

**ALASKA LEGISLATURE  
JOINT COMMITTEE ON NATURAL GAS PIPELINES**

April 10, 2002

3:42 p.m.

**SENATE MEMBERS PRESENT**

Senator John Torgerson, Chair  
Senator Rick Halford  
Senator Pete Kelly  
Senator Donald Olson, alternate

**SENATE MEMBERS ABSENT**

Senator Johnny Ellis

**HOUSE MEMBERS PRESENT**

Representative Brian Porter  
Representative Mike Chenault, alternate  
Representative Reggie Joule, alternate

**HOUSE MEMBERS ABSENT**

Representative Joe Green, Vice-Chair  
Representative Scott Ogan  
Representative John Davies  
Representative Hugh Fate, alternate

**COMMITTEE CALENDAR**

UPDATE ON CALGARY CONFERENCE: SENATOR TORGERSON  
UPDATE ON FEDERAL LEGISLATION: PATRICK COUGHLIN  
INTRODUCTION OF SB 360 - "ALASKA NATURAL GAS PROJECT ACT"  
ECONOMIC MODELS OF PIPELINE PROJECTS: DR. DOUG REYNOLDS

**PREVIOUS COMMITTEE ACTION**

None

**WITNESS REGISTER**

PATRICK COUGHLIN, Special Consultant  
to the Senate Resources Committee  
Alaska State Legislature

Capitol Building, Room 427  
Juneau, Alaska 99801

POSITION STATEMENT: Discussed federal legislation before Congress and contrasted it with provisions suggested by the committee.

DOUGLAS B. REYNOLDS, Ph.D.  
Northern Economic Research Associates  
Fairbanks, Alaska

POSITION STATEMENT: Gave slide presentation on "Economic Models of Pipeline Projects"; provided handout and answered questions.

#### **ACTION NARRATIVE**

#### **TAPE 02-6, SIDE A**

Number 0001

**CHAIRMAN JOHN TORGERSON** called the Joint Committee on Natural Gas Pipelines meeting to order at 3:42 p.m. Members present at the call to order were Senators Torgerson and Olson, and Representatives Porter and Joule. Arriving as the meeting was in progress were Senators Halford and Kelly, and Representative Chenault.

#### UPDATE ON CALGARY CONFERENCE: SENATOR TORGERSON

Number 0039

CHAIRMAN TORGERSON announced the first order of business, an update on the Global Petroleum Show to be held in Calgary, Alberta, on June 11-13, 2002. He surmised that the show is probably the largest in North America. [In packets was a memorandum from Chairman Torgerson to the committee; information from the International Alaska Highway Pipeline Committee, including a mission statement and principles; and a registration packet and related backup materials.]

CHAIRMAN TORGERSON informed members that the charge for the committee's portion of the conference had been settled on three days before. Invitations for one panel had been extended to the chairman of Canada's National Energy Board (NEB) and to Patrick Henry Wood III, Chairman, Federal Energy Regulatory Commission (FERC). Also invited were the Regulatory Commission of Alaska (RCA) and the equivalent provincial and territorial regulatory agencies from British Columbia, Alberta, and Yukon Territory.

CHAIRMAN TORGERSON noted that the focus would be on NAFTA [North American Free Trade Agreement] issues, including cross-border contractors' going back and forth and what kind of problems that could entail; he said at least one NAFTA attorney has confirmed thus far. In addition, the university is to speak about training and any reciprocity agreement that might be entered into for cross-border training. Furthermore, a panel of the "ministers and commissioners of labor" will discuss other labor-related issues.

CHAIRMAN TORGERSON advised members of the intention to hold the foregoing discussions on June 12, although he indicated a possibility of extending into June 13 if necessary. He said [the conference] is cosponsored by the international committee he'd established [the International Alaska Highway Pipeline Committee], which includes members from British Columbia, Alberta, and Yukon Territory. In addition, there will be representatives from the Northwest Territories, including people from its university, although it has no members on the international committee.

CHAIRMAN TORGERSON noted that the show will be large, but with no registration fee because most of the money will be made from the trade show itself. There will be a reception for the international group, which he indicated the show is paying for.

Number 0236

CHAIRMAN TORGERSON advised members that he most likely wouldn't call a meeting of the Joint Committee on Natural Gas Pipelines at the show, but encouraged as many members as possible to participate. He noted that a booth has been rented and said the Division of Oil & Gas will hand out promotional lease information in order to foster interest from companies; in addition, the booth will be available to any Alaskan businesses, 25-30 of which have shown interest so far in sending a representative. Details are pending, with few people confirmed. Chairman Torgerson concluded by indicating the process had just begun, with invitations already extended to many people.

