SCR

10

FISCAL NOTE

STATE OF ALASKA
2001 LEGISLATIVE SESSION

Fiscal Note Number:
Bill Version: SCR 10
(S) Publish Date:

Revision Date/Time (Note if correction):
Dept. Affected: None
Title: Sale of Natural Gas to Power Data Centers
BRU:
Component:
Sponsor: Senate Finance
Requester: Senate Resources
Component Number:

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES						
CHANGE IN REVENUES ( )						

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type)						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2001) cost: 0.0

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: *(Attach a separate page if necessary)*

Prepared by: SENATE RESOURCES COMMITTEE Phone: 465-2828

Senator: Date: 4/26/01
SENATOR JOHN TORGERSON, CHAIR

ALASKA STATE LEGISLATURE

Senator John Torgerson, Chair
Senator Drue Pearce, Vice Chair
Senator Rick Halford
Senator Pete Kelly
Senator Robin Taylor
Senator Kim Elton
Senator Georgianna Lincoln

SENATE RESOURCES COMMITTEE

STATE CAPITOL, Room 427
JUNEAU, AK 99801-1182
Phone: (907) 465-4907
FAX: (907) 465-4779

35477 Kenai Spur Hwy.
Suite 101B
Soldotna, Ak 99669
Phone: (907) 260-3041
Fax: (907) 260-3044

April 24, 2001

Mark Myers
Director, Division of Oil & Gas
550 W. 7th Ave., Suite 800
Anchorage, AK 99501-3560

Dear Mr. Myers:

Representatives of Netricity, LLC have been talking to me and other members of the legislature about purchasing North Slope gas from the State of Alaska. Under the proposal, Netricity could take deliveries of gas as early as July 1, 2002, before any major gas sale by the Prudhoe Bay Unit lessees. Concurrent resolutions supporting such a sale to Netricity have been introduced in both the House and the Senate.

Mike Hurley, the representative for the North American Natural Gas Pipeline Group, has "informally" told the consultant for the Senate Resources Committee that the Group's view was that, under the state's oil and gas lease and other applicable agreements, the State of Alaska would not have the right to sell as royalty gas the state's share of gas that is produced from the Prudhoe Bay Unit. I have asked that Mr. Hurley put the Group's formal position in writing.

It is very important for the legislature to know whether the state cannot sell its share of gas produced from the Prudhoe Bay Unit unless the lessees consent to the sale. I intend to hear SCR No. 18 relating to the Netricity proposal in the Senate Resources Committee on Friday, April 27. I would appreciate the division's views on this issue, in writing, before or at the hearing.

Sincerely,

Senator John Torgerson

ALASKA STATE LEGISLATURE

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Senator Drue Pearce, Vice Chair
Senator Rick Halford
Senator Pete Kelly
Senator Robin Taylor
Senator Kim Elton
Senator Georgianna Lincoln

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Suite 101B
Soldotna, Ak 99669
Phone: (907) 260-3041
Fax: (907) 260-3044

April 24, 2001

Michael J. Hurley
North American Natural Gas Pipeline Group
601 W. 5th Ave. Suite 500
Anchorage, AK 99501

Dear Mr. Hurley:

As you know, representatives of Netricity, LLC have been talking to me and other members of the legislature about purchasing North Slope gas from the State of Alaska. Under the proposal, Netricity could take deliveries of gas as earlier as July 1, 2002, long before any major gas sale by the Prudhoe Bay Unit lessees. Concurrent resolutions supporting such a sale to Netricity have been introduced in both the House and the Senate.

You have "informally" told the consultant for the Senate Resources Committee that your view was that under the state's oil and gas lease and other applicable agreements, the State of Alaska would not have the right to sell as royalty gas the state's share of gas that is produced from the Prudhoe Bay Unit. Through our consultant, I have asked that you "formally" tell us your position.

It is very important for the legislature to know whether the Prudhoe Bay Unit lessees believe that the state cannot sell its share of gas produced from the Unit unless the lessees consent to the sale. I intend to hear SCR No. 18 in the Senate Resources Committee on Friday, April 27. I would appreciate your response, in writing, before or at the hearing.

Sincerely,

Senator John Torgerson

22-LS0921\F
Chenoweth
4/26/01

CS FOR SENATE CONCURRENT RESOLUTION NO. 10(RES)

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SECOND LEGISLATURE - FIRST SESSION

BY THE SENATE RESOURCES COMMITTEE

Offered:
Referred:

Sponsor(s): SENATE FINANCE COMMITTEE

A RESOLUTION

Requesting the commissioner of natural resources to make a determination about the state's royalty share of North Slope natural gas, and expressing the legislature's support for sale of a portion of Alaska's North Slope natural gas for electrical generation to power data centers within the North Slope Borough.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the State of Alaska has vast proven reserves of natural gas located on the North Slope within the North Slope Borough; and

WHEREAS the need for electricity in the United States is increasing due in part to the demands of the Internet; and

WHEREAS Netricity, L.L.C., an Alaska limited liability company, is seeking to purchase natural gas from the State in order to use that natural gas to generate electricity in the North Slope Borough to power nearby data centers that would service the demands of the Internet; and

WHEREAS the establishment of data centers in the North Slope Borough would create jobs for construction of modules in Anchorage and Nikiski; and

WHEREAS the operation of a power plant and data centers in the North Slope Borough would bring economic and social benefit to the State; and

WHEREAS the establishment of data centers within the North Slope Borough would provide substantial added value to Alaska's natural gas resources; and

WHEREAS AS 38.05.183 mandates that any sale of the state's oil and gas royalty "shall be by competitive bid" unless the commissioner of natural resources

(1) determines, in writing with specific findings and conclusions, that the best interest of the state does not require competitive bidding or that no competition exists; and

(2) gives notice to the Alaska Royalty Oil and Gas Development Advisory Board; and

WHEREAS AS 38.05.183 mandates that, if the commissioner determines to sell royalty oil or gas noncompetitively, the commissioner shall consider the criteria in AS 38.05.183(e) and AS 38.06.070; and

WHEREAS 11 AAC 03.010 mandates that, before the sale of royalty gas is completed, whether by competitive bid or not, the commissioner shall make a public finding that the sale is in the best interests of the state; and

WHEREAS AS 38.06.050 requires that, before any long-term, substantial sale of the state's oil or gas may be made, the sale must be reviewed by the Alaska Royalty Oil and Gas Development Advisory Board, and the board must issue a written recommendation to the legislature about the sale; and

WHEREAS AS 38.06.055 requires that, before any long-term, substantial sale of the state's oil or gas may be made, the sale must be approved by the legislature;

BE IT RESOLVED that the Alaska State Legislature supports the sale of a portion of Alaska's North Slope natural gas, at a competitive, reasonable price, to allow for electrical generation within the North Slope Borough to power data centers located proximately to an electrical generation facility in that borough; and be it

FURTHER RESOLVED that the Alaska State Legislature requests that the commissioner of natural resources determine in a written finding whether the state's royalty share of North Slope natural gas must be competitively bid at this time, and, if it must, conduct a competitive sale; and be it

FURTHER RESOLVED that the Alaska State Legislature requests that, if the

commissioner of natural resources determines that the state's royalty share of North Slope nat ral gas need not be competitively bid, the commissioner

(1) enter into negotiations with Netricity, L.L.C., or another qualified purchaser, for the sale of the state's royalty share of North Slope natural gas consistent with tne procedures and policies set out in AS 38.05.183, AS 38.06, and 11 AAC 03; and

(2) by the first day of the Second Regular Session of the Twenty-Second Alaska State Legislature, present the legislature with either a contract for the sale of the North Slope royalty gas for approval or a report explaining why the state should not sell its royalty gas.

Alaska State Senate
Senate Finance Committee

Official Business

Mail Stop 3100
State Capitol
Juneau, Alaska 99801-1182

CS for SCR 10(RES)

Version: 22-LS0921\F

A Resolution requesting the commissioner of natural resources to make a determination about the state's royalty share of North Slope natural gas, and expressing the legislature's support for sale of a portion of Alaska's North Slope natural gas for electrical generation to power data centers within the North Slope Borough.

Netricity, L.L.C. is proposing to purchase Alaska's royalty natural gas from the North Slope. The purpose is to build a large power plant on the North Slope that would generate electricity for large data centers servicing the Internet worldwide.

Since 1995 Internet data transmission volumes have been doubling approximately once every three months. The Netricity plan would be linked to the Internet via the existing Alaska United fiber-optic cable system from Prudhoe Bay to Valdez, Anchorage, Seattle and the North Pacific fiber-optic cable. With its location and access to the North Pacific Cable this facility would access North American and Asian Internet markets and straddle communications between the two continents.

Such a project would bring employment to Alaska for the construction and operation of an Internet facility. Under the current scope, Netricity is expected to build production modules in Nikiski and Anchorage.

This Resolution creates added value to our resources; job creation in the construction and operation of the facilities; training of operation; and the overall economic diversification created by the proposed project. SCR 10 promotes Alaskan hire and Alaskan development.

PHILLIPS Alaska, Inc.
A Subsidiary of PHILLIPS PETROLEUM COMPANY

GREATER PRUDHOE AREA
P.O. BOX 100360
ANCHORAGE, ALASKA 99510-0360
PHONE (907) 263-3710
FACSIMILE (907) 265-6339

Margaret A. Yaege
Vice President

April 27, 2001

The Honorable John Torgerson
State Senate
State Capitol, Room 516
Juneau, Alaska 99801-1182

Dear Senator Torgerson:

This letter responds to your request for a statement setting forth the understanding of Phillips Alaska, Inc. ("Phillips") concerning the rights of the Department of Natural Resources, in its capacity as the lessor of the Prudhoe Bay Unit leases, to take gas in kind. The governing leases and settlement agreements provide that the lessor is entitled to its royalty share of Prudhoe Bay Unit gas that is produced and saved, whether received in amount or value, when that gas is either sold or used outside the Unit.

The question you have raised about the particular rights and obligations under the leases is one that has never been examined by Phillips in any detailed fashion. That being said, if a circumstance were to arise where the State desired to take royalty gas in kind in advance of when it was due, Phillips would be prepared to work constructively with DNR with regard to any such proposal to attempt to resolve the difficult issues which might arise under the proposal.

