

Searching for a market

The 40-year effort to develop an Alaska natural gas pipeline

The 40-year-long epic quest to build an Alaska natural gas pipeline started with a battle royal in the mid-1970s.

The pipeline project would be one of the largest privately financed ventures ever, if the swirl of forces in motion could settle on a single project, and if that project could deliver gas to the U.S. Lower 48 states at a competitive price.

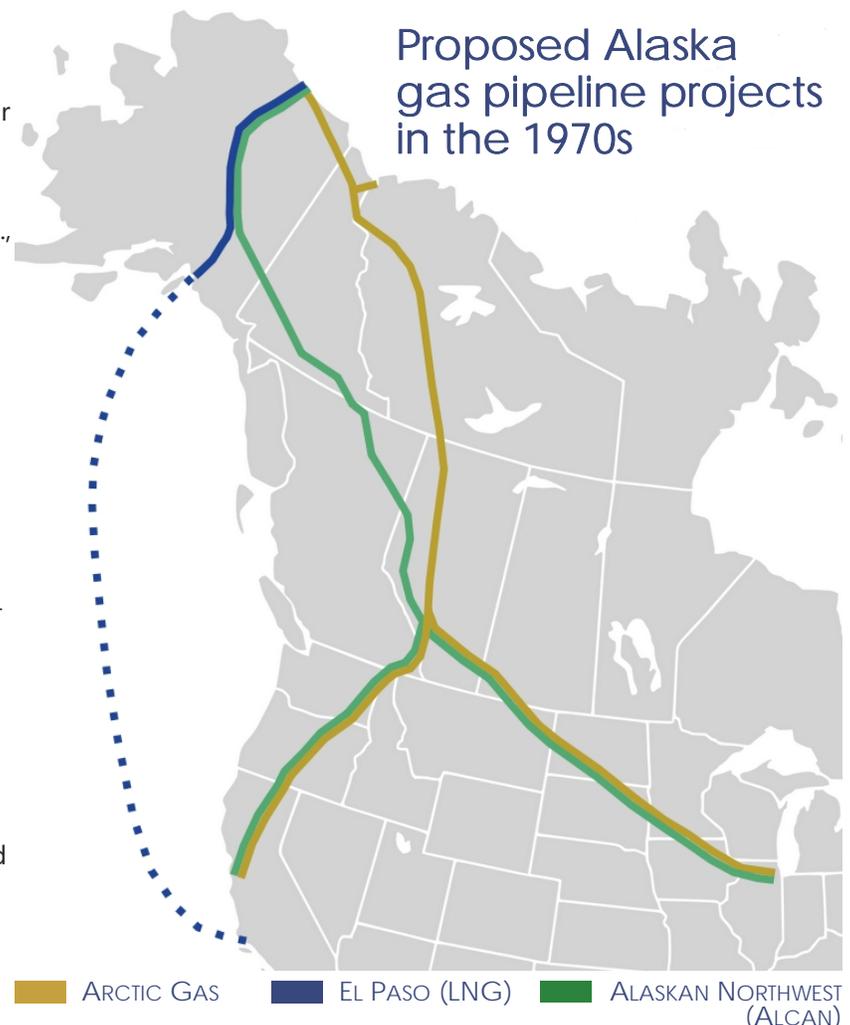
The cast of characters included major oil companies, competing coalitions of pipeline owners, environmentalists testing the limits of their newfound clout and Alaska leaders trying to steer the young state's destiny.

Much of the drama played out in Washington, D.C., before an administrative law judge, who found himself mired in an interminable Kafka-esque hearing on which of three proposed pipelines would be best. But the fight also spilled out of the hearing room into the halls of power in Washington and Ottawa, Canada.

At the time, Alaska was a place raw with opportunity, christened as a state only 15 or so years earlier and in the first stages of its metamorphosis into an oil barony – the first gas pipeline fight almost exactly overlapped the three-year construction of the \$8 billion trans-Alaska oil pipeline.

At the time, aging Lower 48 gas fields, severe winters and government price controls helped cause a natural gas shortage in the United States that prompted gas rationing and threatened "profound hardship and danger for individuals and substantial economic disruption for the country," as one contemporary account put it.

"The construction of an economically and environmentally sound Alaskan natural gas pipeline can reduce this nation's energy vulnerability and provide greater energy independence," the Federal Power Commission said in its 1977 recommendation to President Jimmy Carter to choose a pipeline route through Canada over the liquefied natural gas proposal Alaskans favored.



Carter made his choice, but nothing got built in Alaska. By 1982, roughly 10 years after the battle began, it was clear the state would not get a gas pipeline this time.

Still, the 1970s fight over Alaska's natural gas bounty set the table for what came next as various parties continued to push differing gas pipeline projects forward. The themes that crystallized by the mid-1970s stayed

hardened over the ensuing decades: A national preference for piping gas to the Lower 48, an Alaska tilt toward an LNG project, North Slope producers running hot and cold on a pipeline project of any kind and a world appetite for natural gas that just kept growing without Alaska gas.

CANADA: THE FIRST MOVER

At the beginning, Canadians made the first move on an Arctic gas pipeline project.

Oil companies had been probing along the Beaufort Sea coast on both sides of the U.S.-Canada border for a few years. But the Prudhoe Bay discovery announced in 1968 was a stunner – North America's largest oil field by far and one of its largest natural gas reservoirs, an estimated 9 billion barrels of oil and about 26 trillion cubic feet of gas.

Smaller discoveries occurred in the Mackenzie River Delta on the Canadian side – oil in 1969 and gas in 1970. Pipeline companies in western Canada soon were studying how to get all that Arctic gas flowing through their networks.

Some Alaskans started to worry. The pipeline Canadian companies were discussing would run from Prudhoe straight east to the Mackenzie Delta. That would mean little of the construction in Alaska – only 195 miles of

roughly 4,500 miles of line ultimately proposed. Further, the gas would bypass Alaskans, and the industry it could ignite would happen somewhere other than Alaska. In 1971, the state Legislature passed a resolution endorsing a law that would require a pipeline to head south from Prudhoe at least as far as the Yukon River in Interior Alaska.

The Anchorage Times editorialized in 1973 that a Prudhoe-Mackenzie line would leave "Fairbanks cold and crippled by ice fog in winter, still dependent on costly heating oil shipped in from refineries thousands of miles away."

Despite Alaskans' objections, momentum stayed through the early 1970s with a pipeline that would link the colossal Prudhoe gas reserves with the more modest Mackenzie discoveries – by mid-1975 eight Mackenzie fields were identified with proved reserves of 3.8 trillion cubic feet, about one-seventh the reserves at Prudhoe.

In 1973, a consortium of 26 U.S. and Canadian firms called Arctic Gas Study Group, proposed a Prudhoe-Mackenzie pipeline, with start-up projected for 1979. They conceived a \$5.7 billion project that would carry more than 4 billion cubic feet a day – half from Prudhoe and half from the Mackenzie Delta.

After picking up Mackenzie gas, the pipeline would veer south toward Alberta. Some gas would get routed to the Pacific Northwest and West Coast. Some would head to the Midwest and East Coast. Some existing pipeline systems from Canada to the United States would need expansion. Some new pipelines to the West and Midwest would be needed.

Most of the Toronto-based consortium members were pipeline companies, including TransCanada Pipelines Ltd., co-sponsor of the proposed pipeline today that would run from Prudhoe Bay to Alberta, Canada, through Interior Alaska.



Source: Anchorage Museum of History and Art, Library & Archives

A year after the Prudhoe Bay discovery, a state of Alaska oil and gas lease sale netted \$900 million.

ARCTIC GAS AT-A-GLANCE

Project:	Pipeline from Prudhoe Bay east to Mackenzie Delta in Canada, then south through Canada to U.S. Midwest and West
Sponsors:	Consortium of U.S. and Canada pipeline companies and Arctic oil and gas companies
Capacity:	4.5 billion cubic feet a day, half from Alaska, half from Canada
Length:	4,512 miles (1976)
Cost:	\$6.7 billion (1975 estimate)

Source: Federal Power Commission

But three members stood out: Sohio (BP), Arco and Exxon, the main oil and gas producers at Prudhoe. The big three, on the cusp of constructing the oil pipeline from Prudhoe, also had picked a direction – east to Mackenzie – for a gas pipeline.

This project stirred genuine excitement in the United States and Canada, that Arctic natural gas would help rescue North America during its energy crisis, counter-punching the Arab oil embargo.

In March 1974, sponsors of the Prudhoe-to-Mackenzie-to-the-Lower 48 pipeline project filed with the U.S. Federal Power Commission and Canada's National Energy Board for authorization to build. They announced their project to much fanfare at the National Press Club in Washington.

The companion pipelines needed to move the Alaska gas through Canada and deep into the Lower 48 soon filed for their own authorizations.

The project seemed to have unstoppable momentum.

But an upstart competitor was loading its cannons and bracing for a battle.

A NEW IDEA: LNG TO CALIFORNIA

The upstart was a regional Lower 48 pipeline company called El Paso Natural Gas Co. In 1972, it began mulling how it could profit from the rich Arctic natural gas fields.

El Paso was somewhat of an outlier compared with the mainstream U.S. pipeline companies involved in the Arctic Gas proposal. Those companies operated in the Pacific Northwest, Midwest, East and South and their proposal would bring the northern gas into their networks, many of which linked to one another.

El Paso's domain was disconnected from that grid. Its pipelines spanned the Southwest, from West Texas to Southern California. Even if it could build a pipeline northward to connect into the other networks, it might get just a dribble of the Arctic gas. Where was the money in that?

El Paso came up with an out-of-the-box idea, and Alaskans soon fell in love with it.

After hinting for months about its plans, El Paso unveiled the details of its proposal in a September 1974 filing with the Federal Power Commission.

To get gas to its California grid, El Paso proposed jumping aboard the up-and-coming liquefied natural gas industry. Commercial trans-ocean LNG shipments had started only 10 years earlier, when a British utility contracted for gas from Algeria. The United States was

dabbling in the industry – a small LNG plant started shipping Alaska gas to Japan in 1969 (gas from Cook Inlet near Anchorage, not North Slope gas).

The El Paso plan would greatly expand the U.S. LNG industry. The company asked the FPC for authorization to pipe over 3 billion cubic feet a day of Prudhoe Bay gas about 810 miles almost straight south from Alaska's Arctic coast to its Pacific coast. There the gas would be superchilled into a liquid to compress it for transport via high-tech tankers to the California market El Paso already

EL PASO AT-A-GLANCE

Project:	Pipeline from Prudhoe Bay south to liquefied natural gas plant at Gravina Point near Cordova, Alaska. LNG shipped by tanker to California.
Sponsors:	El Paso Natural Gas Co. for pipeline, LNG plant and tankers. Western LNG Terminal Co. for California regasification plant.
Capacity:	2.4 billion or 3.1 billion cubic feet a day
Length:	810 miles of Alaska pipeline, 2,200-mile tanker route, 250 miles of California pipelines (1976)
Cost:	\$6.6 billion (1975 estimate)

Source: Federal Power Commission

served. Project cost: An estimated \$6.6 billion.