UPDATE ON FEDERAL LEGISLATION: PATRICK COUGHLIN

Number 0325

CHAIRMAN TORGERSON announced the next order of business, an

update on federal legislation currently before Congress. He introduced Patrick Coughlin, a consultant to the Senate Resources Committee, by saying he has been invaluable in working with the attorney hired in Washington, D.C., regarding federal issues. He then explained that the starting point was the principles adopted by the current committee. "We got a lot of those in the bill," he said. "A lot of the language in the bill was ours. So we did relatively good work there - not winning every issue, but coming close."

Number 0371

PATRICK COUGHLIN, Special Consultant to the Senate Resources Committee, Alaska State Legislature, informed members that he would go through the federal Alaska Natural Gas Pipeline Act of 2002 ("the Act"), which is part of the national Energy Policy Act of 2002 being debated by the U.S. Senate now, and would compare it with recommendations made by the current committee.

MR. COUGHLIN noted that during February and early March, many amendments were made to the Act, and there were suggested and rumored amendments as well. Tracking what was going on was difficult, he said, but was helped by Karol Newman, a lawyer retained by the legislature in Washington, D.C. He noted that Chairman Torgerson had spent many hours talking with U.S. Senator Frank Murkowski's staff, other legislative staff, and "our attorneys in D.C." to keep abreast of what was happening there.

Number 0453

MR. COUGHLIN reported that the most recent version of the Act was proposed as a bipartisan amendment on March 21 by U.S. Senators Murkowski and Bingaman. He reminded members that the first proposal put forth by the Joint Committee on Natural Gas Pipelines, on September 19, 2001, was a provision to ban the "over-the-top" route; that is currently in the [U.S.] Senate version of the Act. Under the next proposed amendment, any certificate FERC would issue for the project "shall" require that access be granted for the state's royalty share of its gas; the current version of the Act, by contrast, says it "may" be provided, and only if it doesn't increase existing shippers' costs. Mr. Coughlin noted that it is a little weaker in protecting the state's rights than the current provision in ANGTA [the federal Alaska Natural Gas Transportation Act of

1976], which says "shall".

MR. COUGHLIN highlighted other provisions in the Act dealing with state access. For example, the applicant for a certificate to build the pipeline must conduct a study of in-state needs and present it to FERC; the study must include a description of potential tie-in points within Alaska. Also regarding access, the current committee has requested that RCA and FERC jointly set rates for the in-state portion of the transportation; by contrast, the Act allows FERC to set the rate by itself, but FERC must consult with the state before doing so.

Number 0595

MR. COUGHLIN turned attention to issues regarding "explorer access" for oil and gas companies. These explorers are companies that have lease rights on the North Slope and that currently are either exploring or planning to explore for gas; they would have no ownership interest in the pipeline. Mr. Coughlin reminded members that this committee has requested an open-season provision that would allow the explorers to at least bid in a consistent or fair manner. Under the requested provision, FERC would establish regulations to govern an open season; FERC would consider effective competition in determining how to conduct the open season - in other words, it would set up an open season such that it would continue competition in the oil and gas industry in Alaska; and for any open season beyond the very first one, the procedures would maximize the opportunity to ship gas from oil and gas units other than Prudhoe Bay or Point Thomson, which are held by the current producers. The Act contains that type of provision, Mr. Coughlin reported.

Number 0677

MR. COUGHLIN reminded members of this committee's request that FERC have authority to expand the pipeline under certain circumstances; he said the Act currently grants that expansion authority, although it requires FERC to make more findings than requested. With regard to the request that the explorers only would pay for conditioning services they use, however, that provision was not adopted and isn't currently in the Act.

MR. COUGHLIN noted this committee's request that the term "Alaska North Slope gas" be expanded to include gas resources in

the so-called foothills area of the state and as far south as Nenana; he explained that there is a potential gas basin in Nenana that might benefit if the pipeline goes south and goes through there; that provision was adopted by the [U.S.] Senate. Mr. Coughlin pointed out that one of the three purposes of the Act is to establish a process for providing access to such transportation projects "in order to promote competition and exploration, development, and production of Alaska natural gas."

Number 0805

MR. COUGHLIN reminded members that this committee has wanted to ensure that supporting this "producers' enabling legislation" doesn't hinder "those that had ANGTA rights." Therefore, provisions have been requested to reaffirm ANGTA and allow it to be modernized; those provisions have been adopted as part of the Act. Furthermore, he said, the current committee was concerned about the Yukon Pacific Corporation (YPC) project and had specifically requested a provision to protect the presidential waiver granted for the YPC project; that also has been adopted.

MR. COUGHLIN said the other request relating to ANGTA "fell by the wayside when the 'foothills group' decided that they ... would no longer oppose the producers' legislation." He added, "We did request them, but I'm not sure that they're relevant anymore."