Sincerely,

Margaret A. Yaege

Margaret A. Yaege

bp

BP Exploration (Alaska) Inc.
900 East Benson Boulevard
P.O. Box 196612
Anchorage, Alaska 99519-6612
(907) 561-5111

VIA FAX (907) 465-4779
April 26, 2001

Senator John Torgerson, Chair
Senate Resources Committee
State Capitol, Room 427
Juneau, AK 99801-1182

Dear Senator Torgerson:

I am responding on behalf of BP to your letter of April 24, 2001, to Michael J. Hurley. Mr. Hurley is a member of the study team that BP, ExxonMobil and Phillips recently formed to determine the feasibility of constructing a natural gas pipeline from the Alaska North Slope through Canada to market areas in Canada and the lower 48.

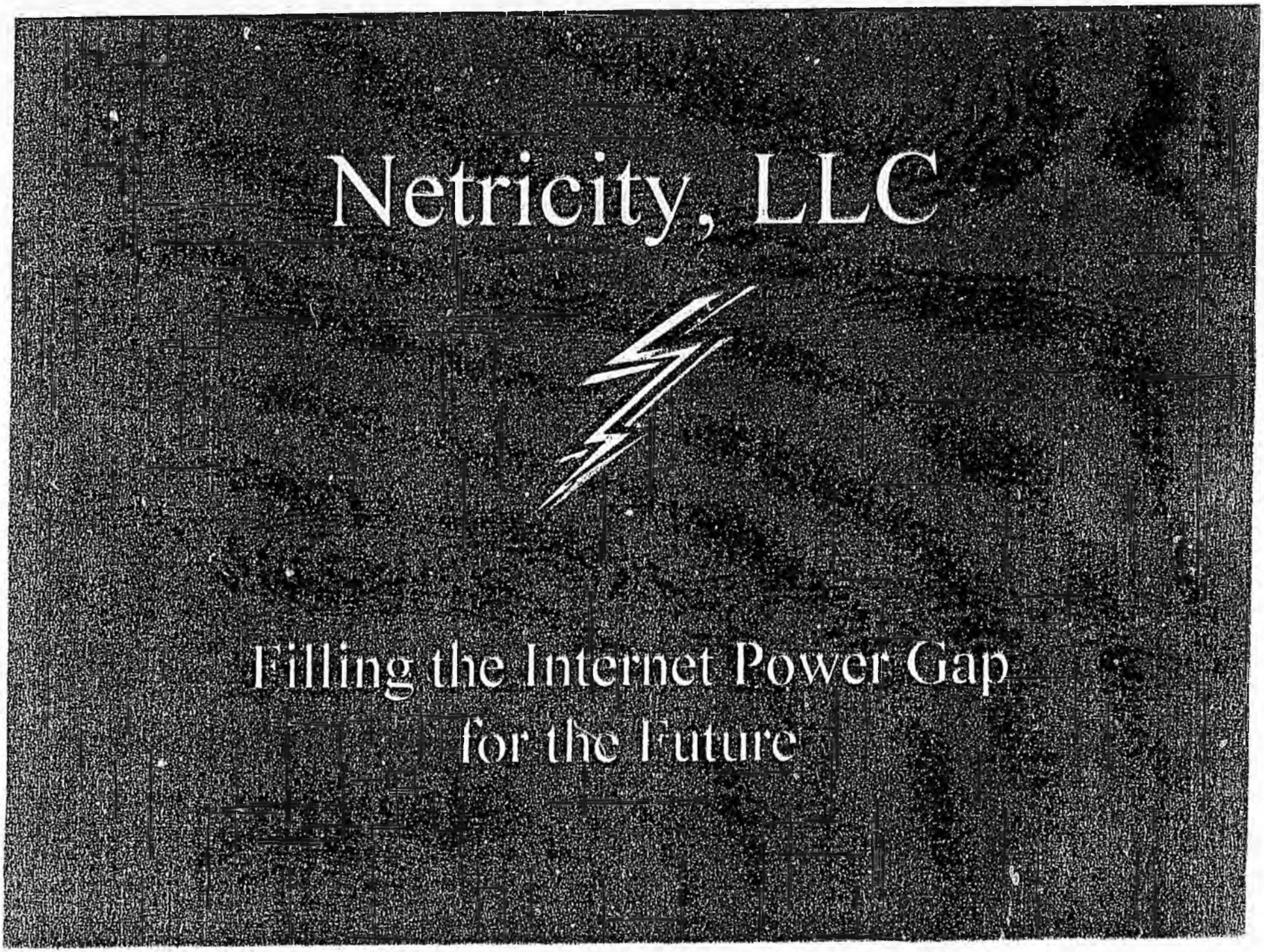
You have requested our views regarding the State of Alaska's right as a royalty owner to sell gas from the Prudhoe Bay Unit prior to any major gas sales.

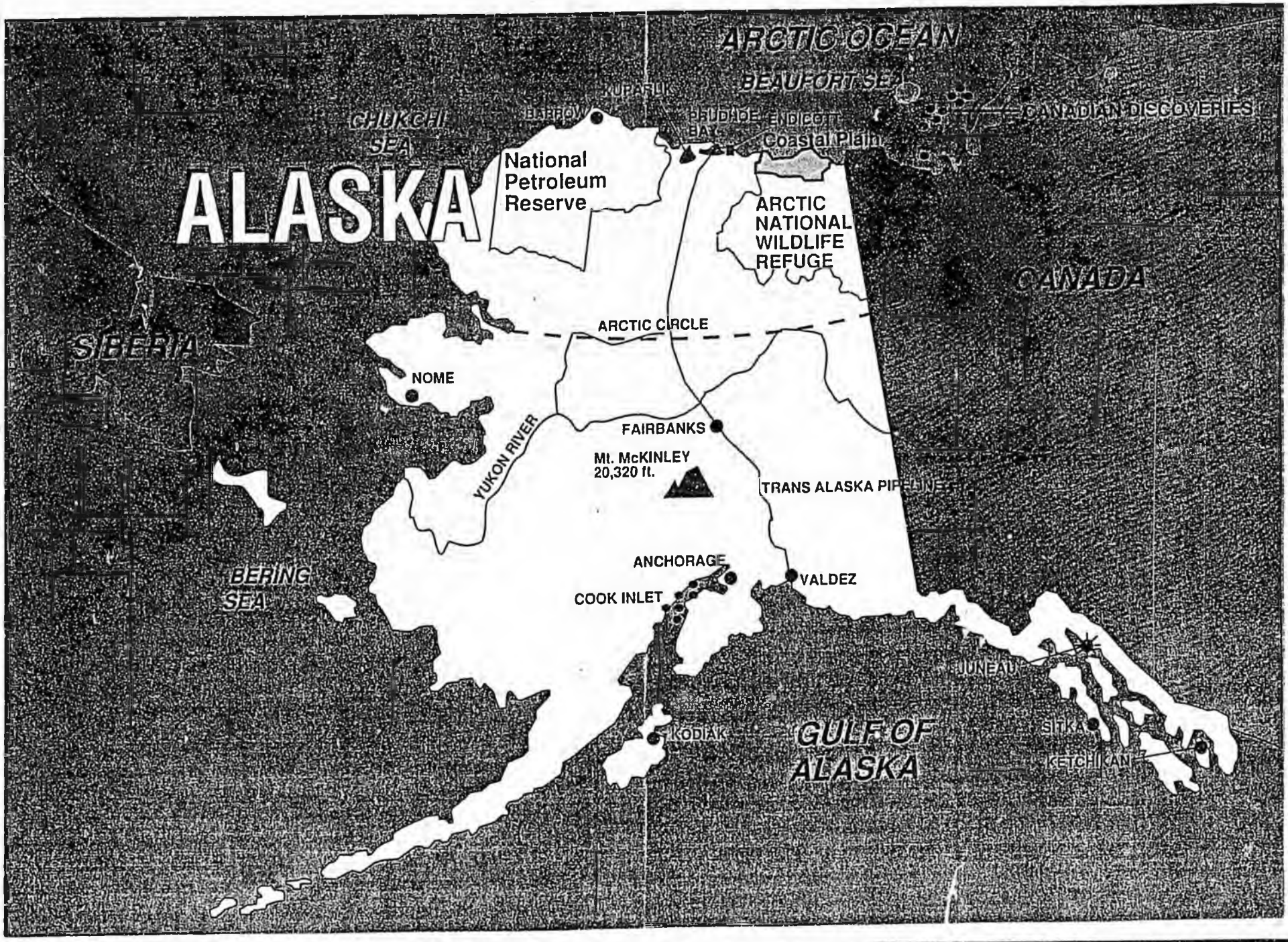
Our understanding of the State of Alaska oil and gas leases in the Prudhoe Bay Unit and other related agreements is that the State is entitled to take its royalty share of gas in kind only after the gas has been produced, saved and sold by the lessees as part of their commercial production of natural gas from the Unit. (note – there are already a number of smaller contracts for the sale of gas at Prudhoe Bay and other producing fields) This is common in royalty contracts across Alaska and the United States.

While the royalty contracts are clear on this matter, BP is of course very willing to work with the State if the State develops a specific proposal it wishes to pursue in advance of a major gas sale, be it Netricity or some other project. I have every confidence mutually agreeable arrangements can be made.

Sincerely yours,

Ken Konrad
Sr. Vice President and Business Unit Leader
Alaska Gas Business Unit


Netricity, LLC
Filling the Internet Power Gap
for the Future


ARCTIC OCEAN
BEAUFORT SEA
CANADIAN DISCOVERIES
CHUKCHI SEA
BARROW
KUPARUK
PRUDHOE BAY
ENDICOTT
Coastal Plain
ALASKA
National Petroleum Reserve
ARCTIC NATIONAL WILDLIFE REFUGE
CANADA
SIBERIA
ARCTIC CIRCLE
NOME
FAIRBANKS
YUKON RIVER
Mt. McKINLEY 20,320 ft.
TRANS ALASKA PIPELINE
ANCHORAGE
VALDEZ
COOK INLET
BERING SEA
JUNEAU
KODIAK
GULF OF ALASKA
SITKA
KETCHIKAN

Alaska: Powering the Internet

Using Electricity Generated with Natural Gas on Alaska's North Slope to Power Data Centers

Internet Power Demand

- Since 1995 internet data transmission volumes have been doubling approximately once every three months.
- Yankee Group, an internet research firm, estimates the data center business to be a $9 Billion revenue business in 2000, rising to over $47 Billion by 2003.