The El Paso pipeline would roughly follow the same route through Alaska as the trans-Alaska oil pipeline, which had started construction five months earlier. But instead of terminating at Valdez like the oil pipeline, El Paso's gas pipeline would end at Point Gravina, near the fishing town of Cordova.

El Paso's plan also involved building more pipelines in California and Texas to complete its grid and help carry the bounty of Alaska natural gas. Another company called Western LNG Terminal Co. would build an LNG receiving port at Point Conception, Calif., outside Santa Barbara.

El Paso's emergence upset the Arctic Gas consortium. But the consortium's members had another shock coming: Alaska leaders ardently embraced El Paso's project.

Gov. Bill Egan backed the El Paso line, as did his successor, Jay Hammond. The state Legislature endorsed it. Former Gov. Wally Hickel made a chest-beating declaration that the state had the legal authority to dictate the LNG route. (Hickel would play an important role in keeping an Alaska LNG project alive in the 1980s and 1990s.)

In 1975, local business leaders launched a civic group called the Organization for Management of Alaska's Resources to campaign for the El Paso line, which they soon dubbed the "All-American Line." OMAR later evolved to the Resource Development Council for Alaska, which today advocates for the expansion of Alaska's economic base.

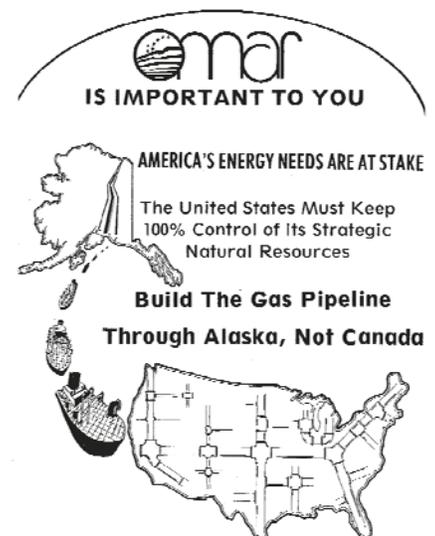
El Paso was a good fit for the emerging mindset of Alaskans. Alaska was a poor state with just a few

highways and little internal control of its own economy. Outside interests controlled the small fishing and timber industries. Washington controlled the economic mainstay – federal defense and civilian spending.

But with the oil pipeline started, Alaska was about to become fabulously rich. It would become richer still if the gas pipeline could bisect the state instead of skirting the Arctic coast, if Alaskans could siphon off a bit of the gas for their own use and possibly even build a new petrochemical industry that used natural gas as its feedstock.

With the Arctic Gas proposal on the FPC docket and the El Paso project getting some buzz, one of Alaska's U.S. senators, Ted Stevens, was asked in May 1974 which one he favored. Neither would get his endorsement right then, he replied. Then he elaborated, and summed up the sentiment that many Alaskans shared:

"The time is long gone when Alaskans have to fall over and play dead to a bunch of Texas oilmen."



Cover page of an OMAR information flier.
Source: Alaska Center for the Environment records, Archives and Special Collections, Consortium Library, University of Alaska Anchorage

THE BATTLEGROUND

El Paso and Arctic Gas filings with the Federal Power Commission were separated by only six months, and they set the stage for the three-year donnybrook that followed.

An administrative law judge for the FPC, Nahum Litt, started taking evidence in May 1975 about which project should get the go-ahead. It was widely understood that only one project would prevail.



Each side took its turn extolling its own project and shredding its competitor's. A contemporary news account described the two proposals "tearing each other apart" before the FPC. Nearly 200 attorneys were signed on to represent the menagerie of pipeline companies, gas utilities, power companies, state utility commissions, and oil and gas producers with a stake in the outcome.

It was impossible to keep track of who was ahead, or even who was scoring points. Along the way, the North Slope oil and gas producers dropped out of the Arctic Gas consortium. Sohio (BP) exited in late 1974, saying it

had fulfilled its original intent to belong only until the pipeline development phase.

Litt's hearing dragged through 1975 and then 1976. Ultimately, the hearing spanned 252 days of testimony. The transcript weighed in at almost 45,000 pages, bound in 253 volumes that if stacked on end would stand two stories tall. About 1,000 exhibits got introduced, with some running more than 1,000 pages.

Each side tried to out-maneuver the other. Early on, Arctic Gas announced that nearly half of Prudhoe Bay's

gas had been committed to U.S. pipeline firms through its project.

El Paso negotiated with Alaska for rights to the state's royalty share of Prudhoe gas production to front-load its LNG project and won a tentative contract, valid if its project prevailed before the FPC.

Then, in mid-fight, 15 months after Litt started his hearing, a new event exploded on the proceedings like a hand grenade.

THE ENTREPRENEUR FROM UTAH

That event was the arrival of a third pipeline project for Alaska's gas, a grandiose bet-the-company kind of play for its sponsor.

But it had an acutely appealing feature: It was a sort of hybrid between the Arctic Gas and the El Paso lines; it offered a compromise.

The new project, filed with the FPC in July 1976, was the brainchild of John McMillian, a Salt Lake City entrepreneur.

McMillian was a former petroleum engineer whose career had taken him from Texas to Australia and back to Texas. By 1976 he was head of Utah-based Northwest Pipeline Co., which ironically got its big break a couple of years earlier by acquiring a piece of El Paso's network.



John McMillian photo from 1980, courtesy of the Anchorage Daily News

McMillian's project was ultimately called Alaskan Northwest, and it would carry 2.4 bcf a day of Prudhoe gas, both bringing it to Alaskans and piping it through Canada.

The Alaskan Northwest route would parallel the oil pipeline south from Prudhoe Bay to Fairbanks and Delta Junction. From there it would continue along the Alaska Highway into Canada. This is basically the same route proposed today by the TransCanada/ExxonMobil

ALASKAN NORTHWEST AT-A-GLANCE

Project:	Pipeline from Prudhoe Bay south to Interior Alaska, then into Canada along the Alaska Highway for delivery to U.S. Midwest and West
Sponsors:	Consortium headed by Northwest Energy Corp. (U.S.) and Foothills Pipe Lines Ltd. (Canada)
Capacity:	2.4 billion cubic feet a day
Length:	4,787 miles (1976)
Cost:	\$6.8 billion (1975 estimate)

Source: Federal Power Commission

partnership. Alaskan Northwest's partner for the Canadian construction was Foothills Pipe Lines of Calgary, which TransCanada now owns.

The Alaskan Northwest proposal added new complexity to Litt's decision. And that complexity promised to add months to the hearing process.

Congress and the president were getting restless. They were in an election year. The country was enduring natural gas shortages and voters were grumbling.

Something needed to be done to break the stalemate developing in Litt's hearing room.

POLITICIANS AND ENVIRONMENTALISTS

Congress and the president separately were rubbing at the edges of the Alaska gas pipeline issue.

On Capitol Hill, dueling legislation attempted to dictate the pipeline route.

Minnesota Sen. Walter Mondale and 25 co-sponsors introduced a bill in early February 1976 that mandated the Arctic Gas route.

Environmentalists wildly objected, and they wanted their voice heard this time. In the early 1970s, Congress enacted a package of laws – the Clean Air Act, the Clean Water Act, the National Environmental Policy Act – that became scaffolding for construction of the new conservation movement. Environmentalists felt betrayed that Congress approved the trans-Alaska oil pipeline in 1973 without full consideration of how that project would affect the environment.

The Arctic Gas project would trench the pipeline through the coastal plain of the Arctic National Wildlife Range (in 1980 the range was enlarged and renamed the Arctic National Wildlife Refuge). Environmentalists challenged the technical feasibility of using snow roads to avoid damaging tundra and permafrost. They warned that development would interfere with caribou breeding and birdlife. They argued that ANWR was intended to be left chaste, the one place in the country humans will leave alone.

They made the same argument to Judge Litt, and they had an ally in the state of Alaska.

Today the state favors oil and gas development in ANWR, but it didn't back then, not for a gas pipeline route. Gov. Jay Hammond testified before Litt: "Some day, perhaps, we will need to have the oil and gas resources of the Range, if any, even more than we need to have the resource of wilderness. But clearly we should not allow construction of a gas pipeline in the Arctic National Wildlife Range when other less damaging



Source: Alaska State Library - Historical Collection

Jay Hammond was Alaska governor during construction of the trans-Alaska oil pipeline (in background) and the 1970s debate on a gas pipeline.

alternatives are available, as they are."

Contesting Mondale's bill were proposals from Alaska's senators, Stevens and Mike Gravel, mandating the LNG project.

"If the Canadian pipeline route is foisted on the American public by virtue of the power of international oil companies, it's a decision they will regret very much," Stevens fumed in response to Mondale's bill.

The fight in Congress reflected lobbying by OMAR, the different pipeline sponsors and others across the United States. In particular, Midwest and East Coast members of Congress were pressed to favor a Canadian route that would benefit their consumers. That's partly why Mondale's bill had so many co-sponsors.

But as the fight raged on Capitol Hill and Judge Litt's hearing plodded ahead, the White House made a jaw-dropping suggestion that broke both impasses.

A GAME CHANGING IDEA

The political game changer occurred in late February 1976, when President Gerald Ford delivered a national energy message proposing that the president, not the FPC, decide the route.

The next month Ford sent to Congress legislation that detailed how it would work: Judge Litt and the FPC should abbreviate their work and, instead of picking a winner, merely recommend to the president by Jan. 1,

1977, which route looked best. The president then would make his pick, and if Congress sanctioned it the whole matter would be over by Oct. 1, 1977.

Congress lined up behind the idea, but first they stripped the Republican president's name off of it. Ford was running for president and Democrats controlled Congress.

In June 1976, Illinois Sen. Adlai Stevenson offered a bill requiring a presidential decision by mid-1977, with Congress to approve or disapprove it within the following 60 days. Stevens and Mondale both were co-sponsors. Ford gave Stevenson's bill his blessing.

Besides setting a mechanism for picking a pipeline project, the bill would fast-track construction.

"A natural gas supply shortage exists in the contiguous states," the bill declared. "The expeditious construction of a viable natural gas transportation system for delivery of Alaska natural gas to United States markets is in the national interest." Federal agencies would be ordered to expedite permits and other authorizations for the pipeline project and barred from taking certain actions that would slow the construction timetable. Review by courts would be limited as well.

The bill blitzed through Congress. Ford signed the Alaska Natural Gas Transportation Act into law in October 1976. But he would not get to choose the winning pipeline route. Eleven days after signing ANGTA, Ford lost the election. The choice would fall to the new president, Jimmy Carter.

JUDGE LITT, FPC WEIGH IN

Judge Litt closed the record on his hearing on Nov. 12, 1976, three weeks after Ford signed ANGTA. On Feb. 1, 1977, he made his recommendation to the FPC board.