Number 0830

MR. COUGHLIN turned attention to requests relating to Alaskan jobs. He noted this committee's request for a provision calling for approval of a project labor agreement "in the sense of the Senate provision"; he reported that the U.S. Senate has said it urges the sponsors of the project to agree to a project labor agreement." He noted that Congress didn't grant a preference to Alaskan workers, but passed several provisions to enhance opportunities for Alaskan employees and contractors. Mr. Coughlin said those include the following:

The Secretary of Labor is required to prepare a report setting forth a program to train Alaska residents in the skills and crafts required to design, construct, and operate a pipeline, to enhance employment and contracting opportunities for Alaska residents. The report should recommend needed changes to laws or

regulations that act as a deterrent to hiring Alaskans or contracting with Alaskans. And the Secretary of Labor must establish, within one year after preparing the report, training centers within Alaska to train ... Alaskans in the skills necessary. ... And \$20 million is appropriated to the Secretary to carry out the purposes of this particular provision.

Number 0906

MR. COUGHLIN addressed financing proposals. He reminded members that this committee has recommended opposition to any incentives for foreign LNG production that is being brought into the United States; the Act currently provides for none. In addition, this committee has supported having an accelerated-depreciation provision; although one was adopted, it was for ten years, rather than seven. That disagreement between the [U.S.] House and Senate versions of the bill likely will be taken up in a conference committee if the Senate passes the Act, he noted. Furthermore, this committee has supported a provision to reduce price risk uncertainty so long as state finances aren't harmed by such a provision; that provision is being worked on currently. He said he expected to see an amendment to that effect the coming Friday.

MR. COUGHLIN concluded by offering his understanding that if there is a conference [committee] between the [U.S.] Senate and the House on the energy bill, Chairman Torgerson plans to work with such a committee to try to change some of the provisions in the pipeline Act portion to further benefit Alaskan citizens.

Number 0995

REPRESENTATIVE PORTER referred to Mr. Coughlin's mention that [under the Act] FERC is required to consult with the state, rather than having RCA participate. He asked whether the Act says who in the state is supposed to be consulted.

MR. COUGHLIN answered no, specifying that it just says "the state".

REPRESENTATIVE PORTER asked what the state would do if there were no guaranteed access for royalty gas. Would the state have to stand in line at the open season, like everybody else?

MR. COUGHLIN answered that it is unclear. Like any other entity, the state would have the right to petition FERC; as long as the state could show that the gas could be taken off without harming other shippers, and would pay that cost, it could get access. He added, "As I understand it, under the current version, there's no special protection for the state as was contemplated in ANGTA."

Number 1057

CHAIRMAN TORGERSON explained, "Clearly, we have in our leases that the producers have to ship our royalty gas, ... whatever our percent is. So the confusion comes from future discoveries where we have royalty gas, where it would require an expansion of the line or less producer gas shipped down the line, to accommodate our royalty." He reiterated that he is still working on it and that there will be a conference committee [if it passes the U.S. Senate]. He thanked Mr. Coughlin.

INTRODUCTION OF SB 360 - "ALASKA NATURAL GAS PROJECT ACT"

[This was not a scheduled hearing, but an explanation before the Joint Committee on Natural Gas Pipelines.]

Number 1098

CHAIRMAN TORGERSON announced the next order of business, an explanation of SB 360, which was introduced that day by the Senate Resources Committee. As chairman of that committee as well, he explained the intention behind the legislation.

CHAIRMAN TORGERSON expressed hope that SB 360 will become a vehicle for "passage of any of the work that we're currently doing." He said it accomplishes a lot of necessary things. First, it recognizes that there won't be a project built this year. There isn't a lot of work that the legislature needs to do this year, he explained. However, there has been a public expectation that something would happen, such as passage of legislation to provide incentives or help spur the project. "I've said, from day one, that I would not leave my negotiations with an incentive," he said. "I still believe that, that we shouldn't until all the details are laid on the table of what we're doing, what the project economics are."

CHAIRMAN TORGERSON noted that the timeline for receiving the

project economics has continued to slide backwards, with nothing received; he said he isn't sure that information will be received this session, but believes it is important to at least put the parameters together that would direct the administration to start negotiations, for example, with municipalities on some of their issues. In some cases, he noted, it will come back to the legislature for approval later.

Number 1194

CHAIRMAN TORGERSON highlighted provisions of SB 360. It allows the project to be phased under the Alaska Right-of-Way Leasing Act. It gives all agencies the full cooperation of the Department of Natural Resources (DNR) commissioner, "more or less," for expedited permitting. It allows the governor, if he/she finds provisions of the law that impede the project, to propose a waiver. Furthermore, any decisions by the commissioner or other agencies shall be subject to limited judicial review. He remarked, "These are all part of ANGTA that we wanted to have part of our laws." It also says that any judicial action brought must be done within 60 days, he noted.

CHAIRMAN TORGERSON continued, noting that SB 360 allows the commissioner of the Department of Revenue to start negotiations with local governments on property tax "after they are sure that the project is not economically feasible, and then the commissioner will put together a ... [socioeconomic] report on the impacts of local governments, and then ... he may recommend to us whether to waive it all, reduce it, defer it, or whatever; and that would require legislative approval after that work is done." The bill also directs the commissioner of DNR to waive, reduce, or defer all or part of the royalty payments on the project; again, this takes legislative approval, he told members, upon discovery that the project is not economically feasible without taking such action. Furthermore, it allows the Alaska Railroad Corporation (ARRC) to issue tax-exempt bonds for the project.