- Computers, servers and the Internet now consume approximately 8% of U.S. electricity, according to the Digital Power Report.
- Kenneth Lay, Chairman of Enron Corp., predicted in October, 1999, that by the year 2010, one-half of U.S. electricity production would be dedicated to computers and the Internet.

- 54 Million American households, or 51% of the total, have computers and 41.5% of American homes have Internet access, up from 26.2% in 1999.
- American businesses have over 50 Million computers in service.
- Cisco's 7500 Series Router, one of the data center business standards, can consume over 1,000 watts of power.

Alaska's Vast Natural Gas Reserves

- The North Slope of Alaska contains no less than 35 Tcf (Trillion Cubic Feet) of proven natural gas reserves.
- Those proven reserves are a mere fraction of the total volume of natural gas located on the North Slope as probable and possible reserves which could ultimately be brought into commercial production.

- Those natural gas reserves do not have a market currently due to the prohibitive cost of building a pipeline to the lower 48 states.
- Similarly, while gas fired power generation currently takes place on the North Slope, the costs of building an electrical transmission system to the lower 48 states and the associated line loss of electricity transmitting over that distance, prohibit the construction of power plants on the North Slope to use that gas in-situ to produce electrical power.

Proposed Pipeline Construction

- Feasibility studies are under way for the construction of a 2.5 to 4.0 Bcf per day pipeline from the North Slope to the Lower 48 with in-service dates estimated from 2006 to 2010.
- Any such pipeline will still leave a tremendous amount of gas stranded on the Slope with no market.

- Assuming the larger potential pipeline, of 4 Bcfd capacity, went in service at the earliest proposed date of 2006, that pipeline would move 1.46 Tcf per year from the Slope. At that rate it will take 24 years to move only the proven reserves of today from the Slope, with all probable and possible reserves behind that. Given the 6 years between now and the earliest in-service date for the pipeline, some of the proven reserves of today could not get into that pipeline for 30 years.

The Netricity Concept

- Utilize North Slope natural gas to generate electricity locally for use in a large data center located on the North Slope.
- The data center would be linked to the Internet via the existing Alaska United fiber-optic cable system from Prudhoe Bay to Valdez, Anchorage, Seattle and the North Pacific fiber-optic cable.

Advantages and Benefits of the Netricity Concept

- Creation of a market for natural gas in the near term without the need for a pipeline.
- High-tech, well paying employment opportunities for Alaskans.
- With its location and access to the North Pacific Cable this facility would access North American and Asian Internet markets and straddle communications between the two continents.

- Ambient Cooling: A major cost for data centers in the Lower 48 is air conditioning to keep electrical components from overheating. The North Slope offers tremendous ambient cooling possibilities with heat pumps or ambient air flowed around computer clean rooms, eliminating air conditioning needs and the power associated with that cooling effort.

Power Reliability

- Power generated on the North Slope could be fully dedicated and conditioned to meet the needs of the data processing industry, which is demanding a higher quality and reliability of power. That data center would not have to compete for power from the grid or suffer the spikes in that power as seen in the Lower 48 states.

Possible Advantages

- A combined cycle power plant would generate electricity at a higher cost but would also generate steam which could potentially be utilized in heavy oil recovery.
- CO2 produced by the power plant could potentially be pumped into oil reservoirs to maintain pressure and as an Enhanced Oil Recovery effort.

Netricity's Requirements

- We need a gas supply in the range of 1 Tcf, to be utilized in the power plant over the next 25 years.
- The chances of bringing a data center to the North Slope are inversely proportional to the cost of natural gas. The lower the cost of gas, the lower the cost of electricity generated will be and that low cost electricity would attract the data center.

Natural Gas Purchase Proposal

Proposal to Acquire Options to Purchase Natural Gas From the State of Alaska on the North Slope

1) Netricity, LLC (Netricity) needs to secure a natural gas supply on the North Slope of Alaska under a series of options to purchase gas in order to be certain of that supply prior to marketing electricity to data center power users.

2) We anticipate that electrical generation capacity will be added in 45 MW (Megawatt) increments. Each 45 MW turbine will require approximately 8.5 MMCFD.

3) The options that Netricity needs to secure to buy natural gas are requested under the following general terms and conditions:

   a) Netricity would secure 14 options to purchase natural gas and each option could be exercised to execute a gas purchase contract for a volume of 90% to 110% of a volume of 8.5 MMCFD for at least 5 and no more than 25 years from a date commencing no less than 60 or more than 180 days after the date of option exercise. The 10% variability will allow Netricity to more exactly nominate and contract for the volumes needed, based upon experience and fuel consumption of the earliest turbine(s) installed.
   b) The options would each be for a duration of 5 years, commencing on July 1, 2002.
   c) All natural gas contracts resulting from the exercise of an option or options would be take-or-pay in nature, with Netricity being required to pay for all gas under contract, subject to make-up provisions allowing for previously purchased gas to be taken at a later date, and for buyout of the remaining term of any such contracts at an agreed upon discount.
   d) All natural gas under option to Netricity must be utilized within Alaska and may not be exported out of the state prior to use.
   e) Natural gas delivered under the contract would be dehydrated, free of sulfur and comprised of no more than 1 (one) molar percent of inert gases at a pressure base of between 650 and 1,000 psi.
   f) Natural gas under the gas purchase contracts would all be delivered at mutually agreeable central facility(s) within or proximal to the Prudhoe Bay Field.
   g) Natural gas purchased pursuant to the exercise of options would be at a price of $0.36/mcf, regardless of the date of option exercise or duration of the contract secured by exercise of that option.
   h) Events qualifying for excuse of performance by either party due to events constituting force majeure would be mutually agreed to by the parties.
   i) State agrees not to supply any other parties with natural gas within the North Slope Borough for purposes of generating electricity that would be dedicated to powering data centers co-located with generation for a period of 5 years commencing on July 1, 2002.

News Articles

Alaska to hold critical role in US energy politics

Steven Poruban
Senior Staff Writer

Alaska's oil and gas resources—and the ability to explore for, develop, produce, and transport them—will play a key role in US energy politics in the coming years, particularly under a new administration in the US White House.

The exploitation of Alaska's extensive hydrocarbon reserves hinges largely on two main issues: the development of a scheme to transport natural gas from the Alaskan North Slope to markets in the US Lower 48 and the opening of the Arctic National Wildlife Refuge (ANWR) Coastal Plain to exploration and development (see related story, p. 66).

Alaska Gov. Tony Knowles
"Alaska's natural gas can be the foundation of a 21st century economy of high-tech resource development, high-tech manufacturing, and new business growth and quality of life based on affordable clean energy. With known and estimated [Alaskan] reserves of up to 100 tcf, natural gas can fuel our economy for the next 50-70 years, but to start this mammoth project, we need a single point of contact."

Topping the list of priorities of newly elected US Pres. George W. Bush is a revamp of the country's energy policy. As part of this policy, Bush has stressed the need to include an aggressive approach to exploration within the US, in hopes of easing the country's dependence on foreign oil.

During one of the presidential debates in early October 2000, Bush stated, "The only way to become less dependent on foreign sources of crude oil is to explore at home. And you bet I want to open up a small part of Alaska, because when that field is on line, it will produce [1] million b/d. Today, we import [1 million b/d] from [Iraq.] I would rather that a million come from our own hemisphere, our own country, as opposed from Saddam Hussein."

Pipeline routes

Currently, there are four proposed schemes for monetizing ANS gas, two of which involve the construction of a pipeline through Canada to the Lower 48.

The first proposal, known as the Alaska Highway route, was first offered by Foothills Pipe Lines Ltd., Calgary, in the 1970s as the Alaska Natural Gas Transportation System (ANGTS) and has already received approvals from the US Federal Energy Regulation Commission and the Canadian National Energy Board. Many in the industry, including the state of Alaska and several Canadian provinces, including the Yukon Territory, strongly back the proposal.

"They are a lot further along with FERC than anybody else," explained Arlon R. Tussing, an oil and gas consultant based in Mercer Island, Wash., and a close industry observer of the various proposed routes.

The second pipeline proposal, offered by a Houston-based group of promoters, is being led by Arctic Resources Co. (ARC). The group, which has not received any government approvals yet, "are claiming to promote what looks to be the technically best proposal," Tussing commented.

The pipeline's route will run along the arctic coasts of the US and Canada, most likely from Prudhoe Bay to the Canadian Beaufort Sea and into the Mackenzie Delta, then via the Mackenzie Valley into northern Alberta.

The other two ANS gas monetization proposals involve the construction of a pipeline from the Prudhoe Bay area to tidewater in south-central Alaska for delivery into an LNG export scheme and the construction of gas-to-liquids facilities at Prudhoe Bay to create a GTL stream that could be injected into the existing Trans-Alaska Pipeline System oil pipeline.

Pipeline feasibility

The US government put its hand on the pulse of the oil and gas industry regarding an Alaskan gas pipeline most recently last September, when pipeline companies gathered to report to the US Senate energy committee that a pipeline from the North Slope to the Lower 48 would be a feasible project.

Sen. Frank Murkowski (R-Alas.), who chaired the committee, said proven ANS gas reserves are more than 35 tcf, with potential reserves of more than 10 times that.

"With prices [currently] hovering around $5/Mcf, the economics have never looked better for Alaskan gas to be delivered to an eager market in the Lower 48," he said.

Foothills Chairman Robert L. Pierce said, "We believe that the Alaska Natural Gas Transportation System can be in service and transporting Alaskan North Slope gas in the 2006-07 time frame." He said the ANGTS overland pipeline route would move the gas from Alaska to northern Alberta, from which it would be shipped to the Lower 48.