His choice: The Prudhoe-to-Mackenzie route through ANWR.

"There is a consensus on the part of the Commission Staff, the most popular consuming states taking an active interest, and an array of pipelines and distributors serving huge sections of the country that if any pipeline applicant must be chosen now, their best interests would be served by choosing Arctic Gas," Litt wrote. "The evidence in this record clearly supports that conclusion. ... The Arctic Gas application is superior in almost every significant aspect when compared to El Paso. Certification of its proposal, subject to appropriate conditions, will bring more energy to market cheaper and more reliably than El Paso and will do so in an environmentally acceptable manner. It is found that Arctic Gas' prime route should be certificated."

Litt noted that support for El Paso was mostly confined to a couple of Lower 48 pipeline companies linked to the project and the state of Alaska. Although California would be the LNG destination, California backed the Arctic Gas project, which would deliver Alaska gas to the state via pipeline, he said.

As for the Alaskan Northwest proposed route down the Alaska Highway, which was filed with the FPC just seven months earlier, that project was half-baked, Litt scoffed. The cost estimates were shaky, the pipeline system

poorly designed, the financing plan unreliable, the construction schedule fictitious. It wasn't even certain how the Prudhoe gas would get from Canada to the Lower 48, he wrote.

But the Alaskan Northwest project wasn't dead yet. It was a sluggish racehorse, but it had a winning kick for the finish line.

The four-person Federal Power Commission issued its combined environmental impact statement and recommendation to President Carter on May 1, 1977.

The commissioners deadlocked. Two favored the Arctic Gas line. Two favored the Alaskan Northwest route down the Alaska Highway into Canada.

They didn't dislike El Paso's LNG project. They said it had its advantages. But in a close call, they concluded that "An overland route can deliver each unit of gas more cheaply than a land and water route using liquefied natural gas technology. If Canadian gas is also developed, the sharing of facilities will lower Arctic's cost of service to Americans slightly below that of Alcan (Alaskan Northwest)."

"Arctic has the greatest benefits and lowest costs, followed closely by Alcan, with El Paso offering the least benefits and the highest costs. However, all three systems can deliver the gas at a reasonable cost to the consumer," they said.

The El Paso LNG project can be an option, they said, if Canada erects roadblocks making it difficult to flow

Alaska gas to the Lower 48, the commissioners said.

As for ANWR, the commissioners echoed Litt in writing: "We believe it is possible to approve a buried pipeline

through the Range without setting in motion an inevitable progressive violation of the Range."

U.S. AND CANADA SHAKE HANDS

Resolving the Canada conundrum was well under way.

The Ford administration had been negotiating since 1974 with Canadian officials on how Alaska gas could flow unimpeded to the Lower 48.

Canada fervently wanted to host the pipeline, which would help develop that nation's growing gas reserves in Alberta. Clearly big stakes were involved in the diplomacy between Ottawa and Washington, D.C.

Ultimately, the cross-border talks resulted in key documents still active as a new Alaska gas pipeline project is pursued today.

The Transit Pipeline Treaty with Canada in January 1977 made it easy for the Alaska gas to flow through Canada via pipelines.

The Agreement in Principles that the Carter administration negotiated for the Alaska gas pipeline came in September 1977. It set details of the pipeline route, among other features. This bilateral agreement was a side document to Carter's decision released simultaneously on the winning route.

Carter picked the Alaskan Northwest project down the Alaska Highway. Canada also favored that project. In July 1977, its National Energy Board tentatively endorsed the route and declared the Arctic Gas proposal "environmentally unacceptable." Aboriginal land claims in Canada also crippled hopes for a Mackenzie Valley pipeline.



Source: Associated Press

President Jimmy Carter addresses Congress on oil and gas matters in 1977. Sen. Walter Mondale (left) and Rep. Thomas "Tip" O'Neill in background.

During that summer, the Arctic Gas consortium realized it had been KO'd. In early August, consortium member TransCanada, a Calgary-based pipeline company, announced it was joining the Alaskan Northwest project. Late that month, Arctic Gas announced it would disband.

In his decision, Carter sold the Alaskan Northwest (Alcan) project hard. "The Alcan system will deliver Alaskan gas at the lowest cost to U.S. consumers, but will do so directly to both the Midwest and West Coast markets," he wrote.

"Under almost all criteria, the Alcan system is clearly superior to the proposal by the El Paso Alaska Company to liquefy Alaska gas and ship it to the West Coast,"

Alaska gas pipeline wars: Timeline

1968

Gigantic oil and gas discovery at Prudhoe Bay announced.

1971

Canada-based consortium studies feasibility of pipeline linking Prudhoe and Mackenzie gas fields to Lower 48.

1969-1970

Smaller oil and gas discoveries announced at Mackenzie River Delta in Canada's Arctic.

1973

Arctic Gas consortium proposes Prudhoe-to-Mackenzie-to-Lower 48 gas pipeline.

Carter said. El Paso's gas would be more expensive and bring a smaller net economic benefit to the United States, he said. Pipelines also deliver gas more safely and reliably than LNG projects, and they last longer, he said.

For the new pipes that would carry Alaska gas south of the Canadian border, Carter selected a partnership of six

pipeline companies to deliver gas to Illinois, and two other companies to get the gas to California.

Between the two countries, the entire pipeline network would encompass 4,787 miles, with an average daily flow from Prudhoe Bay of 2.4 bcf.

THE DEMISE STARTS QUICKLY

Congress approved Carter's choice on Nov. 2, 1977.

That turned out to be the high-water mark for the Alaskan Northwest project.

Within a month, the pipeline sponsors were pleading in Juneau for the state to finance construction cost overruns and possibly guarantee construction loans.

McMillian would make similar pleas in Washington. He also was mumbling that Congress or the Federal Energy Regulatory Commission, the newly formed successor to the Federal Power Commission, might need to mandate a wellhead value of the gas – its value as it leaves the ground at Prudhoe Bay – to ensure the North Slope producers would make money.

Earlier there had been hints that any Alaska gas project could be doomed by its high cost.

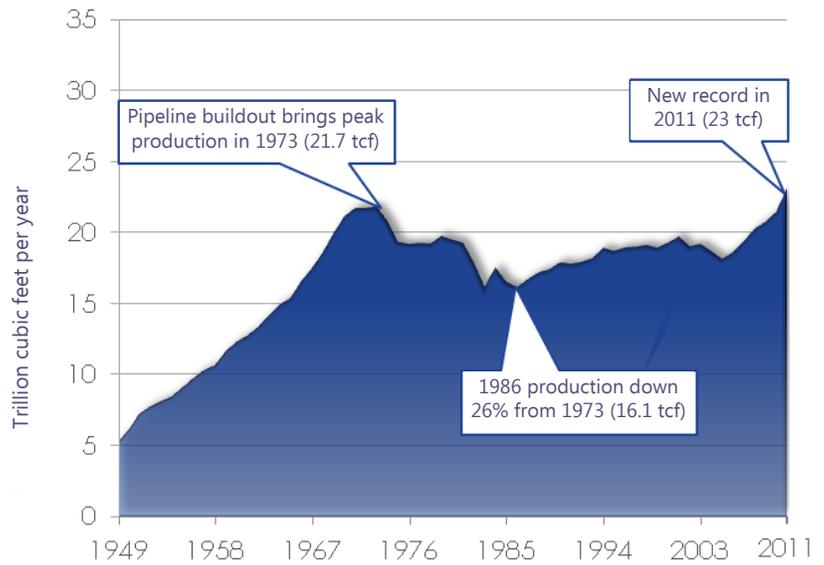
In 1975, a task force advising Alaska Gov. Jay Hammond warned the high transportation costs might result in a wellhead value of zero. No wellhead value would mean the Alaska royalty share of gas production would be worthless, and the producers would have no reason to pay to ship gas from the North Slope.

The Litt and FPC decisions in early 1977 are

riddled with references to the marginal economics of all three pipeline projects under consideration. Alaska gas might be priced too high for the market to want.

Lots of lofty language had been lobbed about a Lower 48 natural gas crisis. The FPC decision in May 1977 noted the "profound hardship" for individuals and "substantial

U.S. natural gas production



Source: U.S. Energy Information Administration

March 1974

Arctic Gas applies to U.S. Federal Power Commission and Canada's National Energy Board for permission to construct.

May 1975

FPC Administrative Law Judge Nahum Litt begins hearing on which project to authorize. Hearing concludes in late 1976, after Congress intervenes.

September 1974

El Paso applies to FPC to pipe gas south to Alaska's Pacific Coast, where gas would be liquefied for transport via tankers to California.

June 1976

Alaska Natural Gas Transportation Act introduced in Congress, proposing FPC change its role from deciding the route to recommending one to the president, who would decide.

Part 1, 1971-1982: Alaska gas pipeline wars

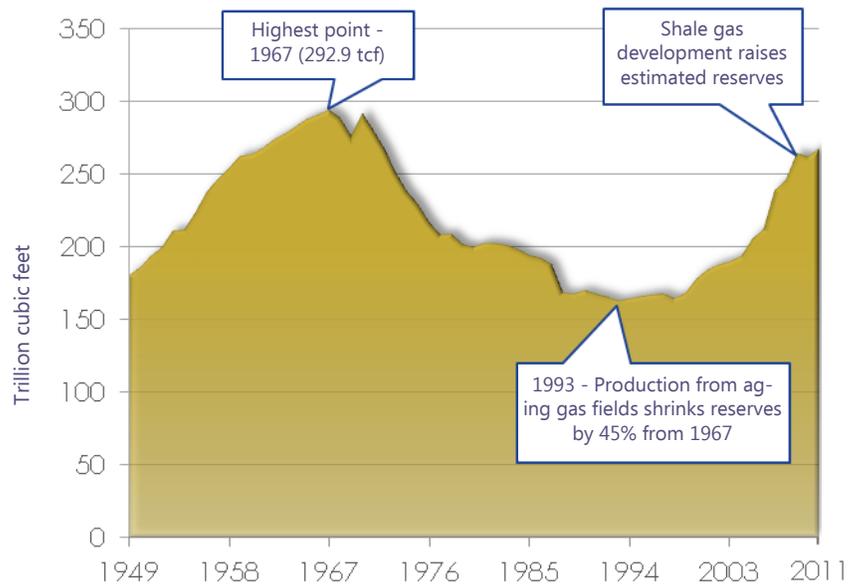
economic disruption" for the country. "The nation sorely needs new sources of economically competitive natural gas," Carter said in his decision.

The natural gas shortage was real, and the emotions were genuine as oil and gasoline prices spiked in the wake of the 1973 Arab oil embargo. Nations across the world were scrambling to diversify away from oil.

Ironically, 1973 turned out to be a record year for U.S. natural gas production, a record that lasted until 2011. But the United States was burning through its natural gas reserves. Proved reserves fell by nearly one-third from its 1967 peak to 1977, when President Carter decided on the Alaska gas pipeline.