CHAIRMAN TORGERSON mentioned the commissioners of the respective agencies and noted that under SB 360, companies must agree, before receiving any benefits, to train and hire Alaskans and use Alaskan businesses in the construction and operation of the project, consistent with constitutional provisions. They also must complete a study on in-state demand and submit a plan that must be approved by RCA; complete a study on natural gas

resources in northern Alaska; and submit a plan that must be approved by RCA to maximize access to the project so that competition for Alaskan oil and gas can be promoted. Furthermore, they must update the studies after ten years, and they must agree to the provisions in the right-of-way lease [providing] for in-state use of gas and expansion of the project.

Number 1329

CHAIRMAN TORGERSON characterized SB 360 as a carrot-and-stick approach intended to bring everybody to the table. He noted that it would be heard [by the Senate Resources Committee] on Monday [4/15/02], when the commissioners and so forth, along with the oil companies, if ready, would testify by invitation only; he expressed the hope of moving it from committee at the following hearing so it could go to the Senate Finance Committee for debate. Again suggesting that SB 360 is the vehicle to use, he acknowledged that it is major legislation to get through the process in the time remaining. He concluded the discussion of SB 360 by encouraging members of the Joint Committee on Natural Gas Pipelines to read it and provide any suggestions.

ECONOMIC MODELS OF PIPELINE PROJECTS: DR. DOUG REYNOLDS

CHAIRMAN TORGERSON announced the final order of business, a presentation by Dr. Douglas B. Reynolds, whose Fairbanks-based economic firm was hired by the committee in February through the work of the Legislative Council. He mentioned the series of models that have been reviewed and the frustration from not having figures from the producers. He explained that there had been a need to narrow it to a few models, rather than having so many variations. Therefore, a couple of weeks ago he'd asked Dr. Reynolds to have economists from the Department of Natural Resources (DNR) and the Department of Revenue meet along with Bonnie [Robson] of [the Division of] Oil and Gas.

CHAIRMAN TORGERSON indicated that the handout provided to the committee, which duplicates Dr. Reynolds' slide presentation, is the product of that discussion. Indicating there wasn't agreement on every point, he said Dr. Reynolds would highlight the parts for which there is insufficient data. He also noted that extensive work had been done with Yukon Pacific Corporation (YPC) on its model, as well as with the [Alaska Gasline] Port Authority, which had provided a lot of data and information. In

addition, there has been input from Canada. "They kind of took the best of all inputs," he added, turning the presentation over to Dr. Reynolds.

Number 1501

DOUGLAS B. REYNOLDS, Ph.D., Northern Economic Research Associates (NERA), came forward, noting that he is a professor of economics at the University of Alaska Fairbanks (UAF) and is working as a consultant for the legislature along with Dr. Robert R. Logan and Dr. H. Charlie Sparks of UAF. He introduced his assistant, Michael Backus, noting that he is an Alaska Scholar. Elaborating on the slide presentation, Dr. Reynolds told members:

Building a model has been really complicated, because what we're trying to do is compare three different types of models. And there's a lot of ... issues involved. Before we started, we looked at a large number of other models. We looked at Canadian models, Cambridge Energy Research Associates models, YPC, and many others, and also the Department of Revenue, Department of Natural Resources, and worked with their economists. We had updates with Senator Torgerson and Patrick Coughlin. And ... we finally came down to ... the three major models, because you can always change things - and we can change things ... in our basic model - but we had to narrow it down to three basic models to look at.

Number 1581

DR. REYNOLDS presented a slide [page 3 of the handout] that called rate of return (ROR) "a cash flow concept." Noting that this is a general concept with many variations, he said it would be used to compare the projects. He paraphrased from the slide from page 4 of the handout, which provided the following information: ROR is like interest from a bank; higher ROR means a better investment and more profit; if ROR is low, then firms choose alternative investments; and producers want to sell gas to high-ROR projects. He said producers will want to sell their gas to the best project out of all possible projects, and usually will want a higher rate of return.

Number 1629

DR. REYNOLDS turned attention to the first issue that can affect ROR, which is leveraging [page 5 of the handout]. He explained that most companies start with 100 percent equity to compare projects, but then may do some leveraging - some debt, some equity - once they actually do the project. He added, "And then when you do the leveraging you'll have to weight-average what your whole return is."

DR. REYNOLDS turned to the second issue, natural gas liquids (NGLs) [page 6 of the handout]. He said:

Now, NGLs are already used for miscible injectants on the Slope for producing more oil. And the heavier NGLs can ... already be shipped down TAPS [Trans-Alaska Pipeline System] ... because they're heavy enough to get into the ... pipeline, and they can be sold. The lighter NGLs would go through the pipeline with the methane - which is the usual gas for natural gas - and then be stripped out at the end of the pipeline. The NGLs are more valuable. So, obviously, if you sell more NGLs, you're going to make more money. So that's a big issue in a lot of these different projects. And if you sell more, you'll get a higher rate of return.