The US and Canadian governments approved the route 21 years ago, Pierce noted, and it would be less environmentally disruptive than other overland routes because it would parallel existing highways.

Forrest Hoglund, ARC chairman and CEO, said that the development and delivery of the ANS region's abundant natural gas supplies will require a "unique approach."

"Our country's track record so far on trying to tap Alaskan and other arctic natural gas reserves and bringing the gas to market has not been successful," Hoglund

said. "Over the past 25 years, technological limitations and conflicting industry and governmental interests stalled attempts to tap these reserves.

"As a result, no project has been built, and proposed solutions have proven to be uneconomical," he added.

Jerry Halvorsen, president of the Interstate Natural Gas Association of America, called the construction of a gas line "...a matter of no small importance to America in terms of our economy and our future energy security."

The top ANS producers—BP, ExxonMobil Corp., and Phillips Petroleum Co.—were also present to state their opinions. The three ANS gas producers have agreed to a joint work program focused on ways to monetize ANS gas. The initial program, which is expected to cost about $75 million, will involve the conceptual design, project cost estimating, permitting considerations, commercial structure, and overall viability of their Alaskan Gas Pipeline Project. The work program is expected to take 18 months, the companies said.

Robert Malone, BP's western region president, said BP is studying various options for moving the gas to market, including gas, natural gas liquids, and gas-to-liquids proposals. He said it would take 1 year to order materials for a gas pipeline and 3 years to build it.

"Our focus for Alaska gas is not to simply build a pipeline," Malone said. "Rather, our goal is to create a new gas exploration, development, and production industry...that sits side-by-side with the existing oil industry in Alaska."

Terry Koonce, president of ExxonMobil Production Co., told the committee, "At this time, we do not know whether the Lower 48 gas market will support the major capital expenditures required for a [gas] pipeline and when such a pipeline could be built and be in operation.

"It is worth noting that there is sufficient gas on the North Slope for multiple projects if market conditions are supportive. The prospect of building a gas-to-liquids project would not be precluded by building another project, such as a pipeline to the Lower 48."

Phillips Alaska Inc. Pres. and CEO Kevin Meyers said, "We are currently evaluating routing alternatives and plan to select a primary [pipeline] route and begin permit application by midyear 2001. During 2001, we would expect a significant effort to build external stakeholder consensus around the primary route."

Meyers added that gas sales from the line would be a possibility by 2007, provided that the company receives stakeholder consensus from both the US and Canada for a primary project as well as cooperation from both countries' governments to expedite permitting.

"Whether the pipeline route is accepted or not, it's the producers that are going to make the decision," Tussing noted. "Of the three pipeline promotion groups, Foothills is the only one that has anything to bring to the table," he said. Tussing added that the White House's new cabinet candidates—especially the Department of Energy, the Department of the Interior, and the Environmental Protection Agency—will certainly have some influence over the pipeline's routing, but that the producers are ultimately going to make the final decision.

Consultant Arlon Tussing, on prospects for an Alaska gas pipeline

"Both the politicians and the producing companies are giving the impression that something is going to be built. It seems to me that this is a real stretch.

Alaska's role

Alaska has actively participated in studying the feasibility of transporting North Slope gas to markets south. Late last year, Alaska Gov. Tony Knowles expressed his state's support for the Alaskan Highway route. He billed the idea with the phrase: 'My way is the highway." (OGJ, Dec. 4, 2000, Newsletter, p. 7).

The 1,800-mile line would be the largest private construction project in US history.

A shorter, competing route from Prudhoe Bay across the Beaufort Sea and down the Mackenzie River Delta to Alberta also has been suggested, but that route poses formidable technical, environmental, and logistical challenges, including "under-ocean (arctic) pipelines at untested pressure over never-achieved length of 400 miles," Knowles said (OGJ, Nov. 27, 2000, p. 31).

Building the massive pipeline would generate billions of dollars for the Alaskan economy, provide access to more gas for use in that state, and create spin-off industries involving the use of gas liquids, say state officials.

Knowles has pledged to spend the rest of his office term pushing to launch construction of a natural gas pipeline. He is on record in support of lowering state tax barriers to encourage such a project.

Further demonstrating his strong commitment to the line's construction, Knowles earlier this year issued an administrative order that, among other things, included:

- The creation of a "pipeline cabinet" and coordination office to centralize permitting and oversight procedures among state agencies for construction of such a pipeline.
- The introduction of an amendment that would include both gas pipeline and gas-to-liquids proposals in the state's 1998 Stranded Gas Development Act, which originally targeted only a possible LNG project.
- The issuance of a nouce seeking a $4 million appropriation to jump-start construction of a gas pipeline; the money would help fund initial work on permits and rights-of-way.

The administrative order "establishes a fully integrated state organization that utilizes existing government structure and processes to the maximum extent possible, minimizes impacts to existing agency functions, and promotes internal alignment of state agencies," the governor said.

The objective is a streamlined, one-stop state permitting facility that will be in place if a company decides to build a pipeline to move Alaskan gas to markets in the contiguous US.

"Alaska's natural gas can be the foundation of a 21st century economy of high-tech resource development, high-tech manufacturing, and new business growth and quality of life based on affordable clean energy. With known and estimated [Alaskan] reserves of up to 100 tcf, natural gas can fuel our economy for the next 50-70 years, but to start this mammoth project, we need a single point of contact," Knowles said.

The official pipeline coordinator will submit periodic progress reports to the governor and members of his gas pipeline cabinet, summarizing goals, objectives, and accomplishments in building the proposed pipeline.

In his state of the state address, given earlier this year, Knowles made it clear that a method to get North Slope natural gas to southern markets was a top priority.

"I believe Alaskans can be on the working end of a shovel building a natural gas pipeline within 2 years," he said. "After 2 decades of false starts and broken dreams, the economic and political stars are finally aligned in our favor. Natural gas is the fuel of the 21st century.

"We're working hard to keep this project on track—conferring with Alaska's major oil and gas producers; cosponsoring a natural gas summit in America's heartland; listening to Alaskans.

"And I'll soon appoint the governor's Natural Gas Policy Council to ensure Alaskans realize the maximum benefits from this project. This includes feedstock for new industries, community access to gas, and future gas projects."

Will it get built?

Although there are many who are backing the construction of the gas line from the North Slope, still others can't help but be wary of how long it has taken to get to this point. Tussing noted that with a project with such a large economy of scale, the long-term cost must truly justify its construction.

"Both the politicians and the producing companies are giving the impression that something is going to be built," he said. "It seems to me that this is a real stretch. It wasn't much more than a year ago that the price out of Alberta was less than $1 [/Mcf] (US). And, under those circumstances, to be competitive, you've got to bring the gas as far as Alberta with $1—what kind of netback [would that provide]? We now have the highest market prices that we've seen since the evolution of the market price for gas, but we've also got the most volatile situation—nothing has happened to the fundamentals," Tussing observed.

As for when such a project would be completed, Tussing said, "It could be any time and no time."

Holding up the progress, Tussing said, is the fact that "the numbers just don't work out. Unless you're convinced that there has been a major, permanent structural shift—that there has been some change in the fundamentals between 1999 and 2000—the safest thing would be to assume that the fundamentals are going to be the same, roughly on the average that they have been over the previous 15 years. There's no basis for a gas pipeline either to the Lower 48 or to an LNG terminal," he said.

Opening ANWR

As for the likelihood that Bush would attempt to open up part or all of ANWR to exploration, Tussing said, "I can't foresee of the Bush administration—no matter how strongly they felt about it—collecting or being willing to cash in enough chips to do it. There's no popular support in the United States for it."

Tussing added that within Alaska, however, there is strong support for such a proposal. "Drilling is now prohibited without an act of Congress. There are members of Congress, maybe a third of the Senate under major pressure by the administration would vote to open it, but there isn't any national consensus for it," he said.

"The Democrats in Congress would love to have an early fight. It's really the only high-profile wedge issue in the environmental arena. ANWR is overwhelmingly an emotional issue. There's no way that the decision is going to affect the gas line or have any impact on national security." ✦

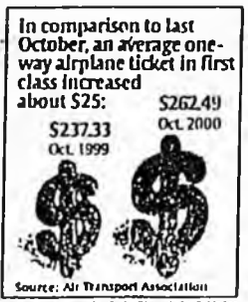
Business travel

By David Field

Two: Southwest adds a daily non-stop April 1 between Chicago Midway and Fort Lauderdale, for a total of two daily, and one between Midway and Las Vegas, for three a day.

Doubles: TWA will give double Aviators frequent-flier miles Jan. 31-April 1 on three flights starting Jan. 31 between Miami and San Juan, Puerto Rico. Register for offer 01642 at 800-325-4815 or at twa.com.

In comparison to last October, an average one-way airplane ticket in first class increased about $25:



Source: Air Transport Association

By Quin Tian, USA TODAY

Triples: Thrifty offers triple the usual 50 miles per rental day to Alaska Airlines Mileage Plan members Jan. 1-April 1. Two-day minimum, 14-day maximum rental.

Growth: Ten-month-old JetBlue carried its 1 millionth passenger Thursday.

Plan: Delta will begin daily non-stops between Atlanta Hartsfield and Buenos Aires, Argentina, in April.

More power! Tech firms act to avoid blackouts

Steps include backup generators, building substations

By Edward Iwata
USA TODAY

PALO ALTO, Calif. — As California's power crisis worsens, high-tech firms in Silicon Valley are taking steps to defend themselves against potentially devastating blackouts.

"Electricity is the oxygen of Silicon Valley," says Karl Stahlkopf, vice president at the Electric Power Research Institute in Palo Alto.

This year, state authorities have declared energy alerts on a record 52 days. California declares alerts when power reserves fall dangerously below 7% of the state's capacity. To stave off energy outages and emergencies:

- About 200 Silicon Valley firms, from Intel to eBay, have agreed with utilities to voluntarily cut their energy use 10% or more during "rolling blackouts" imposed by utilities to lighten the load on the state's electrical system. This season, there have not been rolling blackouts. If there were, the tech firms would save up to 400 megawatts of energy — the equivalent of 400,000 households.