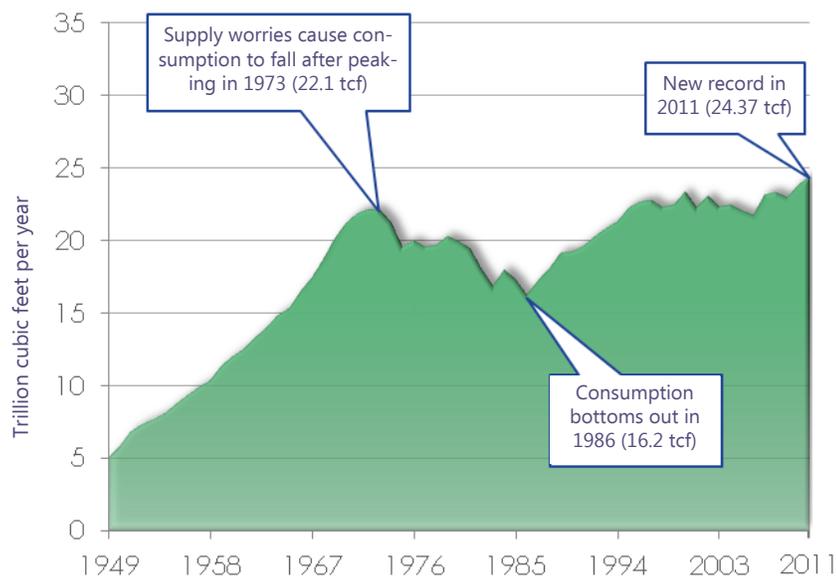
More gas was waiting to be found in the Lower 48, but rigorous federal price controls

U.S. natural gas proved reserves



Source: U.S. Energy Information Administration

U.S. natural gas consumption



Source: U.S. Energy Information Administration

on interstate gas discouraged new exploration. Gas reserves would continue to dwindle for 17 more years before the dismantling of gas-industry regulations helped them to grow again.

In response to shortages, natural gas consumption fell in the mid-1970s. It plunged 24 percent from 1973 to 1983.

Natural gas prices did rise, but not to high enough levels until around 2000-2001, when piping Alaska gas to the Lower 48 started getting a new look.

Within a year of Carter authorizing the Alaskan Northwest project, it was obvious the gas line project had lost traction.

"Almost everyone knows that the Alaska Highway gas pipeline venture is floundering: government officials, businessmen, bankers

July 1976

Alcan Pipeline Co. (later called Alaskan Northwest) files third application with FPC for a gas pipeline. Route would run south to Interior Alaska then follow the Alaska Highway into Canada.

February 1977

Judge Litt recommends FPC select Arctic Gas project.

July 1977

Canada's NEB calls Arctic Gas project environmentally unacceptable. U.S. and Canada negotiate terms of moving Alaska gas through Canada.

October 1976

Congress passes ANGTA, which sets deadlines: May 1977 for FPC to make its recommendation, September 1977 for president to decide, November 1977 for Congress to approve or reject president's decision.

May 1977

FPC commissioners deadlock in recommendation to President Carter: Two favor Arctic Gas; two favor Alaskan Northwest.

September 1977

President and Canada agree on Alaskan Northwest route.

and the press are expressing more frequent and deeper doubts about whether the project will be completed on schedule – or ever," wrote economists Arlon Tussing and Connie Barlow in an early-1979 report to the Alaska Legislature.

No one wanted to take on the potentially huge risks of low prices, cost overruns, regulatory delays and on and on. "The gasline project is so large that its failure would be devastating to the pipeline sponsors, the gas producers (if they were to sink capital into conditioning and other facilities in the field), the lending institutions,

the economy of Canada, and the political fortunes of the Canadian government," Tussing and Barlow wrote. The time span during which conditions must be favorable to blunt the risks involved could extend 30 or more years, they said.

"The Alaska Highway gas pipeline almost certainly offers substantial net economic benefits to both the United States and the State of Alaska, but as a business venture it may be marginal at best without extraordinary kinds of government intervention," they wrote in another 1979 report.

Ultimately, Alaskan Northwest couldn't get financing.

In 1981, to try to help, President Ronald Reagan reversed Carter's 1977 decision to bar North Slope producers from owning interest in the gas pipeline. The producers made a tentative commitment for 30 percent of the project's financing. It wasn't enough.

In April 1982, Alaskan Northwest announced it was delaying the project for at least two years. It was all over except the writing of a formal obituary.

The Lower 48 natural gas shortage was gone. U.S. markets were about to be amply supplied with Western Canada gas via the lower one-third of the Arctic gas project that actually was built - from southern Alberta to the Midwest and West. The Alaska pipeline proposed today would flow gas to these 1980s segments and other pipeline systems.

By late 1982, the North Slope producers were backing a new idea for the Prudhoe gas that rose up their oil wells. They had been reinjecting the produced gas to maintain reservoir pressure to help push oil up and out the wells.

In November they announced a \$100 million pilot project to inject gas enriched with gas liquids such as propane to make it "miscible" with oil – the injected gas would reduce the oil's viscosity as they mixed, allowing more oil to flow freely to the wells. Today Prudhoe has the world's largest miscible gas project in the world, according to BP.

One Alaska regulator recently observed that it perhaps was good for Alaska that the 1970s-era gas pipeline didn't get built.

North Slope producers have used Prudhoe Bay's gas for the past 35 years to coax billions of barrels of extra oil from the reservoir, said Cathy Foerster of the Alaska Oil and Gas Conservation Commission. Prudhoe has more oil production left, and the gas is still there, waiting for a pipeline, she said.

If that gas had left Prudhoe, the North Slope's oil and gas era would be history by now, and the Alaska Legislature's fiercest fights would be over fishing and tourism levies, not oil taxes, she said.



November 1977

Congress sanctions Carter's choice of Alaskan Northwest.

Later 1982 –

Two former Alaska governors, Wally Hickel and Bill Egan, head state task force to find a pipeline solution.

1983

Task force recommends 800-mile pipeline to Alaska's Pacific Coast, with LNG exports to West Coast or Asia. Hickel forms Yukon Pacific Corp. to develop this project.

April 1982

Unable to find financing, Alaskan Northwest postpones construction of Alaska and northern Canada legs of project.

Early 1980s

Lower one-third of pipeline system, from southern Canada to Lower 48, gets built.

1982-2001: Yukon Pacific's LNG idea

A new project pushed by a new company, Yukon Pacific Corp., revived interest in an Alaska gas pipeline in 1983.

Yukon Pacific was born amid doubts among some Alaskans that the Alaskan Northwest project through Canada would ever break ground – and over their dismay that the El Paso LNG project to California got jettisoned in favor of Alaskan Northwest in 1977.

The first seeds of Yukon Pacific were planted in 1982 as Alaskan Northwest Natural Gas Transportation Co. announced the latest postponement of its pipeline project. Lame-duck Gov. Jay Hammond appointed an eight-person task force to figure out now how best to turn Prudhoe Bay gas reserves into money. North Slope oil had been flowing for five years, and Alaskans wanted to see the natural gas move, too. The co-chairmen were two ex-governors who had been fans of the El Paso LNG project: Republican Wally Hickel and Democrat Bill Egan.

In January 1983, they delivered their new road map for bringing Alaska gas to market. Not surprisingly, it called for an LNG project – a pipeline to the Gulf of Alaska coast, with exports this time to Japan, South Korea and Taiwan, and possibly the U.S. West Coast, but not exclusively the West Coast as El Paso proposed. "It is unlikely that Alaska gas will be economically competitive in a free, uncontrolled U.S. market over the long term," the report predicted.

This export-to-Asia concept dominated Alaska gas pipeline plans over the next 15 to 20 years.

With the task force's work done, Hickel quickly formed Yukon Pacific to push the project ahead. "The window is open now to the Japanese market, but it may not be open for long," Hickel said at the time, a refrain repeated over the ensuing years by LNG champions.

(Hickel held Yukon Pacific stock until 1991, shortly after he became governor again. He faced an accusation – the first ever against a governor under the state's 1987 Executive Branch Ethics Act – saying he improperly promoted the LNG project as governor while he owned Yukon Pacific stock. He divested the stock and the accusation was dropped. Hickel remained a brash LNG-project cheerleader until his death in 2010, even offering spirited endorsements of Alaska gubernatorial candidates in 2006 and 2010 who embraced his LNG project while denouncing all other gas pipeline ideas.)

The hope of those who launched Yukon Pacific in the early 1980s reflected the passion some Alaskans have with the LNG idea, a love affair that began with El Paso and continues today.

During the Yukon Pacific era, their optimism pushed aside the idea's Himalayan-sized market challenges and clung to a hope that a successful LNG project could offer Alaska a powerful and lasting economic kick.

1986

Lower 48 transportation giant CSX invests in Yukon Pacific.

1988

CSX becomes majority owner of Yukon Pacific.

1988-1989

Yukon Pacific obtains right of way across federal land and federal export authorization. Target market is Asia.

Early 1990s

Yukon Pacific says it has tentative deals with LNG buyers in South Korea and Taiwan but never achieves final contracts.

1990s

LNG prices remain low, averaging \$3.52 per million Btu during decade in Japan, too low to make the project profitable.

WORLD'S LARGEST LNG PLANT

As conceived, the new Yukon Pacific LNG project was similar in size to El Paso's.

The pipeline would span roughly 800 miles, cost \$14.3 billion (1982 dollars) not counting tankers, and it would carry up to 2.83 billion cubic feet a day of natural gas. It would be constructed in phases and, when fully built out, export 1.9 bcf a day (14.5 million tons a year) after consuming some gas during the liquefaction. It would be the world's largest LNG plant.

But besides targeting Asia, the original Yukon Pacific project diverged from the earlier El Paso plan in important ways:

- The pipeline would go from Prudhoe Bay to Nikiski on the Kenai Peninsula southwest of Anchorage, not to Gravina Point near Cordova. Nikiski already was home to a 14-year-old LNG export plant, the only one in the United States, but the new plant would be about 10 times larger. Within a few years, the proposal's terminus shifted eastward to Valdez, so the gas pipeline would run parallel to the trans-Alaska oil pipeline from Prudhoe Bay to tidewater.
- The pipeline could carry the full stream of Prudhoe Bay gas, not just methane but also such gas liquids as propane and butane as well as some unusual ingredients – carbon dioxide and other contaminants usually removed from pipeline gas.

The gas liquids would give the pipeline something extra to sell, making it more financially viable. Although extracting gas liquids from the methane at tidewater would be expensive, the liquids could be exported, proponents said, fetching higher market prices than methane gets.