However, one of the last things I should say is that it's questionable how much these NGLs are sustainable. In other words, ... if you start taking a lot of NGLs, especially propane, the amount of propane's going to start to decline over time. And so, some of the models ... that we've looked at have very high propane levels that they're trying to extract and use, and those high levels cannot be sustained for ... a long time. So it would impact their models.

Number 1710

DR. REYNOLDS turned to the third issue, economies of scale [page 7]. He emphasized the importance of this big factor in terms of costs, as brought up by the port authority, since for a larger-diameter pipeline, costs per bcf [billion cubic feet] will be lowered. With regard to liquefied gas (LNG), however, he said:

As far as LNG - liquefied natural gas - plants, you will usually build one plant, and then, when that's at capacity, you'll build another plant, and you're not going to get a lot of economies of scale, especially for the larger Alaskan projects, because they have to build these LNG plants all at one time. They can't build one and then build another and then another, which is what is usually done. In order to make the

economies of these projects work, they ... basically have to build them all at one time. Of course, if you get lower costs, you increase your rate of return.

Number 1752

DR. REYNOLDS addressed a graph labeled "Economies of Scale" [page 8] that he described as an example of how economies of scale work. As the bcf output increases, he noted, costs per bcf for [LNG] plants and tankers won't decline, but costs for the pipeline will.

DR. REYNOLDS discussed a diagram labeled "Typical Y Line Concept" [page 9]. He asked that members not focus on the numbers, but focus instead on the big circle on the lower right-hand side, which read, "Total cost of Valdez LNG line: \$7.2 billion." He reported that in this particular model, that \$7.2 billion is for the 2 bcf going from Delta Junction to Japan. It takes 4 [bcf a day], with a split after Delta Junction that provides 2 bcf to Japan, at a cost of \$7.2 billion, and 2 [bcf] to Alberta. There are economies of scale from the North Slope to Delta Junction, he added.

DR. REYNOLDS addressed a diagram labeled "Typical ALCAN Route" [page 10]. If all 4 bcf [a day] went to Alberta, he noted, the cost of getting that extra 2 bcf to market in Alberta would be \$3.2 billion, less than half [of the cost to Japan], because the pipeline would be made larger from the planning stages onward. That will be a big factor for the rate of return.

Number 1853

DR. REYNOLDS turned attention to the fourth issue, the price of the product [pages 11-12]. He noted that there are two different markets: the Pacific Rim and North America. Although potentially there is "20 new million tons of LNG per year demand in the Pacific Rim," there is a lot of supply, especially from the Middle East; he cited Iran, Saudi Arabia, and Qatar as being on or close to the shoreline, so that a large pipeline isn't needed. He also mentioned Indonesia, Australia, and Russia. Dr. Reynolds said the only way to outcompete those is to have a lower price. The problem with the models or projects with Alaskan LNG is the need to sell a lot of LNG once the pipeline is finished; it needs to be sold all at one time, which is a lot for that particular market. He added, "You also have to do it for Alberta, but the percentage of the market is a little lower for Alberta than for ... the Pacific Rim." Historic prices cannot be used to determine the price of sale for the Pacific Rim, he added, noting that lower prices reduce the rate of

return.

DR. REYNOLDS explained why he believes North America is a better market. In the North American market, demand is increasing at about 2 percent [a year]. One advantage Alaska will have is that the mid-continent supply is close to or on the verge of being in decline. He mentioned onshore natural gas supplies and then said LNG imports are "difficult to do into the U.S." because of difficulties with permits or high expense, and they take time. He said there probably will be 1 or 2 new bcf a day of demand in the U.S. every year, "and so prices in the U.S. could ... be a lot higher." Indicating Alaska's primary competition would be Texas, he said:

Texas has saturated everything they've looked for, everything there, and they're on the verge of decline, just like in 1970, when their oil production went in decline. And once it went in decline, it ... went down pretty fast. And the same thing's probably going to happen with their gas supply, and that's where Alaska will have a great advantage. So, in my opinion, the North American market is a much better market.

Number 1980

DR. REYNOLDS turned to the fifth issue, risk [page 13]. He told members:

Producers have to guarantee a "ship or pay" contract. It really doesn't matter who owns the pipeline. They're going to take the risk; they have to guarantee the contract.

Another part of the risk is that this is a very large ... project. Not many projects have been done that are this large. ... Really, the only comparable projects are the TAPS oil pipeline and the natural gas pipeline ... built in the Soviet Union to Western Europe back in the '80s. But both of those projects had better ... economics than this project. For example, the oil pipeline had tremendous revenue potential compared to the costs; even though the costs were high and they could have been higher, you'd still make money on ... that oil pipeline. On the Soviet ... gas pipeline, they had much lower costs compared to Western Europe because in the '80s the Soviet Union had a closed market; its ruble was nonconvertible, and so, in

essence, they had much lower costs ... than what was available for their revenues ... in Western Europe. ...