In return, the companies get rate discounts of 10% to 20% all year. Or they drop lower on the list of customers who may lose power during mandatory blackouts. "They can take more control over their destiny," says spokesman Larry Owens at Silicon Valley Power.

- Virtually every high-tech firm and chipmaking plant has backup generators to keep safety and office equipment running. Oracle recently built a $6 million substation to power its corporate offices in case of disaster.
- Learning from earthquakes and last year's Y2K scare, chipmaker LSI Logic has a "SWAT team" of managers and security people ready to jump on emergencies. They can communicate worldwide via shortwave radios and satellite phones, spokesman Kevin Brett says.

California had its first-ever statewide Stage 3 alert Dec. 7. In Stage 3, the severest warning, power may be cut to any customer at any time. In Stage 2, power may be cut to large business customers. During Stage 1, customers are asked to reduce electricity use.

In June, record heat waves and overheated transmission lines led energy officials to curtail power to parts of the San Francisco Bay Area for several days. About 100,000 business and residential customers lost power for an hour or two each time.

Silicon Valley firms suffered $100 million in lost production during the outages, says spokeswoman Michelle Montague-Bruno of the Silicon Valley Manufacturers Association.

Tech firms need more power than others because they run huge data processing rooms, chipmaking plants and research labs. Electricity demand in Silicon Valley grew 12% last year, the statewide average was 3%, Stahlkopf says.

If the government and utilities don't start building a new electrical infrastructure in the next five years, Stahlkopf says, the crisis will spread.

▸ Bush pushes for more oil, 9A

Cover story

More companies

Silicon Valley cranks up conservation

As energy rates soar 40%, companies dim lights, buy more efficient equipment

By Jon Swartz
USA TODAY

SAN FRANCISCO — Faced with the largest electricity rate increase in state history and the certainty of "rolling blackouts" when air conditioners crank up this summer, Silicon Valley firms are pulling out the stops to conserve energy.

▸ **Hewlett-Packard.** It has one energy "war room," and is building three more this year to monitor power consumption of 12,000 employees in 41 buildings in five San Francisco Bay Area cities. By tracking use closely, H-P could see where it could cut energy use. For example, it dims lights or adjusts temperatures when statewide electricity supplies are running dangerously low. H-P also is replacing $500,000 refrigerator units that cool computer centers with more efficient models.

▸ **Roche Pharmaceuticals.** Stung by an hour-long outage March 19, the 1,200-person crew cut energy use 20% by urging workers to turn off computers, lights, even labs during peak energy usage.

▸ **Cisco Systems.** The networking giant is trimming electricity use an additional 10%, on top of earlier cutbacks, by using more energy-efficient equipment.

California regulators Tuesday approved monthly electricity rate increases of about 40%. The state already suffered rolling blackouts this winter, and more are likely in the summer heat.

With the Valley already living on the edge of darkness, though, the rapid growth of "server farms" — sprawling computer complexes that handle Internet traffic — threaten to tax the state's fragile power system even more.

"Energy use is now at a level the state expected in 2015," says analyst Jarad Carleton of Frost & Sullivan. "A lot of that, specifically the growth of server farms, is tied to tech's rapid expansion."

San Jose officials next week are set to approve the world's largest server farm, a $1 billion project that could guzzle the equivalent of energy for 150,000 homes. The 2.2 million square-foot facility, overseen by U.S. DataPort, would handle more than 10% of Internet traffic worldwide when it opens in 2002.

"The project's scale, in light of the state's energy problems, is troubling to say the least," says Michael Stanley-Jones of the Silicon Valley Toxics Coalition.

U.S. DataPort CEO Grant Sedgwick counters that the center will create 700 jobs and generate $70 million over 10 years in property and utility taxes. It hopes to build its own power plant, he says.

Exodus Communications, which operates 14 data centers in California and 42 nationwide, already has plans to build its own power plant in the Valley.

Electronics manufacturer Solectron is exploring a more drastic move. It runs 22 plants in the Valley and may move some operations out of state.

"In the end, how do you remain competitive in this environment?" spokesman Kevin Whalen says.

3/29/01 USA TODAY

A troubled veneer plant in Ketchikan was tossed a life ring this week.

The Ketchikan Borough Assembly voted 5-2 Monday night in favor of negotiating up to $2.5 million in new financing for Gateway Forest Products, which filed for Chapter 11 bankruptcy protection last month.

The assembly will meet again today to consider the borough with funds appropriated by Congress to ease Southeast Alaska's economic woes from a downturn in the timber industry.

A standing-room-only crowd turned out for Monday's night meeting. Many of the roughly 18 people who testified about Gateway asked the assembly to offer it more financial assistance and to assume the debt the company has racked up with local companies, said borough

real inconvenience," he said.

The Bankruptcy Court fil stopped payment on money owe up to that date, although the judge reorganization has allowed the co cash on hand to pay employees working, Bloom said.

See Page E-

SPOTLIGHT: WORKPLACE

Bush repeals Clinton's ergonomics regulat

■ **POLICY:** President says OSHA rules were too costly and broad.

By SANDRA SOBIERAJ
The Associated Press

WASHINGTON — President Bush on Tuesday signed a repeal of new workplace safety regulations, saying they posed "overwhelming compliance challenges" for businesses.

The measure, revoking rules issued late in the Clinton administration, was the first substantive policy that Bush signed into law.

The rules from the Occupational Safety and Health Administration were aimed at preventing carpal tunnel syndrome, tendinitis and other health problems associated with repetitive motion, awkward postures, contact stress and the like. If such injuries were reported, adjustments to work stations would have been required.

Businesses, which were given until October to comply, said the required changes would cost them as much as $100 billion a year.

Bush has asked Labor Secretary Elaine Chao to devise a cheaper way of addressing workplace safety.

The president signed the bill in the Roosevelt Room with only a few spectators on hand.

"There needs to be a balance between and an understanding of the costs and benefits associated with federal regulations," Bush said in a statement. "The ergonomics rule would have cost both large and small employers billions of dollars and presented employers with overwhelming compliance challenges."

Earlier Tuesday, women business lea signing the legislatic represented change " is positive."

"The rule would h bureaucratic one-siz tion to a broad range and workers — not ment at work," Bush

He held the legisl victory for himse Republican-controlle Last week, in his first

See Page E-

Inside Alaska business

California power woes hit locally

Rolling blackouts in California because of power shortages have thrown the off switch for at least one Alaska company. Kay Cashman, publisher of Petroleum News Alaska, said her Web site — petroleumnewsalaska.com — went down Tuesday for at least several hours because its host computer is in Palo Alto, Calif. An outage happened once before this year, she said. "It's frustrating," Cashman said. Anchorage-based Petroleum News plans to move its host-computer site to Haines, where its Web master resides, she said.

NANA profits again top $5 million

NANA Regional Corp. posted a $5.1 million profit in 2000, down 2.5 percent from a year earlier, according to the company's annual report. It marks the third year in a row the Kotzebue-based Native regional corporation made a profit in excess of $5 million. The corporation, which represents Inupiats from Northwest Alaska, reported revenue of $176 million, up 30 percent. NANA has just more than 10,000 shareholders and owns 1.7 million acres of surface estate and 1.8 million of subsurface. The company has more than a dozen subsidiaries in the oil field services, mining support services, real estate, tourism engineering and other ventures. NANA's net royalties from its huge Red Dog lead and zinc increased to $4.4 million in 2000, up from $3 million the year before, the annual report says. The NANA board has set a goal of achieving 15 percent annual growth and $10 million in profits by 2005, according to the company.

Daily News wire reports

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Tuesday closing p
Coast open mark

TUESDAY STOCKS: ▼ Dow Jones: **-238.35 to 9,720.76** ▼ NASDAQ: **-93.74 to 1,857.44** ▼ S&P 50

Wednesday February 14, 10:42 am Eastern Time

Press Release

SOURCE: Edison Electric Institute

Power Companies, Developers Discuss Impact of Internet Data Centers; Along With Business Opportunities, Server Farms Pose Huge Power Demands

WASHINGTON, Feb. 14 /PRNewswire/ -- The growth of Internet data centers -- buildings that house computer servers and networking equipment and can consume as much power as a small city -- were the focus of a just-concluded conference hosted by Edison Electric Institute. The event, Electric Utilities and Internet Hotels/Data Centers: Building the Infrastructure for the New Economy, was the first gathering of all parties, including electric utilities, zoning officials, data center developers, and consulting engineers to scrutinize the unique challenges and opportunities that data centers pose. A follow-up conference will be held in early fall.

Internet data centers, also called server farms, Internet hotels, or Telco hotels, store the computer servers and networking equipment that manage the Internet's traffic. Located near crucial fiber-optic cable networks that have the broadband capacity to handle their large amounts of data, the data centers consist of little more than racks and racks of computers and the air conditioners needed to keep them cool. The centers, however, operating 24/7, demand absolutely reliable power and lots of it. Compared with the 5-10 watts per square foot that a typical office building requires, data centers may need between 50 to 200 watts a square foot, and can be as big as three football fields.

"Although electric utilities welcome the increased load a data center represents," said EEI's Steve Kiesner, Director, National Accounts. "We often have to make huge investments in generation and transmission infrastructure to support them. How these will be paid for was a key discussion topic."

Kiesner went on to point out that many factors will affect the power needs of an Internet hotel. A developer may come in and ask for five megawatts or 10. But as the center starts out, its business may warrant only one to two megawatts. After that, business will probably fluctuate, and along with it, the center's need for power. Another variable is that as computer equipment becomes smaller and more energy efficient, the future power estimates may never be realized.

"The many questions Internet data centers pose require that we get input from all sides," said EEI's Group Director of Energy Services, Michael McGrath. "Developers want power to be supplied quickly and 99.9999 percent reliable. Utilities want safety concerns addressed, financial protections for their other customers, and some security on their investment."

A follow-up conference will take place early this fall. In preparation, the group planned a number action items. Among them were setting up a task force and list server to maintain a dialogue on issues as they arise. One key action item for the new task force will be to meet with utility regulators and discuss the potential effect of these data centers on regional power markets. Another item will be to compile actual facility performance profiles to prevent over design on a utility's part.