Piping contaminants from Prudhoe Bay is dicier. They're seldom found beyond trace amounts in pipeline gas. Carbon dioxide and hydrogen sulfide, both of which are

YUKON PACIFIC AT-A-GLANCE

Project:	Pipeline from Prudhoe Bay south to liquefied natural gas plant at Valdez, Alaska. LNG shipped by tanker to Asia.
Sponsors:	CSX Corp. became majority owner. Other investors included Wally Hickel and Supra Corp.
Capacity:	2.3 billion cubic feet a day
Length:	797-mile Alaska pipeline
Cost:	\$18 billion (1996 estimate)

Sources: U.S. Department of Energy; Yukon Pacific

present in Prudhoe gas, are called acid gases because they form acids or acidic solutions and can corrode a steel pipeline when water is present. Prudhoe gas is quite acidic – 12 to 13 percent of the gas is carbon dioxide.

The Alaskan Northwest pipeline project would have removed the contaminants at Prudhoe Bay, before gas enters the pipeline. So would the TransCanada/ExxonMobil gas pipeline proposal currently being worked; once removed at Prudhoe, the carbon dioxide would be injected back into the Prudhoe reservoir to help produce more oil.

But Yukon Pacific proposed to pipe the contaminants and extract them at Nikiski, where the plant would be cheaper to build. Of course, that would leave unresolved the chore of carbon dioxide disposal. Yukon Pacific had some ideas about that: Sell it to petrochemical plants as feedstock, spike it with other hydrocarbons to produce low-grade fuel, shoot it into nearby Cook Inlet oil fields to scrub out more crude, or vent the gas into the atmosphere "in tall stacks."

April 2000

ExxonMobil, BP and Phillips – the major North Slope producers – rejigger their Prudhoe Bay interests so that each company's share of oil production matches its share of gas production. This alignment eases cooperation on a gas project.

Winter 2000-2001

Severe weather causes Lower 48 natural gas prices to briefly spike above \$10 per million Btu.

1998

Alaska enacts Stranded Gas Development Act to let an LNG project sponsor negotiate state fiscal terms on gas development. Law lapses in 2001 after no one applies.

December 2000

ExxonMobil, BP and Phillips announce a joint effort to evaluate gas development. They spend \$125 million over the next two years.

2001

Yukon Pacific slashes staff.

PAPERWORK IN ORDER

The Yukon Pacific project percolated along through the 1980s and early 1990s.

The project design was refined somewhat. Besides moving the pipeline terminus to Valdez, Yukon Pacific decided to remove carbon dioxide and other contaminants at Prudhoe Bay after all. The company also scaled back the pipeline volume to 2.3 bcf a day - allowing export of 1.8 bcf a day on average after using some of the gas in compressors to liquefy it.



Source: Associated Press

Gov. Wally Hickel

In 1986 a deep pocket became part owner with Hickel: Texas Gas Transmission Inc. a subsidiary of Lower 48 railroad and shipping giant CSX Corp. Texas Gas was quite familiar with Alaska gas pipeline efforts; it once was part of the Alaskan Northwest consortium that pushed the 1970s-era pipeline project. The company dropped out of Alaskan Northwest in 1981 and CSX bought it in 1983.

Besides Hickel and CSX, another Yukon Pacific partner was Supra Corp., a venture of Robert O. Anderson, who headed Arco during the Prudhoe Bay discovery.

But Yukon Pacific really became CSX's show. The same year that CSX bought into Yukon Pacific, it also acquired Sealand, a major ocean-going cargo carrier serving Alaska that presumably would haul materials for the LNG project. By 1988, CSX was majority owner of Yukon Pacific. (CSX divested of Texas Gas in 1989 and of Sealand in 1999.)

In 1988, Yukon Pacific obtained a right of way across federal land for most of its pipeline route. That same year, President Ronald Reagan issued a needed finding

that exporting North Slope gas would not hurt Lower 48 consumers. The U.S. natural gas shortages of the 1970s were gone – price and pipeline deregulation triggered drilling that found trillions of cubic feet of new gas reserves.

In 1989, the U.S. Department of Energy authorized Yukon Pacific to export of up to 14 million metric tons of LNG per year (about 1.8 bcf a day) to Japan, South Korea and Taiwan.

Both this export authorization and the presidential finding contained language that cautioned the government wasn't favoring the Yukon Pacific project over a pipeline through Canada. Officials in Canada and executives with Alaskan Northwest had expressed worry that the Yukon Pacific project might kill the Canada line. "The DOE is not dictating that a specific project should be undertaken for developing North Slope natural gas. The approval neither commits any natural gas supplies to Yukon Pacific nor creates any regulatory impediments to other North Slope natural gas projects, including ANGTS (Alaska Natural Gas Transportation System, the Alaskan Northwest-sponsored pipeline through Canada authorized in 1977). Rather, the approval is intended to spur competition to develop North Slope natural gas efficiently, with the marketplace determining the course of development," the DOE order said.

Year-by-year Yukon Pacific obtained the paperwork needed for its LNG project.

But paperwork got the company only so far. It never had gas for its pipeline to carry.

2002

Alaska voters approve creating Alaska Natural Gas Development Authority, a state agency charged with obtaining North Slope gas for an LNG project. Agency languishes, however.

2004

State receives separate applications under the SGDA from pipeline companies, natural gas producers and others.

2003

Alaska enacts Stranded Gas Development Act to let any gas pipeline sponsor negotiate state fiscal terms, not just an LNG sponsor as in the 1998 law.

October 2004

Congress enacts the Alaska Natural Gas Pipeline Act, which streamlines federal permitting for a project, limits lawsuits and authorizes \$18 billion in loan guarantees, adjusted for inflation, for gas delivery to Lower 48.

ELEPHANT IN A DOG HOUSE

Yukon Pacific executives often railed at how North Slope producers were stymieing the LNG project by not selling their gas.

The whole story is more faceted. Natural gas does rise up wells with crude oil. But the producers injected the gas back underground to scour more oil from Prudhoe and nearby fields. This not only was prudent because the gas could be saved for later while coaxing much more valuable oil to the surface. But the practice was mandated by state regulators charged with making sure Alaskans got the highest value for their resources.

Beyond that, Yukon Pacific's project was handicapped by two fatal flaws: It would produce too much LNG and the gas would be too expensive.

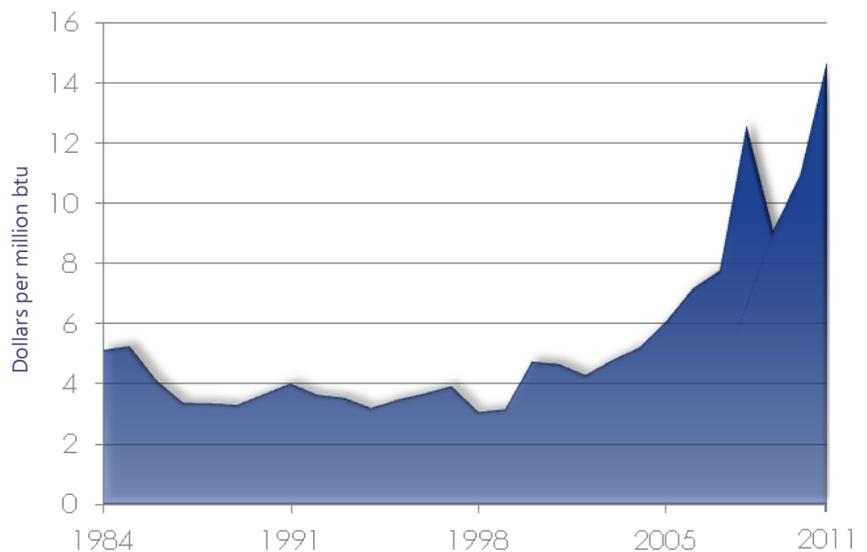
Yukon Pacific's project would have exported 14 million metric tons a year of LNG. That was too much for the small but growing LNG market to absorb easily. In 1990, demand from the nine countries worldwide that imported LNG totaled about 50 million metric tons, according to the International Gas Union. Yukon Pacific would have boosted global LNG supplies by 28 percent. Demand wasn't growing that fast, and other LNG makers were keeping pace by expanding their less-expensive production. Yukon Pacific was trying to stuff an elephant into a doghouse.

Price was another barrier. The Yukon Pacific project called for piping gas 800 miles, superchilling it into a liquid and shipping it to Asia. The Japan price for LNG topped \$5 per thousand cubic feet the year Hickel conceived Yukon Pacific. Hickel's group figured it could hold its costs to \$5.67 to \$7.16 per thousand cubic

feet of gas. It forecasted LNG would be priced at \$7.89 in 1988 in Asia, with 3 percent annual price inflation after that. If Yukon Pacific could ward off big cost overruns on its project, everyone would make money.

But the Asian LNG price was linked to oil, not inflation. And oil prices were falling. In 1988, the average price in Japan was \$3.34, according to the 2011 BP Statistical Review of World Energy. The price didn't get much higher for a long time. From 1987 through 1999, the LNG price in Japan averaged \$3.47. Other LNG projects in Asia could hit that price and make money. With LNG sold under decades-long contracts, the price risk for buyers was too great and Yukon Pacific's project couldn't complete.

Japan LNG price 1984-2010



Sources: BP Statistical Review of World Energy 2011; World Bank

2004-2006

Gov. Frank Murkowski negotiates contract with ExxonMobil, BP and ConocoPhillips under the SGDA. Terms include gas taxes locked in for 35 years and significantly higher oil taxes, but no more changes for 30 years.

2006

Public pans proposed Murkowski contract. Legislature never votes on it but does raise oil taxes. Murkowski loses re-election bid.

2007

Alaska enacts Gov. Sarah Palin's Alaska Gasline Inducement Act over protests of the big three North Slope producers. Law authorizes up to \$500 million in pre-construction subsidies to a proposed project that meets certain state conditions.

June 2008

State awards AGIA license to TransCanada. BP and ConocoPhillips say they will look at building a non-AGIA sanctioned pipeline to Canada.

YUKON PACIFIC DREAM FADES

Still, determined optimism defined the public façade of Yukon Pacific executives.

"We agree with the view that the world is awash in natural gas," one said in 1986. "But we disagree with the view that waiting (for gas prices to strengthen) is the way to go. That won't make anything happen."

In 1987, a Yukon Pacific executive hopefully cited new forecasts that annual LNG demand in Japan, South Korea and Taiwan together would swell by 7.5 million to 8.5 million metric tons by the mid-1990s. But even if Yukon Pacific captured 100 percent of that growth, it would have fallen far short of the 14 million tons it needed to sell.

In 1989, an executive said his company was "dealing very seriously" with a South Korea buyer that could buy 3 million tons a year. In 1990 he said he had a letter of intent – a document that precedes a contract – from a Korean buyer for 2 million tons a year with an indication the company might want an additional 2 million.

In 1992, a Yukon Pacific executive said a Taiwan purchaser had signed a "memorandum of intent" for an confidential amount of gas, adding to a tentative commitment from a South Korea buyer for 2 million to 5 million metric tons a year. But the company never could put together a solid deal.

Asian gas buyers and government officials encouraged Yukon Pacific to build the project. A more diverse set of LNG sellers could help give them the reliability of supply they desired while bringing price competition to the market. But encouraging Yukon Pacific was not the same as becoming a customer.