This [Alaska] gas pipeline has huge costs, and the revenues are just on the verge of making or breaking ... the economics of building that. And so it's a much ... tighter fit between revenue and costs than either of those large pipelines. So you have a large pipeline. It has to be all or nothing: you either build it or you don't. And you have to sell that gas once it's built or you're not going to make money, so you have to sell it right from the start. And that makes it ... a pretty risky affair. ... If you have a lot of risk, then you have to have a higher rate of return to compensate for that risk.

Number 2062

DR. REYNOLDS addressed the sixth issue, federal tax exemptions [pages 14-15 of the handout]. Mentioning tax-free [bond financing] proposed for the Alaska Railroad Corporation (ARRC), he said tax-free bond financing could lower the financing costs and help the rate of return somewhat. However, a tariff income-tax exemption "may or may not really help." For example, one idea for a port authority or other authority would be having an income-tax exemption to lower costs. But the problem is that there needs to be a way to hand that value over to the producers, who otherwise don't benefit. Although that might not be important to the State of Alaska, he suggested, it probably is important with regard to the desire to do "one or another project." He said it isn't possible to hand over a tax benefit to the producers without its being taxed in some way; if it is handed to the producers as a fee or a higher wellhead [price], then it will be taxed.

Number 2119

DR. REYNOLDS turned to the seventh issue, in-state demand [page 16]. Noting that in-state demand obviously is important to the State of Alaska, he said one problem is when it will be needed. He explained:

We have Kenai gas right now, and eventually sometime it's ... going to run out, and so ... the state is going to want some gas from the North Slope. Well, if you build a pipeline with some extra capacity for that in-state demand, you have to pay [for it]. And if it's not used right away, then you have a lot of cost that is not productive; it's like nonperforming assets. And that's going to lower the rate of return for the entire project. So either somebody has to pay for that extra

capacity or it has to be used right away. And since right now the Kenai does have gas reserves for at least ... five or ten years, then ... it might potentially sit idle.

According to the Department of ... Natural Resources, they had a ... demand scenario, and ... by maybe 2020, if Kenai gas does decline, the in-state demand could be ... 1 bcf per day. And the normal project for this gas line is somewhere around 4 bcf per day. So you're talking about an extra bcf. You either have to take it out of that capacity - which would mean there's a ... lot of pipeline ... going to Alberta that's not being used, and so you're not paying for that asset - or you have to build the extra asset and pay for it somehow. So that's important to remember.

Number 2185

DR. REYNOLDS turned attention to the next slide [page 17 of the handout], "Producer Numbers," which read simply, "We asked for but have not yet received producer study numbers for their projects."

DR. REYNOLDS discussed the next slide [pages 18-19 of the handout, labeled "Approximate Model Cost Assumptions"]. He said:

After looking at a lot of different ... engineering reports and estimations, we come out with about \$140,000 per inch mile, less in Canada. This includes the pipe and compressor and installation. You can separate these costs, but when you put them back together again, you get roughly 140,000 [dollars], give or take - obviously, it's only an estimate. Now, ... for example, if we have a ... 4-bcf project, you might need a 46-inch pipe. One mile of that would cost \$6.4 million. You just multiply ... 46 times ... \$140,000 times one mile. ... So if you had a thousand-mile pipeline, that's \$6.4 billion.

DR. REYNOLDS offered the following estimates: for conditioning plants, roughly \$600 million per bcf plus some fixed costs; for LNG plants, roughly \$1.6 billion per bcf; and for LNG tankers, approximately \$170 [listed as \$175 on the handout] million per ship, with about three ships needed per bcf. He alluded to the following statement on page 19: "There are some gas losses during gas shipping which reduces revenues." He remarked that these were just the rough numbers used in the model.

Number 2252

DR. REYNOLDS discussed the final model [page 20 of the handout], noting that for comparing the different projects, the same cost structure and "rate of return" concept was used for all. However, there will be a higher amount of NGLs sold for smaller projects than for bigger ones, and it is tough to compare them for these different projects. He indicated that after talking to a lot of people to try to figure out the best way to compare them, he believes this is the best comparison possible.

[Dr. Reynolds continued his slide presentation, discussing the unnumbered three pages of models found at the back of the handout. At the top of each page it said "30 Years of Production" and listed the following categories from left to right: Capital Cost (millions) (2002\$), bcf/day, Return on Equity, Return to Project, Wellhead, State Revenue (millions) (2002\$), Federal Revenue (millions) 2002\$), Canadian Revenue (millions) (2002\$), and Undiscounted Profit (millions) (2002\$).]