"This conference was a great start," said McGrath. "As we move forward, we all look toward working together to ensure a smooth transition with the least amount of impact on the power grid and without slowing down the development process."

For more information about EEI's Internet data center initiative, please contact Steve Kiesner at 202-508-5414, skiesner@eei.org, or Charles Foster at 202-508-5554, cfoster@eei.org.

Edison Electric Institute (EEI) is the association of United States investor-owned electric utilities and industry affiliates and associates worldwide. Its domestic members generate approximately three-quarters of all the electricity generated by electric utilities in the country and service about 70 percent of all ultimate customers in the nation.

SOURCE: Edison Electric Institute

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High-tech operations could black out Seattle

New 'server farms' to handle Internet could drain system

The Associated Press

BELLEVUE, Wash. — More than two dozen "server farms" — data centers that handle the traffic of the Internet — are planned for the Seattle area, another sign of the region's high-tech boom and prosperity.

But there's a price: Collectively, the farms will need nearly as much electricity as the entire city of Seattle, at a time when the Northwest already faces nearly a 1-in-4 chance of power outages.

"This is just a massive load that was unforeseen by anybody," said Steve Secrest, director of rates and regulations for Puget Sound Energy, the Bellevue-based utility that provides electricity to much of western Washington.

It takes 1,200 megawatts to keep things humming in Seattle, which has its own public utility. Each server farm requires 30 megawatts to 50 megawatts. By comparison, it takes about 30 megawatts to power the entire University of Washington.

The Northwest Power Planning Council, which tries to balance wildlife and fish protection with power generation needs in Washington, Oregon, Idaho and Montana, had been worried about the region's generating capacity even without the server farms.

Based on a study completed in March, the council predicted a 24 percent chance of winter outages in the four-state area by 2003.

"The concept of server farms wasn't on the horizon (then) ... so we didn't include it," council spokesman John Harrison told the Eastside Journal, the paper said Tuesday.

Even without them, the study concluded, there is a need for the "equivalent of 3,000 megawatts" in new generating capacity to ensure no more than a 5 percent chance of blackouts for the region, a power-industry standard.

Capacity to meet that forecast can't be developed in time, Harrison said. The only new generating plants scheduled to come on line by 2003 are two natural gas-powered plants, together producing 600 megawatts a day, he said.

"We would still have a 2,400-megawatt problem," Harrison said.

Server farms are "definitely a concern, and whether this is going to be the straw that breaks the camel's back is a good question," said Tony Usibelli, a senior energy policy specialist with the state Community Trade and Economic Development Department.

No regulatory mechanism would allow Seattle City Light or Puget Sound Energy to just say no to the server farms.

Utilities have an "obligation to serve," Usibelli said.

Level 3 will build giant technical hub outside Boston

By Jerd Smith
News Staff Writer

Broomfield-based Level 3 Communications will build a 500,000-square-foot technical hub outside Boston this year to meet skyrocketing demand for space from Internet service providers and others.

Level 3 already operates mega centers in New York, Boston and Silicon Valley and plans a third in Hong Kong this year, said spokeswoman Kathy Sattem. Level 3 operates 38 so-called gateway centers nationwide. They are used by Internet service providers and others as switching stations and technical entryways to phone networks and the Internet.

A 96,000-square-foot center just finished in Silicon Valley is already sold out, Sattem said.

"Our expansion in New England and other areas around the country is a direct result of the continuing growth of the Internet economy," said Level 3 President Kevin O'Hara.

The centers serve as portals to Level 3's national and international broadband network. Level 3 already has 4.4 million square feet of technical space and plans to have 6.5 million square feet.

9/7/2000 RM News

Qwest launches CyberCenter in Highlands Ranch

By Jeff Smith
News Staff Writer

When MSHOW.com organized a live Web conference for Qwest Communications Inc. two weeks ago, the Denver company turned to Qwest itself for help in "hosting" the event.

Servers, high-speed routers and other equipment at Qwest's new CyberCenter in Highlands Ranch were used to pipe video and audio onto the Internet from an analyst meeting in New York.

"You create a lot of traffic when you video-stream 10 gigabytes in five minutes to 1,000 people," said Robert Ogdon, MSHOW.com's chairman and chief executive officer. But this event, he said, "was seamless" for those who watched on the Web.

Qwest is betting tens of millions of dollars that hundreds of other companies will take advantage of the technology offered at its center in the Denver area.

The center, formally launched Wednesday, is designed to help companies with information technology applications ranging from Web content distribution to data management.

The facility is Qwest's 12th in a U.S. rollout that is planned to reach 24 by the end of 2001. The technology is impressive: Routers are capable of sending video, voice and data out to the information highway at speeds of up to 2.4 gigabits per second.

That's roughly equivalent to 45 million simultaneous Internet connections at a standard modem speed of 56 kilobits per second.

And despite the rapid increase in the number of similar cyber centers across the country, company officials are bullish.

"We are not concerned that there is overbuilding in the industry," said Richard L. Weston, senior vice president of Qwest Internet Solutions. "We see insatiable demand."

But while space in a previous cyber center in California was sold out in 13 days, Qwest officials estimate the company will probably "fill" the Highlands Ranch center in about a year.

"Companies may not put their whole (information technology) applications on the Web," Weston said, but may start with such applications as e-mail and sales management.

The center has racks available for up to 100,000 servers.

Company officials declined to disclose current or potential customers, but nationally the telecommunications company's business customer base includes 40 of the Fortune 50, leading dot.com companies such as Amazon.com, and top Internet providers such as AOL and Akamai.

To safeguard customer operations, Qwest is providing 24-hour security and video surveillance of all entrances and aisles. Just to reach the area where the servers are housed requires placing the back of one's hand through a "biometric" scanner that matches the scan to one's photo ID. Server racks inside are locked for customer protection.

The company has built in redundancies, including two backup connections to the Internet. A staff of 19 has been hired to monitor operations and troubleshoot.

The center also has backup for power, heating, ventilation, air conditioning and fire suppression.

Business travel

By David Field

Two: Southwest adds a daily non-stop April 1 between Chicago Midway and Fort Lauderdale, for a total of two daily, and one between Midway and Las Vegas, for three a day.

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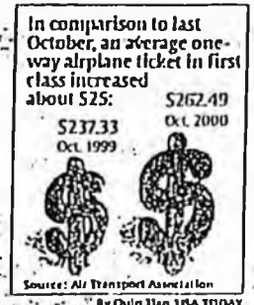

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USA TODAY

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▸ Bush pushes for more oil, 9A

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11/28 10:20

Computers to Boost Energy Use More Than Forecast (Update1)

By Bradley Keoun

Washington, Nov. 28 (Bloomberg) -- Computers and electronic equipment are driving growth in U.S. energy usage faster than the government forecast a year ago, according to a report published today by the Department of Energy.

Electricity demand during the next two decades is expected to rise by 1.8 percent a year, the department said in an annual energy outlook, faster than the 1.3 percent expected in last year's report.

The revision came after a "reevaluation of the potential for growth in electricity use for a variety of residential and commercial appliances and equipment, including personal computers," the report said.

Electricity prices will decline 10 percent by 2020 as deregulation and increased competition in the electric industry lead to cuts in operating, maintenance and administrative costs, the report said.

Total residential energy usage was projected to grow by 1.2 percent a year to 24.4 quadrillion British thermal units in 2020, up from the 23 quadrillion forecast a year ago. The most rapid growth will come from computers, electronic equipment and appliances.

Commercial energy usage will grow by 1.4 percent a year to 20.8 quadrillion Btu, driven mostly by rising demand from computers, office equipment and telecommunications devices.

Growing Energy Demand

Overall, the nation's total energy usage is expected to grow by 1.3 percent a year to 127 quadrillion Btu in 2020. That's up about 30 percent from this year's usage of an estimated 97.6 quadrillion.

U.S. oil demand was projected to grow by 1.3 percent a year, led by growth in transportation, which accounts for 70 percent of U.S. petroleum consumption.

"Higher light-duty vehicle travel in the forecast is partially offset by higher vehicle efficiency," the report said.

The share of U.S. petroleum demand met by imports will increase to 64 percent in 2020 from 51 percent in 1999.

Higher oil output from the Organization of Petroleum Exporting Countries and from non-OPEC countries will meet growing demand from the United States, the Middle East, the former Soviet Union, China and the Pacific Rim.

Falling Oil Prices

World oil prices in 1999 dollars are expected to average $22.33 a barrel in 2020, about the same as forecast last year. Oil prices this year are expected to average about $27.60, up from $17.35 last year because of production cutbacks last year by OPEC and several non-OPEC nations.

Oil prices are expected to fall to $22.50 a barrel by 2003 as supply catches up with demand.

Natural gas prices were expected to be 10 percent higher in 2020 than the agency forecast last year, as new supplies from domestic wells and Canadian imports fail to keep pace with rising consumption by power producers.

Natural gas prices were expected to average about $3.30 per thousand cubic feet ($3.21 per million Btu) in 2000 and 2001, up about 60 percent from last year's $2.08. Prices are expected to decline through 2004 as new technology leads to improvements in drilling and the efficiency of completed wells.

Power Producers

Prices are expected to average $3.13 per thousand cubic feet in 2020 as demand from power producers grows. The amount of gas used in electricity generation is expected to triple between 1999 and 2000.

The Energy Department revised its estimate for annual U.S. natural gas demand in 2020 to 34.7 trillion cubic feet, up 10 percent from last year. That means natural gas demand will grow 2.3 percent a year from an estimated 22.74 trillion cubic feet this year.

The share of total U.S. electricity generation attributed to natural gas was expected to increase to 36 percent in 2020 from 16 percent in 1999, as power producers seek the cleanest-burning fuel available.

About 27 percent of the nation's 97 gigawatts of nuclear generating capacity will be retired by 2020, and no new nuclear power plants are planned.

