmission network, including a line connecting power generation near the Tibetan plateau into main electricity demand centers, Glass said.

ity, the plan recommends some near-term actions by the state:

- Form GRETC, or an equivalent regional entity, and establish state policies for energy issues such as the use of large-scale hydropower and renewable energy sources.
- Set targets for an energy efficiency program and for the use of renewable energy resources.

- Select a preferred resource plan for Railbelt power and develop a public outreach plan for what is proposed.

- Develop a policy for state funding assistance for the Railbelt power supply upgrades.

GRETC should develop a standard power procurement process, to facilitate competitive bidding by potential independent power producers in the region,

Harper said.

To ensure the short-term continuity of power supplies, the state, the existing gas and power utilities and the gas producers all need to work together to establish new gas storage facilities, and to secure short-term LNG imports as a transitional fuel supply until additional Southcentral gas supplies can be established, either from the Cook Inlet basin or from the North Slope, Harper said.

The state also needs to evaluate options for long-term gas supplies, to set in motion any engineering and permitting needed to put those supplies into operation.

And the state needs to establish appropriate commercial terms and pricing mechanisms for Southcentral gas, to "provide producers with the incentive to increase exploration for additional gas supplies in the Cook Inlet or nearby basin," the plan says.

Projects should proceed

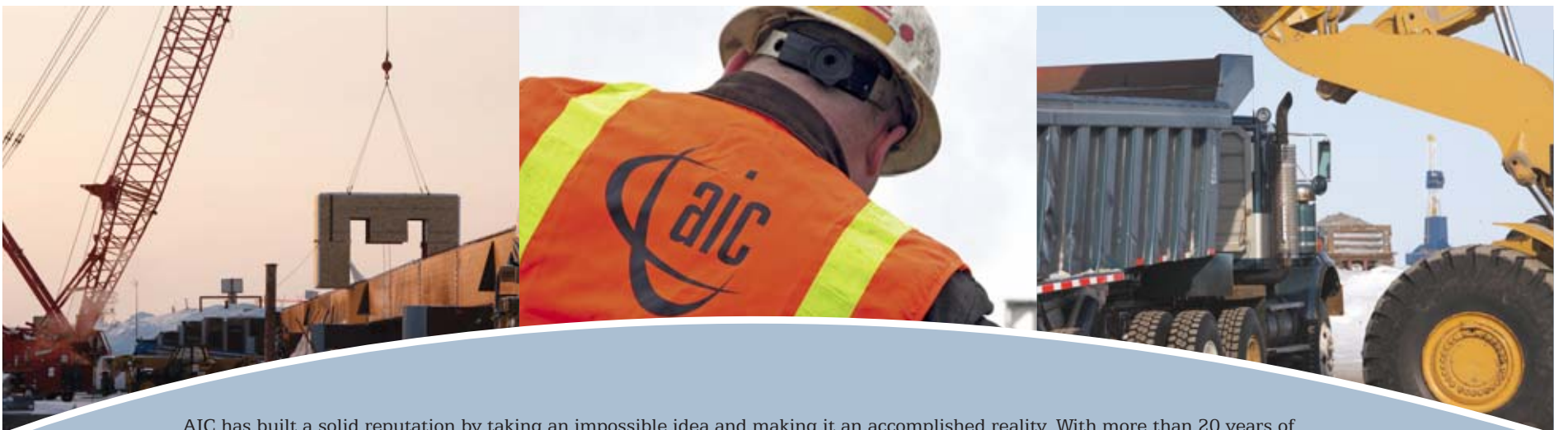
Several power projects already in the works should proceed, the plan says. These projects consist of a modern combined-cycle gas-fired power plant in Anchorage, planned by Chugach Electric Association and Municipal Light and Power; Cook Inlet Region Inc.'s Fire Island wind farm and a planned wind project at Nikiski on the Kenai Peninsula.

However, the Healy Clean Coal Project, a mothballed power plant about halfway between Anchorage and Fairbanks, should remain under wraps until the future of federal cap-and-trade legislation is known — future carbon costs from a cap-and-trade scheme could render the Healy plant uncompetitive with other energy sources, despite the fact that the plant has already been constructed, the plan says.

Municipal solid waste power projects should be pursued in Anchorage and Fairbanks. And investigations should proceed into the development of the Chakachamna and Susitna hydropower plants, and into the proposed Glacier Fork hydropower plant on the Knik River near Palmer, to enable decisions on which of these plants to develop.

Several projects to upgrade the regional power transmission system should also proceed, the plan says. ●

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