Number 2292

DR. REYNOLDS noted that the first set of numbers relates to YPC. He pointed out that the "Return to Project" category should be "Return to Earnings." Including tax exemptions and so forth, he said [YPC] would get about 14.8 percent, whereas [the state] would get about 13.21 percent. More important, he said, is that on the basic model, "our 1.5 model" [labeled "NERA LNG 1.5 on the handout], at 100 percent equity, uses the same kinds of inputs as for the next models, and shows about a 12 percent rate of return. He said there are similar costs for the NERA model versus the YPC, but that YPC's uses a higher price in Japan. He explained that the gas must be sold within a year of the end of construction; otherwise, money is lost quickly and the rate of return starts going down. To do that, he suggested, there must be a little lower price. He said YPC deals with that issue [in its model] by selling some to Japan and some to California; the second price is a California price. By contrast, Dr. Reynolds said, "We just ... sell it all to Japan at one price, so it's kind of a medium ground for that. They also sell some to Alaska." He said the "outputs" are fairly close.

**TAPE 02-6, SIDE B**

Number 2352

DR. REYNOLDS turned to the next slide [the second page of the models]. He noted that the port authority model [for a "Y-Line 6"] is a huge, 6-bcf project, although the producers also envision having 6 bcf going to the Lower 48; therefore, he said, it isn't out of the question. He pointed out that the port authority's capital costs are only for Alaska, so it's hard to compare them exactly because the [NERA] model includes all the Canadian costs. He explained:

They don't have a rate of return because ... they have theirs 100 percent debt financed, which is hard to compare. In order to get close to their model, we put 85/15 ... debt/equity. And we get maybe ... a higher wellhead [price]. And as far as state revenues are concerned, ... in order to get what they got, we had to put it at a 7.3 percent net present value, and we get a little bit lower than what they got. When you put it on a 100-percent-equity basis, we get a rate of return of 4.31 percent; that's compared to about a 12 percent for the YPC project. ...

I know this whole thing is complicated, but what you might want to look at is this "ALCAN marginal" [listed under "NERA Y-LINE 6"] and what that is saying is, what if, instead of having a 6 bcf where 3 goes one way and 3 goes the other way, let's put the 3 to the LNG in with the 3 to Alberta and make it a total 6 [bcf] project, and what's the marginal benefit for those 3 bcf that went to the LNG? And we would get a higher return on that. Now, that's assuming that prices don't change in the Lower 48, ... which could be the case. Anyways, the total 6, if we just did an ALCAN 6 [shown on handout], we would get something on the order of almost 17 percent rate of return. And ... the costs are pretty similar, only they don't have the Canadian costs, so we had to put those in. They think they can get a \$3.35 price in Japan; we say \$3.10.

Number 2259

DR. REYNOLDS continued comparing models:

The port authority used to say that they could get a \$3.10, and then recently - because of violence in the Middle East and so on - they think they can probably get a higher price, which may be true, but if ... you get a 20-year contract with a little higher price because there's violence in the Middle East, what you're saying is that you think there's a lot of risk involved with not getting ... gas from the Middle East. If you're saying you can't get the gas, you might not be able to get the oil. And if you can't get the oil, the price of oil and gas is just going to go sky high. And then you get a high price in the Lower 48 too - a much higher price.

So I'm reluctant to go with the \$3.35; I would go with \$3.10, and even that's going to be ... hard to sell. ... I'm thinking I'm giving the benefit of the doubt;

they might argue it's just my opinion I'm giving the benefit of the doubt to give a \$3.10 price. It could be lower because ... that's a very high number, 14 million tons per year, when we only expect maybe 10 [extra] million tons in the next 10 years to be needed.  
...

So they're going to have to sell a lot of gas; they're going to sell it to China, Korea, and so on, and China ... could be a problem. In their basic model, they're selling 14; in our basic model, we're selling upwards of 18. They're selling a lot of propane; we cut down those numbers because we don't think ... their numbers are sustainable. We do give a lot of ethane - this "NGL" is the ethane - which may or may not be possible. And then they sell a lot of pentane, which we believe the producers would just take for themselves, because it's not hard to take out ... the pentane. It's the heavier NGLs. ... It doesn't really make too much difference on the rate of return, but for their project it ... probably makes a lot of difference. Anyways, the number to remember is 14.31 percent rate of return.

Number 2114

DR. REYNOLDS addressed the final slide [last page of models in the handout], calling it a "basic ALCAN 4." He said the numbers are from the producers' midsummer report last year, and that the \$13 billion includes Point Thomson's development, which wasn't included in the ["NERA ALCAN 4"] model in order to get close to [the producers'] numbers. He explained, "If we tried to get as close to what they are doing as possible, we get ... almost [a] 15.5 percent return."