SECTION B

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MONDAY • MARCH 27 • 2000

Qwest, IBM form $5 billion alliance

oint venture will focus on Web-hosting centers

y Jerd Smith

ews Staff Writer

Qwest Communications moved Sunday accelerate its lucrative technology services business, joining forces with IBM in a $5 billion venture to build and operate 28 Web hosting centers nationwide.

Denver-based Qwest, which owns a 25,500-mile high-speed, fiber-optic network, already operates seven centers nationwide, with another seven due to be operating by the end of the year. Under the terms of its agreement with IBM, another 28 centers will be built during the next three years.

Web hosting centers provide the software, hardware and networking needed to operate Web sites. Though huge online companies, such as Amazon.com, host their own Web sites, millions of other medium and small businesses hire outside companies to provide the physical space, operational support and Internet access that keep their sites open for business.

Qwest and IBM say their partnership will allow both companies to cash in on the demand these businesses are generating.

"Our alliance with Qwest demonstrates how leaders in the information technology

See QWEST on 12B

Qwest, IBM to cash in on demand

QWEST from 1B

and Internet communications industries can collaborate to help companies worldwide become e-businesses," Doug Elix, IBM senior vice president of Global Services, said in a statement Sunday.

"This is a great deal for both companies," said Jeanne Schaaf, a network analyst at Boston-based Forrester Research.

Qwest provides long-distance phone and Internet access services. The young company, in the process of merging with Denver-based U S West, has been pushing hard to generate more business for its new network.

The IBM partnership will help do that, said Qwest spokeswoman Jane Morrissey. Under the terms of the agreement, IBM will buy about $2.5 billion worth of services from Qwest during the next seven years, with Qwest paying IBM a similar amount to build the centers and provide technical support.

Qwest will be responsible for overall management of the centers.

"This is the largest commercial venture we've done," Morrissey said.

Forrester's Schaaf said the relationship with IBM will give Qwest access to Big Blue's considerable industry contacts and e-commerce expertise.

"It gives Qwest a great opportunity to work with IBM and some of its higher-level clients," she said.

The Web hosting industry is one of the fastest-growing in the technology world. Forrester estimates that the revenue generated by Web hosting will reach $14.6 billion by 2003, up from $2 billion in 1999.

Qwest, like other companies, has been struggling to meet demand for Web-hosting services, with its seven existing centers filling within weeks of being finished.

Joining forces with IBM will allow Qwest to offer more services faster, said Lew Wilks, president of Qwest's Internet and multimedia markets division, in a statement Sunday.

"We can improve customers' financial performance, lower their capital costs and cut the time needed to introduce new e-business services," he said.

Under the new agreement, four Web hosting centers will be built this year — one each in Dallas; Philadelphia; Sterling, Va.; and San Jose, Calif.

Additional centers are planned in Denver; Atlanta; Austin, Texas; Boston; Chicago; Los Angeles; Washington, D.C.; New York City; Phoenix; Seattle; and another near San Jose in the Silicon Valley.

Qwest has come under fire this year from technology analysts who have been concerned that the company has been distracted from its focus on new technology businesses by the merger with U S West.

But Qwest officials said Sunday the IBM joint venture should allay some concerns.

Monday, Ma

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MONDAY

Denver Metro Chamb... small business start... p.m., 1445 Market St. (303) 620 8076.
Colorado Association... Boulder Unit, monthly ... Monday of each month, ... Lopez & Associates, 15... E. Travis (303) 494 92...
Downtown Toastmasters, noon, The Broker Restau... Lunch: $5. Info: (303) ...
Skyline Toastmasters, ... 6:45 p.m., South Grant ... Church, 1700 S. Grant ... 0469.
Titan Toastmasters, ... p.m., Country Buffet, ... Drive. Info: (303) 971 ...

TUESDAY

Rocky Mountain Chapter of ... Government Meeting Professio... meeting, ... Your Boss Day, 11:30 a.m. ... Holiday Inn Southeast, ... meeting planners. $25 ... Info: (303) 402 7777.
Norwest Mortgage and Jefferso... Association of Realtors, ... buyer seminar, 5:30 9:30 p.m. ... Wadsworth Blvd. Reservations ... or Faye (303) 399 31...
World Trade Center Denver, ... "Introduction to World Trade," ... p.m., 1625 Broadway, ... members, $125 nonmembers ... 592 5757.
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SECTION B

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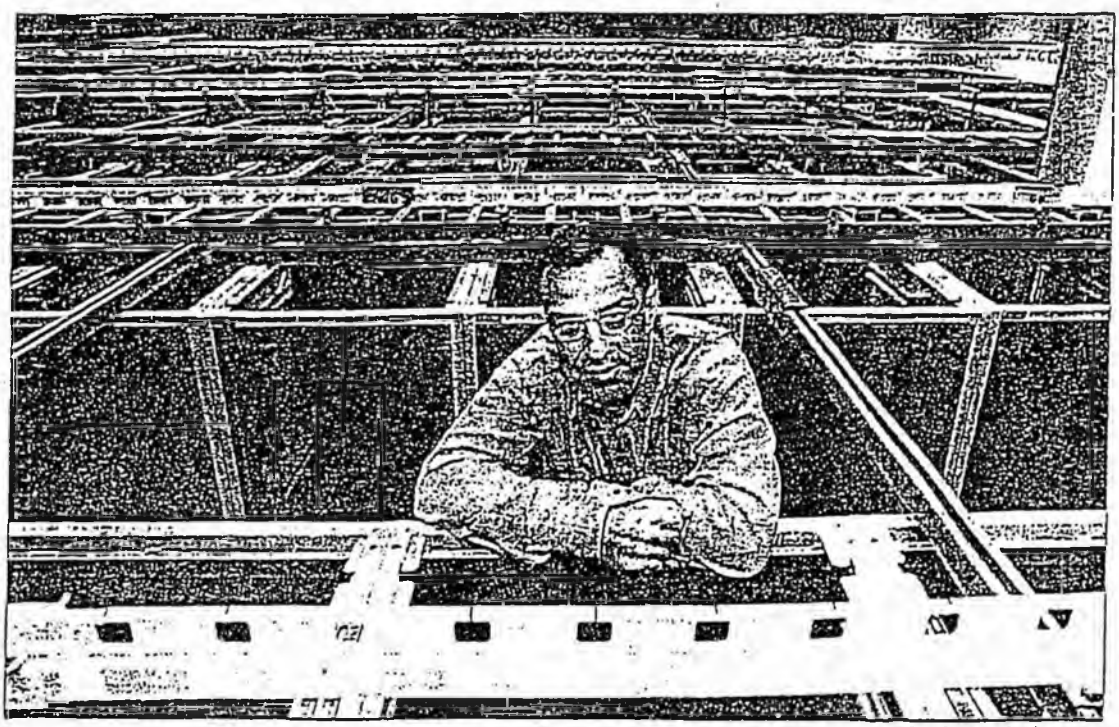
MONDAY • AUGUST 28 • 2000

WIRED for GROWTH

From left, Nupremis employees Steve Gaines, Karl Niemann and Jeff Baer monitor the company's network at the Nupremis network operations center in Boulder. Nupremis announced plans last month to open 20 data centers globally by the end of 2001.

Nupremis



Steve Groer/News Staff Photographer

David Gandini, FirstWorld Communications' chief operating officer, stands in the Arapahoe County company's collocation center. "There are a lot of companies that have made statements about building and going forward, but we still feel there is a tremendous shortage of data center space across the country today," he says.

Data centers proliferate as companies try to meet mushrooming demand for Internet services

By Kris Hudson
News Staff Writer

Chuck Cadle peered through the bulletproof glass that separated him from the sterile, white room filled with an armada of black, refrigerator-sized computer cabinets.

Cadle, chief executive officer of Boulder's Nupremis Inc., is not allowed inside. Only a few of the company's technicians are allowed to enter the data center to tend to its equipment and the vast network of cables and wires.

Data centers are the present and future of the Internet. They're high-powered, highly secure data havens where Internet companies can power their online operations without fear of disruption. They're also big business, representing a multibillion-dollar industry that has attracted some of high-tech's biggest names and several Colorado upstarts like Nupremis.

"It's the Fort Knox of data centers," Cadle said, standing outside Nupremis' data center Friday. "If you've got a mission-critical application, you don't want it to go down. You want it to be highly reliable . . . and secure."

A card-scanner system allows only authorized workers into the data center. Its 68 cabinets — stocked with Compaq servers and data-storage devices connected by an intricate web of cables snaking below the room's raised floor and suspended from its ceiling — are kept in a temperature- and humidity-controlled environment. A fire-suppression system is programmed to snuff out any flicker of flame.

Equally secure is the Nupremis network operations center, where a few technicians monitor the company's network on screens stacked three high and 12 across. If something goes wrong or a system nears capacity in this data center or any of the eight Nupremis plans to open this year, workers will know instantly. In addition to the standard firewall safeguards, the company is installing intrusion-detection software to thwart hackers.

This is what it takes to house customers' Web operations in the digital economy, where the flow of data is a lifeblood and downtime is a slow death.

See DATA CENTERS on 8B

Study rates countries' high-tech readiness

In key areas, even some major powers don't foster expansion

By D. Ian Hopper
Associated Press

WASHINGTON — Many countries are a long way from having the infrastructure to support technology companies, and economic expansion will stagnate without necessary improvements, according to a report released last week.

The report, prepared by officials responsible for worldwide Y2K readiness last year, rates 42 nations in the areas of connectivity, technological leadership, information security, worker training and business climate. Twenty-three, including China, Russia and South Africa, require substantial improvement in at least two areas before technology companies and governmental tech efforts can flourish.

"The networked world is under construction," said Bruce W. McConnell, head of McConnell International LLC, a technology consulting firm. "Smart companies will get in on the ground floor, but they should wear hard hats. The foundations are still unfinished. Many countries have not yet created the conditions that permit full participation in the digital economy."

McConnell and the firm's other owner, Roslyn Docktor, led the International Y2K Cooperation Center's global Y2K readiness effort.

Estonia and Taiwan have the best ratings among all countries. Both have high ratings in governmental leadership, worker training and business climate.

Central and Southern Europe — such as Bulgaria, the Czech Republic, Italy and Hungary — are the best-rated regions in the report.