A 1991 article in the Anchorage Daily News outlined the problem: Yukon Pacific would need to sell 8 million tons a year to Japan – about one-seventh of that nation's expected need. "The standard contract is on a 'take or

pay' basis, which means once they contract for the gas, they pay for it whether or not they need it. Business leaders here (in Japan) believe their gas market will grow rapidly over the next several years, but they're not willing to bet billions of yen on it just in case they're wrong." The reporter interviewed Tokyo Electric Power Co.'s fuel department chief, who said Japanese companies can buy more gas when they need it from Indonesia, Malaysia or elsewhere, places that can boost their LNG production quickly and cheaply. The Yukon Pacific project was burdened by the cost of building an 800-mile pipeline.

Still Yukon executives persevered. In 1996, they released a study that concluded their LNG export project, now estimated to cost \$18.4 billion, could turn a profit, pour billions in taxes and royalties into the state treasury and result in hundreds of new long-term jobs.

Not so fast, came the chilly response from North Slope producers. Look at the assumptions, they said: The project works only if it can lock in buyers for 30 years willing to pay 12 percent more than 1996 market prices, with the price escalating 3 percent a year after that. A senior Atlantic Richfield executive termed the assumptions "aggressively optimistic."

"It doesn't help the project progress if we're painting an unrealistic picture," he said.

By then, Atlantic Richfield and BP, the two companies that operated the Prudhoe Bay field, were starting to blow life into their own long-dormant hopes for a North Slope gas pipeline.

Those companies were gazing into a future where Prudhoe Bay crude production will have fallen so much that it made sense to start piping some natural gas off the North Slope instead of reinjecting it to produce more oil.

Maybe the market will be ready for a gas pipeline by

2008-2011

Yukon Pacific loses bid to extend conditional right of way across state land, fails to get federal authorization extended for its Valdez LNG plant, and gives up federal-land right of way.

2010

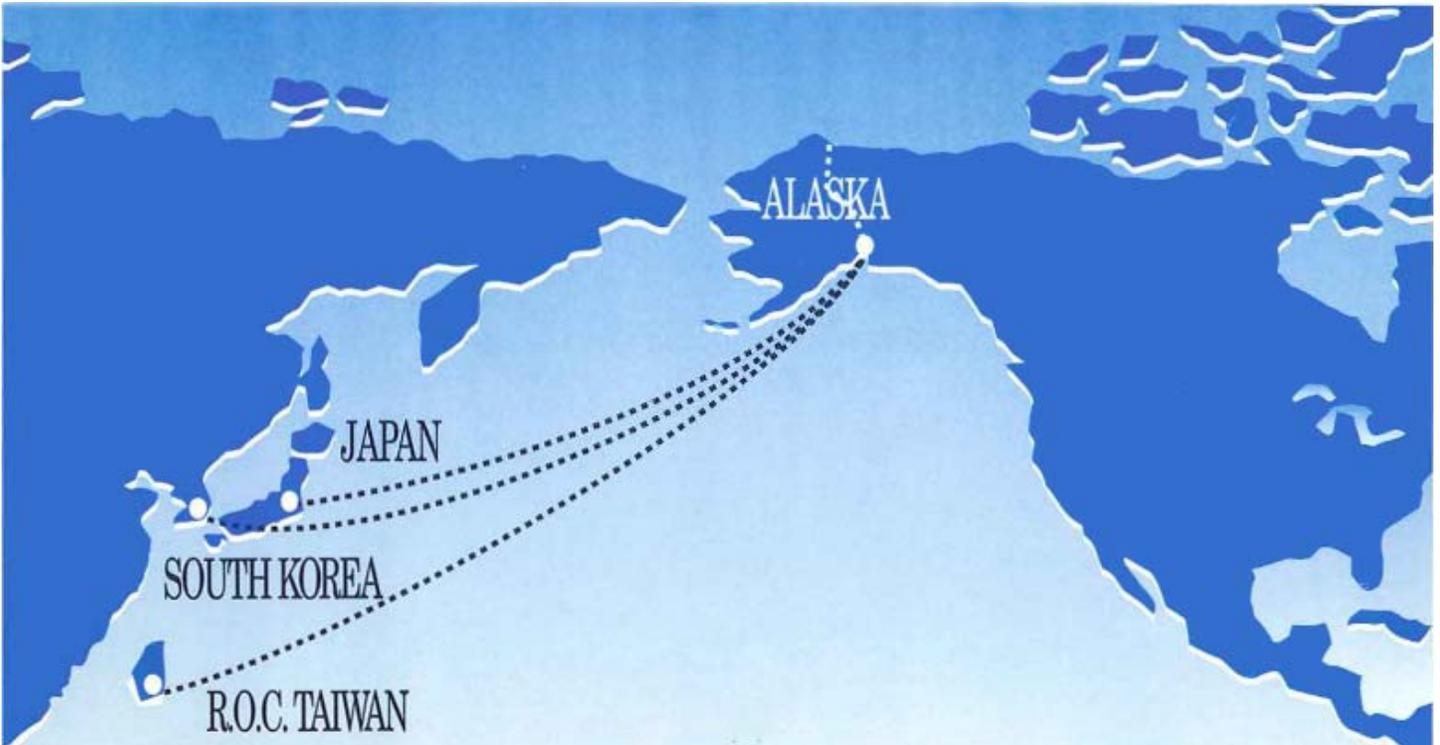
TransCanada/ExxonMobil and BP/ConocoPhillips separately hold open seasons soliciting customers for their proposed pipelines. Neither project lands customers.

2009

TransCanada gets a project partner: ExxonMobil, the largest holder of North Slope gas reserves.

May 2011

The BP/ConocoPhillips project disbands, citing "lack of customer support." The companies spent \$165 million.



Source: Yukon Pacific

Map of the project Yukon Pacific put on promotional materials

2005 or 2010, they said. Possibly it would be an LNG project, they said.

Big oil was sucking the wind out of Yukon Pacific's sails. With its momentum fading the company slashed its staff in 2001 and slowly started packing up.

In 2008, Yukon lost its conditional right-of-way that would let the pipeline cross state land. In 2010, the Federal Energy Regulatory Commission denied Yukon Pacific's request for more time to build an LNG plant. In October 2011, the company gave up its federal right-of-way grant.

Despite Yukon Pacific's demise, LNG fever held strong through the years among certain Alaska leaders.

In 1998, state legislators in Juneau passed the Stranded Gas Development Act designed to provide state incentives to boost prospects of an LNG project. But only an LNG export project; no one else need apply.

The law didn't help; no one asked to negotiate fiscal terms with the state. The LNG dream went on life-support.

But the Alaska gas pipeline project was entering a new phase. The new burst of life came courtesy of the North Slope producers and their resurrected ideas for a pipeline, and a new concern that the nation was running short of natural gas.



August 2011

The Federal Energy Regulatory Commission announces it plans to write an environmental impact statement for the TransCanada/ExxonMobil project.

January-February 2012

FERC holds Alaska public scoping meetings for an EIS and conducts government-to-government consultations with Alaska Native tribes.

2012

Lower 48 natural gas prices sink to 1990s levels amid shale-gas boom.

March 2012

ExxonMobil, ConocoPhillips, BP and TransCanada announce they are joining forces to consider an LNG export project. Most work on pipeline to Canada gets suspended.

2000 to today: Interest in pipeline revives

The Alaska gas pipeline project got another life in the late 1990s as North Slope producers showed renewed interest in tackling the job.

Oil production from the flagship Prudhoe Bay field had plunged about 50 percent since its peak a decade earlier. With Prudhoe fading, perhaps the time was near for marketing the megafield's natural gas, which largely had been reinjected for 20 years to push more oil from the reservoir. But there was still that pesky problem: Could a gas line make money?

The market targeted in the 1970s – the Lower 48 – remained unattractive. Natural gas prices were too low.

But Japan showed promise. The Japanese gas market was just one-ninth the size of the Lower 48 market in 1999 – too small to absorb the massive volume of liquefied natural gas an Alaska project would produce. But the appetite of utilities there and in South Korea had been growing, and with continued growth might reach the critical mass an Alaska project needed. They also paid more for LNG than U.S. buyers paid for pipeline gas.

The lack of a gas project gnawed at some Alaska leaders. One in particular, state Rep. Ramona Barnes of Anchorage, chairwoman of a House-Senate gas task force, made an LNG project her crusade.

In early 1997, Barnes lectured a roomful of oil lobbyists and executives: "We're going to build this project in my lifetime." (She died in 2003.)

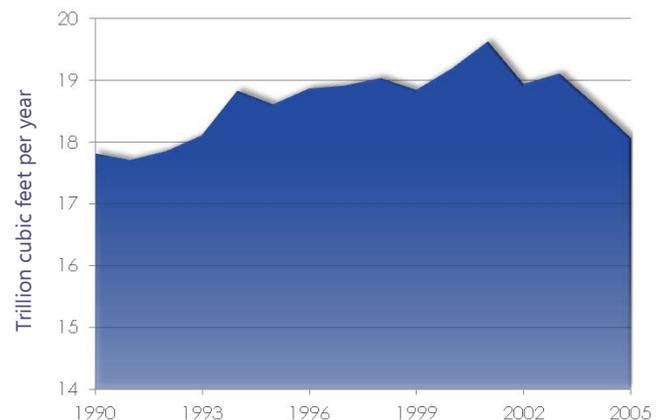
The main producers – BP, Exxon and Arco – had been talking for a year or two about how Asia might want Alaska LNG, perhaps as early as 2005, more likely closer to 2010. But the project's \$15 billion estimated cost was a barrier, making Alaska LNG too expensive to compete for the growing demand, the president of Arco Alaska said after visiting Asia buyers in fall 1995.

In March 1997, the producers said they would study how to shave costs from an LNG project. But they wanted the state to change taxes and/or royalties to improve the economics, too.

In 1998 Alaska enacted the Stranded Gas Development Act. "Stranded" due to no pipeline to carry the North Slope's estimated 35 trillion cubic feet of gas reserves to market. The new law didn't change taxes, but it allowed the producers and state to negotiate a fiscal contract to replace the normal set of taxes. It was unclear whether this was constitutional. At Rep. Barnes' insistence, the contract could apply only to an LNG project.

U.S. dry gas production 1990-2005

Annual production dropped 6% between 2000 and 2005



Source: U.S. Energy Information Administration

That law lapsed a few years later with no takers. Asia prices and demand were up, but not nearly enough.

Then the LNG project all but faded from view, eclipsed again when a freak of nature put new energy behind the old plan: Pipe Alaska gas to the Lower 48.