DR. REYNOLDS told members, "There's been a lot of confusion about the state and federal revenues. These numbers are not adjusted for inflation, whereas we always adjust for inflation." He said although it may be common practice elsewhere not to use inflation-adjusted numbers, he wouldn't feel comfortable doing that. He then explained that the base model ["NERA ALCAN 4"] was made to compare with the other models; he pointed out the 100 percent equity and over-15-percent rate of return. He added, "We have very similar costs, very similar prices, and ... I'm not sure if we have exactly all their numbers on propane and such, and they may or may not sell ethane." He then said:

If this is a comparison with the other projects on ... an equal footing where propane and ethane are sold, and ... in some sort of proportion - not exactly proportional to the size of the project, but in some sort of comparable basis - then the "ALCAN 4" [has] got

the better numbers. It's got a 15.5; the ... port authority had about a 14.5; and the YPC had about ... a 12 percent. So, in a comparison basis, with all similar costs - similar way of adjusting for NGLs and so on - the ALCAN 4 is about the best way.

Number 2060

CHAIRMAN TORGERSON inquired about the loss of oil [in the calculations relating to gas].

DR. REYNOLDS answered:

We did not include the loss of oil. We are going ... to try and include that right now. We had it included previously, and it was very complicated to put in because this is already a complicated model. We're trying to model three different scenarios; actually, we have many scenarios we could do, but we're trying to focus on the three scenarios. And the problem with the oil loss is, you'll have a small project versus a large project, and you'll probably have low losses, large losses, but it's not going to be proportional.

And a lot of the oil losses tend to happen later on in the years, and so ... the effect on the rate of return was very minimal; so we decided to take it out, and we're thinking about putting it in - we're starting to try and put it in again. But I don't think it's going to make much difference, especially on the comparison ... of these. And I also believe that they're going to mitigate those losses, and it's just a matter of how much cost to mitigate them - more than the ... value of the lost oil is the cost to mitigate, and, again, then I'd have to have numbers from the producers on those costs.

Number 2010

CHAIRMAN TORGERSON asked, "Just to be fair, because you said the YPC has the lowest rate of return, ... isn't it because the port authority has a higher volume - isn't that the primary reason?"

DR. REYNOLDS answered:

To be fair with the port authority, there's a couple of things that you should be fair about with them. Number one, ... we're ... doing larger amounts of propane and ethane, and ... how much propane and ethane is sustainable is a big issue; it's not been resolved, or it's not officially resolved, and from what I hear,

it's not even resolved between the different producers. So to be fair, theirs probably has a better chance ... of sustaining the levels of propane and ethane.

The other thing is, because they have a smaller project, they probably have less risk. A smaller project is a little less risky than a larger project. And, to be fair, even if they get a lower rate of return, they probably would have a lower hurdle rate, and, therefore, have possibly a little bit better chance of succeeding.

Number 1964

CHAIRMAN TORGERSON turned attention to the interactive model [a computer program whereby scenarios can be plugged in to produce relevant numbers that are shown on the slide screen].

DR. REYNOLDS, using "the basic 4-bcf ALCAN," plugged in property-tax incentives, using the assumption that during the construction period of about four years, and for ten years afterwards, there would be no property tax. He pointed out that there would be a higher rate of return; whereas it had been 15.5, under this scenario it would rise to almost 16.5. He suggested the need to look at the rate of return, not the wellhead [price], because there are differences of opinion on how the wellhead will work.

DR. REYNOLDS then plugged in numbers [relating to bond financing through the ARRC]. Using 70/30 debt/equity, he said it will be a little more complicated "than what we have" because there are many different tax implications. "Roughly, you get almost a half percent better rate of return ... on a railroad financing," he said.

[There were other numbers plugged in, but the discussion on tape wasn't clear without seeing the slide screen.]

DR. REYNOLDS remarked that the producers never do a comparison with debt/equity; rather, they go with 100 percent equity. In response to Chairman Torgerson, he said that if there is 100 percent equity, the railroad bond cannot be shown [in the interactive model]; the only way to show that is if there is some debt. He offered to show it with the property-tax incentive. Plugging in numbers, he said, "We're at about a 15 percent rate of return with 100 percent equity." He plugged in further numbers and then said, "On an equity basis, which is what they would normally do, you'd get at least a half percent better. And, again, that could be the difference, depending on hurdle rates and so on, between a good project and a bad project, depending on their risk analysis."

Number 1695

DR. REYNOLDS asked his assistant to change the price in Alberta [in the interactive model]. He said:

A 5 percent change in Chicago is about 15 cents - so put \$2.45. And it goes up a half percent. So no matter how much we give to this project, a 5 percent change in Chicago is probably going to be bigger than what we can do in Alaska, incentivewise. And a 10 percent change in Chicago is going to be really big. So, obviously, that price in Chicago - or whatever we get in Alberta - is going to have a big effect.

CHAIRMAN TORGERSON asked if there were questions; none were offered. He thanked Dr. Reynolds.

**ADJOURNMENT**

There being no further business before the committee, the Joint Committee on Natural Gas Pipelines meeting was adjourned at 4:48 p.m.