Nations there were found to have skilled and educated workers, legal protections and computer security laws that are more advanced than in many other regions.

Also, the report said,

See READINESS on 12B

Shakeout predicted in fast-growing industry

DATA CENTER from 1B

"It's really the maturation of the Web," said Karl Niemann, the company's director of network operations. "It's moved from an ad hoc thing to something you run your business on. And when you run your business on it, you need reliability and availability."

Several types of data centers exist. One version, often called a collocation facility or gateway, is set up by major telecommunications carriers to serve as a center where Internet companies can gain access to the carriers' international networks. Typically, the carrier provides little beyond floor space and network access, relying on other companies to meet customers' additional needs.

A traditional data center offers more services than a collocation facility. A data-center operator often will lease such equipment as servers and storage devices to customers. Some even resell enterprise software systems in a pay-as-you-go format known as application service provision.

In short, data center operators act as a one-stop shop for customers, providing network access from several carriers, on-demand software and information-technology support.

And then there's a confusing twist: Data centers can be set up inside collocation facilities.

The former is more lucrative than the latter. Boston-based market research firm The Yankee Group reports that carriers receive average monthly revenue of $50 per square foot for bare-bones collocation services. In contrast, data-center operators charge an average of $3,000 per square foot monthly for the numerous services they offer in addition to floor space and network access. For broad, complex offerings, that figure can climb to $10,000 per square foot.

Analysts predict that, sooner rather than later, collocation services will become a commodity as the supply of data center space catches up with the demand, and only the data-center operators that provide additional services will make money.

"Delivering quality of service at a reasonable price is going to be big," said David Tapper, an analyst with research firm IDC.

All told, Yankee Group values the broader market of "netsourcing" — which includes the outsourcing of Web hosting, network, integration and support services — at $9.1 billion this year, growing to $46.7 billion by 2003.

Thus, it's not hard to see why so many companies have entered the data center market. The major players include well-known names such as Exodus Communications, Intel Corp., EDS, Hewlett-Packard Co., Level 3 Communications and partnerships of AT&T Corp.-British Telecom and Qwest-IBM.

The industry has a strong foothold in Colorado, where at least seven companies operate some form of data center for use by Internet companies. Level 3 and Qwest are among the largest collocation providers. Arapahoe County-based Verio Inc. hosts more than 400,000 Web sites at its centers. FirstWorld Communications and InFlow Inc. operate several data centers and intend to open more. And this year, two new companies — Nuprernis and Relera — have announced plans to open dozens of data centers.

"Right now, the market is so open. There's so much opportunity," said Dave Gaudini, chief operating officer of Arapahoe County-based FirstWorld. "There are a lot of companies that have made statements about building and going forward, but we still feel there is a tremendous shortage of data center space across the country today."

Steve Peterson, Rocky Mountain News Photographer

Chief Executive Officer Eric Hood, left, and Chief Operating Officer Ron Cooper of Relera relax in their Arapahoe County office. The startup announced this month that it will open 25 data centers in the next 18 months.

Backed by Denver financier Donald Sturm, FirstWorld operates eight data centers and plans to open two more by October. The company offers its customers network access provided by multiple carriers, third-party software, third-party data storage and add-on services, including remote monitoring. FirstWorld executives say the company holds an advantage over industry newcomers because it already has several data centers.

However, FirstWorld has problems.

Last month, the company told investors its revenue and margins for the balance of the year will fall below predicted levels because of slow sales and high costs. Along with the financial shortfall, FirstWorld announced the resignation of Chief Executive Officer Sheldon Ohringer. The company intends to right itself by divesting auxiliary businesses to focus on its data centers.

Even so, FirstWorld's stock plummeted, and the company became the target of numerous shareholder lawsuits, which it says are groundless.

"We feel extremely comfortable and very excited about the business we're in," Gaudini said. "We are focused around the business in which we will be successful. Don Sturm is committed to the business. We have the right partnerships in place."

InFlow, founded in 1997 by two Air Force Academy graduates, operates 11 data centers. The company provides data center space, network access and information-technology services. Like FirstWorld, InFlow specializes in serving small and medium-sized businesses.

In the past 16 months, InFlow has raised $225 million in venture financing to fuel its expansion. The company filed in February to sell its stock to the public but has not begun doing so.

Relera burst onto the scene this month with the announcement it will open 25 data centers in the next 18 months. Launched earlier this year, the startup has generated significant momentum. It is led by Chief Executive Officer Eric Hood, former vice president for engineering and operations at Verio, and chief operating officer Ron Cooper, former chief operating officer of Medialine.

In the past six months, Relera has collected $306 million in venture financing from Denver-based Telecom Partners, Navis Partners, Columbia Capital Partners, Bank of America Capital Partners, Crescendo Ventures, CIBC, Broadband Venture Partners and Morgan Stanley Dean Witter. And last week, Relera unveiled plans to open data centers in 11 Level 3 collocation facilities.

Arapahoe County-based Relera intends to offer data center space, network access from multiple suppliers and IT support. The company will not provide servers or software.

"The watchword in business today is *speed to market*," Cooper said. "And we help our customers achieve their speed-to-market goals by providing the infrastructure and services they need but don't have to develop themselves."

Nuprernis announced its plans last month to open 70 data centers globally by the end of 2001. The 8-month-old company is a "roll-up" of Boulder e-business integrator Centera, Hungarian application service provider InterWave and wireless local network company NewLinkCom. The three were bought and combined by Callahan Associates, the Denver telecom development firm led by former U S West executive Dick Callahan.

Armed with $31 million in venture financing and soon to add $75 million in debt financing, Nuprernis intends to open its data centers at collocation sites of several telecom carriers. It has opened data centers at its own sites in Boulder and Budapest, Hungary.

Nuprernis intends to serve medium-sized and large businesses. The company offers users of its data center space Compaq hardware, Oracle software and its own IT services.

With so many new entrants joining the party, even a fast-growing market is bound to get crowded. The Yankee Group predicts an eventual shakeout.

"There are a lot of startups in this market," Yankee Group analyst Joanna Makris said. "We don't think all of the startups are going to thrive in the long term. We expect to see acquisitions of the specialist companies take place. Anyone that has a new and unique spin on hosting or focuses on a specific space and is good at it is going to be an acquisition target.

"And the other thing is that so many people are building out data centers that we don't think the market can support all of that space," she said. "The pricing is already demonstrating commoditization."

Contact Rob Hutton at (303) 892-5155 or hutton@RockyMountainNews.com

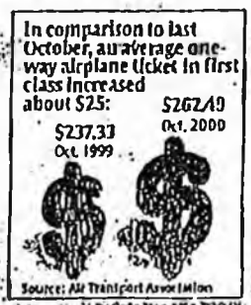
Business travel

By David Field, USA TODAY

Two: Southwest adds a daily non-stop April 1 between Chicago Midway and Fort Lauderdale, for a total of two daily, and one between Midway and Las Vegas, for three a day.

Doubles: TWA will give double Aviators frequent-flier miles Jan. 31-April 1 on three flights starting Jan. 31 between Miami and San Juan, Puerto Rico. Register for offer 01642 at 800-325-4815 or at twa.com.

In comparison to last October, an average one-way airplane ticket in first class increased about $25:



Source: Air Transport Association

By Quin Hua, USA TODAY

Triples: Thrifty offers triple the usual 50 miles per rental day to Alaska Airlines Mileage Plan members Jan. 1-April 1. Two-day minimum, 14-day maximum rental.

Growth: Ten-month-old JetBlue carried its 1 millionth passenger Thursday.

Plan: Delta will begin daily non-stops between Atlanta Hartsfield and Buenos Aires, Argentina, in April.

More power! Tech firms act to avoid blackouts

Steps include backup generators, building substations

By Edward Iwata
USA TODAY

PALO ALTO, Calif. — As California's power crisis worsens, high-tech firms in Silicon Valley are taking steps to defend themselves against potentially devastating blackouts.

"Electricity is the oxygen of Silicon Valley," says Karl Stahlkopf, vice president at the Electric Power Research Institute in Palo Alto.

This year, state authorities have declared [illegible] days when California declares alerts when power reserves fall dangerously below 7% of the state's capacity. To stave off energy outages and emergencies:

▸ About 200 Silicon Valley firms, from Intel to eBay, have agreed with utilities to voluntarily cut their energy use 10% or more during "rolling blackouts" imposed by utilities to lighten the load on the state's electrical system. This season, there have not been rolling blackouts. If there were, the tech firms would save up to 400 megawatts of energy — the equivalent of 400,000 households.

In return, the companies get rate discounts of 10% to 20% all year. Or they drop lower on the list of customers who may lose power during mandatory blackouts. "They can take more control over their destiny," says spokesman Lar[illegible] Pacific Gas & Electric.

▸ Virtually every high-tech firm and chipmaking plant has backup generators to keep safety and office equipment running. Oracle recently built a $6 million substation to power its corporate offices in case of disaster.

▸ Learning from earthquakes and last year's Y2K scare, chipmaker LSI Logic has a "SWAT team" of managers and security people ready to jump on emergencies. They can communicate worldwide via shortwave radios and satellite phones, spokesman Kevin Brett says.

California had its first-ever statewide Stage 3 alert Dec. 7. In Stage 3, the severest warning, power may be cut to any customer at any time. In Stage 2, power may be cut to large business customers. During Stage 1, customers are asked to reduce electricity use.

In June, record heat waves and overloaded transmission lines led energy officials to curtail power to parts of the San Francisco Bay Area for several days. About 100,000 business and residential customers lost power for an hour or two each time.

Silicon Valley firms suffered $100 million in lost production during the outages, says spokeswoman Michelle Montague-Bruno of the Silicon Valley Manufacturers Association.

Tech firms need more power than others because they run huge data-processing rooms, chipmaking plants and research labs. Electricity demand in Silicon Valley grew 12% last year; the statewide average was 3%, Stahlkopf says.

If the government and utilities don't start building a new electrical infrastructure in the next five years, Stahlkopf says, the crisis will spread.

▸ Bush pushes for more oil, 9A