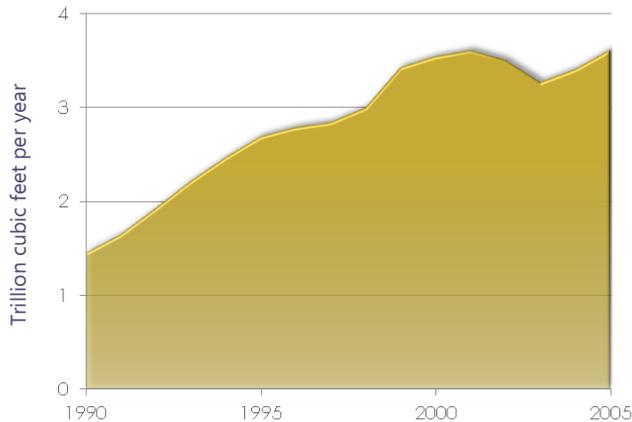
This time, the Lower 48 route had real traction.

First, government – initially the state but Congress as well by the early 2000s – was actively looking for ways to help.

Second, North Slope producers now were publicly engaged in trying to solve how to move Prudhoe Bay gas to market profitably.

U.S. net gas imports 1990-2005

U.S. relied on imported gas, mainly from Canada, as consumption outpaced production



Source: U.S. Energy Information Administration

Government and producer enthusiasm wasn't enough, however. Something needed to shore up Lower 48

natural gas prices. Without higher prices, the cost of piping Alaska gas 3,000 miles to Chicago would make the gas too expensive to attract buyers.

On that front, good fortune for the project was coming.

As 2000 began, anxiety resurfaced that the United States was running short of natural gas – the same anxiety that birthed Alaska gas pipeline plans 30 years earlier. The nation's old reliable gas fields were petering out.

Soon, enflaming that anxiety, the Lower 48 was whacked with a nasty winter – the coldest in years.

Natural gas prices spiked during the winter of 2000-2001.

And a race was on to pipe Alaska gas south to the rescue.

NEW ENERGY FOR A GAS PIPELINE

For utilities and other buyers, their affection for natural gas flipped, flopped, then flipped again during the span of years starting in about 1999. It became the fuel of choice, then the fuel of risk, then back to the fuel of choice again.

The buyers' manic responses were swayed by the breathtaking volatility of natural gas prices during this period.

As gas-shortage anxiety bloomed in the early 2000s, several Alaska gas pipeline ideas came forward. These proposals exposed schisms among Alaskans and among the oil producers over which idea was wisest, complicating efforts to unify behind a single project.

Most of the ideas responded to the same cue: Natural gas prices that blasted off like a rocket.

In 1999, Lower 48 gas prices averaged a ho-hum \$2.20 per thousand cubic feet at the wellhead, roughly the average of the previous few years.

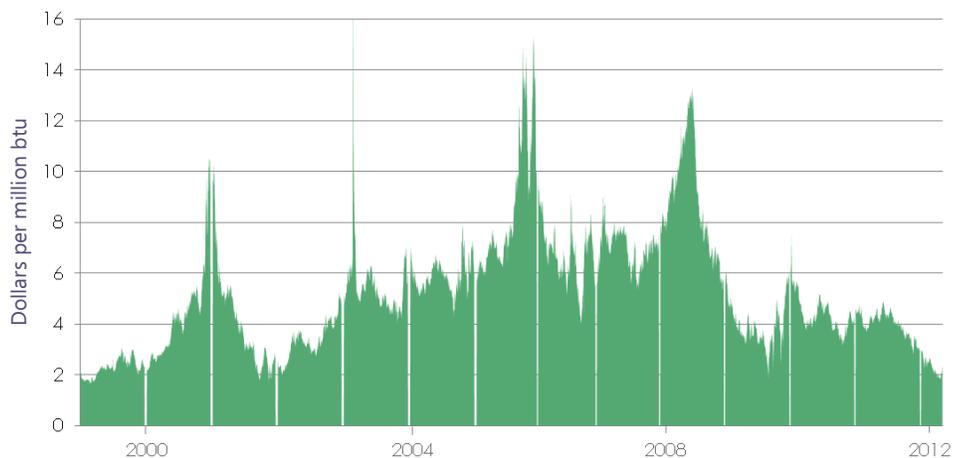
But as the anxiety sank in during the next year, prices began to creep up.

The benchmark Henry Hub spot price topped \$3 in April 2000 and \$4 in June before leveling off. Then it got very cold in November. The price spiked to \$6 around Thanksgiving, and by Christmas it topped \$10, more than four times higher than at the start of the year.

The catalyst was an unusually cold weather – the 26th coolest winter in the previous 106 years, the National Oceanic & Atmospheric Administration reported at the time.

Natural gas price volatility 1999-2012

Spot price at U.S. Henry Hub



Source: Office of the Federal Coordinator research

"The winter began with record or near-record cold across much of the nation in December as arctic air spread from the Rocky Mountains to the East Coast behind a series of strong cold fronts," NOAA said. "Severe winter storms and record snowfall fell in many cities from Amarillo, Texas, to Buffalo, New York." (Meanwhile, Alaskans were enjoying their mildest winter since statewide records began in 1918.)

In California, power companies imposed rolling blackouts on customers.

The cold weather broke later that winter. Gas prices deflated like a botched soufflé. The Henry Hub price plunged under \$6 in February and pierced \$5 in May. By Thanksgiving 2001, the spot price had even penetrated below \$2 briefly.

But the shortage fears lingered and a new paradigm of high prices took root in the U.S. gas industry. The Lower 48 wellhead price averaged \$4.92 per thousand cubic feet from 2001 through 2006, double the price of the late 1990s.

The answer to high prices seemed obvious: Get more supply. Besides renewed interest in the Alaska gas pipeline project, billions of dollars were invested in Lower 48 LNG import terminals.

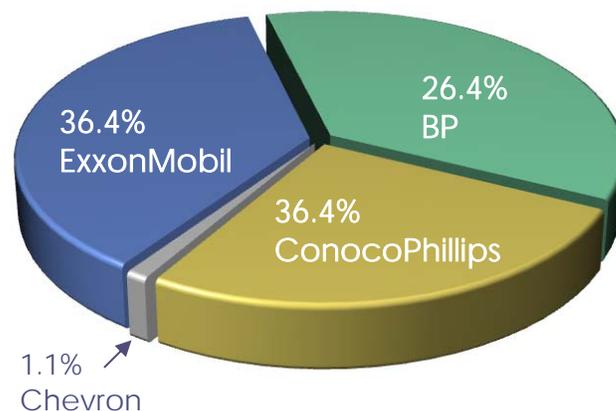
In 2000, the three major North Slope producers formally teamed up on a fresh look at piping Alaska's gas to market.

Easing their effort was a recent détente that took hold among them. On the surface, the oil industry can appear monolithic, hand-in-hand sharing risks and rewards while jointly developing fields. To some extent that does describe the industry's dynamic.

But a closer look often reveals divisions not readily apparent from afar. And this was true for Prudhoe Bay's big three.

A gnarly schism involved their unbalanced ownership of the oil and gas rights. BP owned 51 percent of Prudhoe's

Prudhoe Bay oil and gas ownership



oil production but only 14 percent of the gas. ExxonMobil and Arco (soon to be bought by Phillips) each owned 23 percent of the oil and 43 percent of the gas. BP wanted the gas retained to help produce more oil. ExxonMobil and Arco had a stronger urge to move some gas to market.

This schism flared among the companies from time to time, but for the most part it was invisible to the public. The détente occurred in April 2000. The three companies announced a major shuffling of their ownership interests so that each company's share of oil was the same as its share of gas.

That ownership shuffle more closely aligned their interests in developing Prudhoe Bay gas.

Within a few months, they were zeroing in on a project. In September 2000, BP and Phillips told the U.S. Senate Energy and Natural Resources Committee they hoped to "achieve consensus on route and timing" within a year.

Internally, the three companies were not fully aligned on the project. ExxonMobil was pushing a route that was about to ring alarm bells within Alaska, the national environmental community and even Congress.

OVER THE TOP

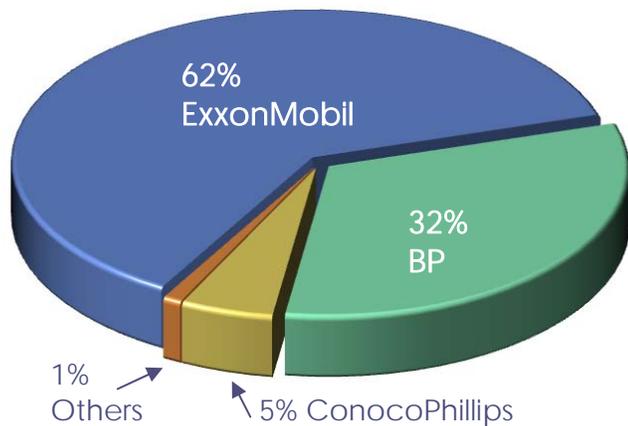
Besides ExxonMobil's Alaska North Slope holdings, its Imperial Oil subsidiary had smaller gas discoveries in the Mackenzie Delta across the Canadian border.

In the 1970s, Exxon (and the other two producers) backed the unsuccessful Arctic Gas project that would

have strung a pipeline eastward from Prudhoe Bay to the Mackenzie Delta then south through Canada and into the U.S. Midwest and West.

That project died in 1977 when President Jimmy Carter and the Canadian government backed a competing

Point Thomson oil and gas ownership



proposal that would pipe North Slope gas south into Interior Alaska then southeast along the Alaska Highway to the Lower 48.

In 2000, ExxonMobil saw an opportunity to resurrect the Prudhoe-to-Mackenzie project, dubbed the "over-the-top" route. This time it would pick up gas from the company's big Point Thomson discovery east of Prudhoe then wade offshore coastal Alaska to avoid trenching the Arctic National Wildlife Refuge as the 1970s project proposed. Conservationists had spent decades lobbying to keep oil and gas development out of ANWR.

BP and Phillips were more attuned to the mood of Alaskans about wanting a south-bound pipeline that would bring some North Slope gas to the state's population center.

In late September 2000, Dick Olver, BP's global production chief, said in an Anchorage speech that speculation about a route or even a project was premature. BP was considering all options, including LNG and converting gas to a liquid that could flow down the underused trans-Alaska oil pipeline.

But mostly he discussed a pipeline into Canada. In a nod to the controversy stirring on the over-the-top route, Olver said the project ultimately must be "in the best interests of U.S. consumers, the people of Alaska and our Canadian stakeholders."

"The stars appear to be aligning for Alaska," he said.

The CEO of Phillips had a similar message in an Ohio presentation. "The time is right, the technology is here and the market is here," said Jim Mulva. "We are completely committed to making this a reality."

In December 2000, the big three producers announced they had formed the North American Natural Gas Pipeline Group to assess costs and technology, pick a route and apply for construction permits. They budgeted \$75 million and ultimately spent \$125 million.

The prospect of an over-the-top line alarmed Alaska political leaders. Gov. Tony Knowles in November 2000 declared that route off-limits, dropping a slogan that caught on: "My way is the highway."

The Alaska Legislature followed in 2001 with a law that prohibited granting state rights of way for an over-the-top route. Some in Congress also began discussing a ban on the route.

PIPELINE PLANS RETREAT

In mid-2001, natural gas prices were in a trough, a temporary one as it turned out.

The big three producers started sending signals that their enthusiasm was ebbing for an Alaska gas pipeline. Preliminary results of their joint study concluded a pipeline project might not be profitable enough to justify taking the huge risks involved, including the gas-price risk.

By 2002, Congress was actively looking for ways to help the project's economics, estimated by the producers in 2001 to cost almost \$20 billion, six times more than the next most expensive North America gas pipeline. Among the options suggested was a federal tax subsidy to

producers if gas prices dip below a given floor, repayable when prices break through a ceiling. That idea died but other ideas started to stick, many derived from the Alaska Natural Gas Transportation Act of 1976 that was custom-made to boost projects contemplated back then.

Finally, in 2004, Congress passed the Alaska Natural Gas Pipeline Act, which, like the 1976 law, streamlined government oversight and limited judicial challenges to a pipeline project. But it went further. The law authorized up to \$18 billion in federal loan guarantees for a project to move Alaska gas to the Lower 48 (worth almost \$22 billion today after adjusting for inflation), and it barred construction of an over-the-top pipeline. (The law also created the Office of the Federal Coordinator.)

The Alaska Legislature was busy, too. In 2003 it revamped 1998's Stranded Gas Development Act to allow fiscal-term negotiations involving any pipeline project, not just an LNG project as the earlier law specified. The new law bore the same name. The

constitutional issue of setting taxes by contract was still unresolved.

Soon, companies and others with gas pipeline ideas lined up to talk terms with the state.

STATE NEGOTIATING TEAM FRACTURES

As the state considered the applications to negotiate, it became clear an internal fight was under way in the administration of Gov. Frank Murkowski.



Gov. Frank Murkowski

The schism would entangle state government for the next four years.

Some state executives believed reaching terms with the big three producers was key to securing a pipeline.

Others believed that limiting the producers' control of the pipeline would prompt more companies to explore for North Slope oil and gas. Already the

prospects of a gas pipeline had lured new players. In May 2001, after the previous winter's gas-price spike, six companies acquired North Slope gas exploration leases – the first sold in decades. Anadarko was actively drilling for gas.

The stranded-gas applications stocked each side with ammunition. Their diverse approaches to a pipeline project included:

- *A pipeline-company project.* TransCanada and Foothills Pipe Lines, two Canadian pipeline companies holding rights to the Alaska Highway project and route sanctioned in 1977, blew the dust off of their plans. TransCanada wanted the state to buy gas from the North Slope producers and market it. Later that idea morphed into both TransCanada and the state buying and marketing the gas.

Separately, MidAmerican Energy Holdings Co., a Lower 48 pipeline company, proposed a pipeline to Canada, provided it could get a five-year exclusive deal with the state that would force the producers to negotiate putting gas in the line. MidAmerican teamed with an Alaska Native corporation and an Anchorage startup headed by a former Arco executive. But the state told MidAmerican it would not

get an exclusive deal, and the pipeline company walked away in a public huff.

- *An LNG project.* A trio of Alaska local governments – the Fairbanks North Star Borough, the city of Valdez and the North Slope Borough – formed the Alaska Gasline Port Authority in the late 1990s. Their proposal mutated over the years, but early on they proposed a pipeline and LNG plant at Valdez financed via low-interest debt the authority would issue. Low-cost debt would help the project economics. The LNG could go to Asia or the West Coast, wherever buyers could be found.

The Murkowski administration gave the port authority application an icy reception. Murkowski himself scoffed in 2006: "Would you invest in a project that had no gas, no financing, no contract for the sale of gas, no shipping commitments, no West Coast regasification facilities, no loan guarantee if exported, no Jones Act waivers (so foreign LNG tankers could be used) and no expertise in building a project of this size?"

Separately, in 2002 Alaska voters approved a ballot initiative pushed by LNG fans that created a state agency that could, among other things, buy North Slope gas, pipe it to Prince William Sound for export and finance the project with low-cost revenue bonds. The new agency, the Alaska Natural Gas Development Authority, never gained much momentum and governors downsized its mission over time, although it still exists.

- *A producer-sponsored project.* The Murkowski administration worked hardest on this. Over three years negotiators hammered out key terms – a state equity ownership, gas taxes locked in for 35 years after pipeline startup, much higher oil taxes now but a lockdown on further oil-tax changes for 30 years.

Murkowski made it clear he believed a deal with producers was in Alaska's best interest. In fall 2005, dissenters within his gas team left their jobs – one fired and the rest resigning in protest. Besides objecting to a

producer-owned pipeline, the dissenters believed the contract should have included a commitment to actually build the pipeline.

After much public griping about "Where is the deal?" Murkowski unveiled his proposed contract in spring 2006, with just months left in his gubernatorial term.

Much of the public panned the proposal. The sentiment was that the state got out-negotiated. That the deal came from a politically unpopular governor also made it hard to accept. State legislators never even voted on the

contract, although they passed a significant oil-tax increase without the 30-year lockdown. The producers got smacked with the one piece of the deal they didn't really want but were willing to accept as part of the package. The Legislature just unwrapped the package.

Murkowski lost his re-election bid in the August 2006 Republican primary.

The new governor elected that November, Sarah Palin, was about to usher Alaska's gas pipeline efforts down a new path.

THE PALIN PLAN

Early in her 2006 campaign, Palin fell under the spell of Alaska's LNG boosters, and an LNG project became a central element of her platform.



Gov. Sarah Palin

But later in the campaign she backed off full support for LNG. After being sworn in, she hired all of the Murkowski administration dissenters who had left their jobs a year earlier. They helped guide the state's Palin-era approach to a gas pipeline project, an approach that continues today.

In May 2007, the Alaska Legislature passed Palin's Alaska Gasline Inducement Act. AGIA

said the state would provide up to \$500 million in pre-construction subsidies to a project whose sponsor agreed to certain "must haves." These included:

- North Slope gas would be made available for Alaska use, though someone other than the project developer would need to move the gas from the big pipeline to consumers.
- Certain actions to hold down the pipeline tariffs to encourage North Slope exploration and development.
- Agreement to hire Alaskans and Alaska companies.
- A firm timeline for project development, though no commitment to build the pipeline.
- Agreement to expand the pipeline to accommodate future shippers, with all shippers contributing to the expansion cost.

- And the biggie: A commitment to continue engineering and other work toward getting federal approval of a pipeline even if shippers fail to pledge enough gas during the initial open season to make the project viable. The state believed shippers eventually would sign up, and getting a federal certificate for a pipeline would keep the project moving forward while negotiations with shippers progressed.

The big three North Slope producers slammed many of the AGIA terms. The deadlines were too inflexible, they said. They ignored economic reality. Where is the fiscal stability they need before committing gas to the line and promising to pay the tariff? Why should original shippers subsidize future shippers? Why continue working on the project if the open season fails?

BP and ConocoPhillips (Conoco and Phillips merged in 2002) announced a non-AGIA sanctioned gas pipeline venture called Denali – The Alaska Gas Pipeline in April 2008, 10 months after AGIA became law. They would look at building a \$35 billion project down the Alaska Highway to Alberta, they said. But after a failed 2010 open season, they disbanded Denali in May 2011, citing "a lack of customer support." The companies spent \$165 million on their effort.

The state awarded the AGIA license to TransCanada later in 2008, and ExxonMobil joined that effort the next year. This partnership – called the Alaska Pipeline Project – also held its open season in 2010. It offered two options: A \$32 billion to \$41 billion Alaska Highway pipeline to Alberta, or a \$20 billion to \$26 billion pipeline to Valdez, with other companies to bear the additional cost of an LNG plant and tankers.

ALASKA PIPELINE PROJECT AT-A-GLANCE

Project:	Pipeline from Prudhoe Bay south to Interior Alaska, then into Canada along the Alaska Highway for delivery to U.S. Midwest and West
Sponsors:	Partnership between TransCanada and ExxonMobil in the U.S. and Canada
Capacity:	4.5 billion cubic feet a day
Length:	750 miles in Alaska, 1,000 miles in Canada
Cost:	\$32-41 billion (includes \$12 billion gas treatment plant)

Source: Alaska Pipeline Project

TransCanada/ExxonMobil negotiated with bidders, but failed to reach any shipper agreements. Despite the lack of pipeline customers, the partnership remains engaged with the Federal Energy Regulatory Commission, which has oversight of gas projects.

Meanwhile, as was true in the 1970s and again in 2001, the world of natural gas is in flux.

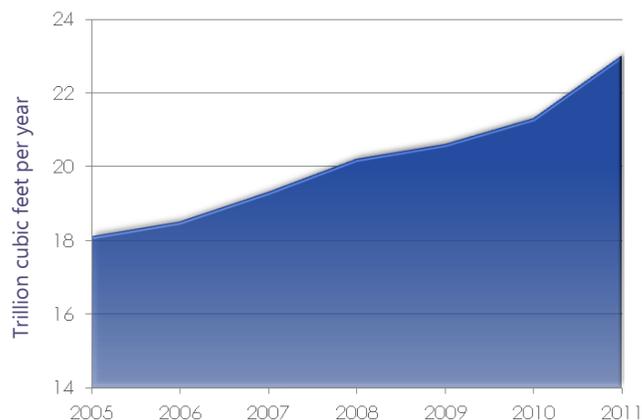
Fears of a Lower 48 natural gas shortage are gone. New supplies of shale gas are more than offsetting declines from aging conventional gas fields. Prices have sunk to late-1990s levels.

Over in Japan, the world's largest LNG market, prices are sky high. LNG prices there are linked to oil prices, which are soaring. Japan's disaster at its Fukushima nuclear power plant in 2011 boosted demand for LNG as a fuel at least temporarily, awarding LNG sellers a juicy price premium.

These developments might be adding a new curve to the 40-year rollercoaster ride that describes the journey to realize an Alaska gas pipeline project. On March 30, 2012, the CEOs of ExxonMobil, ConocoPhillips and BP wrote to Alaska Gov. Sean Parnell to say they are working with

U.S. dry gas production 2005-2011

Annual production rises 27% between 2005 and 2011



Source: U.S. Energy Information Administration

TransCanada to reassess an LNG export project from Alaska.

"As a result of the rapidly evolving global market, large-scale liquefied natural gas (LNG) exports from southcentral Alaska will be assessed as an alternative to gas line exports through Alberta," the chief executives said.

"We are now working together on the gas commercialization project concept selection, which would include an associated timeline and assessment of major project components including in-state pipeline routes and capacities, global LNG trends, and LNG tidewater site selections, among others," the letter said.

While working with BP and ConocoPhillips to look at a possible LNG export project, TransCanada/ExxonMobil has notified FERC staff that it will hold off on filing an application for a pipeline to Alberta.

The state has asked the companies to solicit market interest in an Alaska LNG project by the end of December 2012.



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For more information, please visit our website: www.arcticgas.gov

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