ALASKA STATE LEGISLATURE
SENATE RESOURCES COMMITTEE
March 7, 2001
3:42 p.m.

MEMBERS PRESENT

Senator John Torgerson, Chair
Senator Pete Kelly
Senator Kim Elton

MEMBERS ABSENT

Senator Drue Pearce, Vice Chair
Senator Rick Halford
Senator Robin Taylor
Senator Georgianna Lincoln

COMMITTEE CALENDAR

Overview: Alaska North Slope LNG Sponsor Group by:
George Findling, Manager, External Strategies, Phillips Petroleum
Steve Alleman, Commercial Manager, Alaska North Slope LNG Project

ACTION NARRATIVE
TAPE 01-19, SIDE A
Number 001

CHAIRMAN JOHN TORGERSON called the Senate Resources Committee meeting to order at 3:42 pm and announced an overview presentation by the Alaska North Slope LNG sponsor group made up of Phillips, BP, Foothills and Marubeni.

MR. STEVE ALLEMAN, Phillips Petroleum Co., said this group was formed to develop an economic and commercially viable LNG project. ARCO went out in 1997 after the Stranded Gas Act passed and began to look for sponsors. The current sponsors are:

- Phillips Alaska - 30%
- BP Exploration Alaska - 26%
- Foothills Pipeline - 25%
- Marubeni Corporation - 19%

In August 1998 they spent $12 million on a redesigned engineering design. After that was completed, they still didn't have a viable project, but they had enough indication that it made sense to keep going on it. Now they are focusing more on the commercial aspects

of this project or their Stage 2 effort that began in September 2000.

MR. ALLEMAN said that a separate entity would buy gas on the North Slope. They would build a gas treatment facility on the North Slope and an 800 mile pipeline to either Anderson Bay in the Port of Valdez or to Nikiski in Cook Inlet. He stated, "At that point, we would build a LNG manufacturing facility, the marine facilities, the storage facilities, etc. and ship LNG to either Japan, Korea, Taiwan, or to the Lower 48 through Baja California."

He said their market updates and inputs are perpetual and that Marubeni, a Japanese trading company that is doing business throughout east Asia and the world, gives Phillips continuous feedback through their market liaison office specific to the North Slope LNG project. Phillips and BP also have people in the field including Tokyo, Taiwan and China.

For the LNG project to move forward two things have to happen. It has to be commercially viable, having the right size to sufficiently advance and develop a project, and be competitive with other new projects. The market also has to be ready for Alaska gas.

MR. ALLEMAN said they believed that there is additional new demand and they believe the existing LNG projects with incremental expansion will go first. Then the most competitive new LNG projects that can provide secure supply and can deliver when the market is ready will be the next into the market place. "Obviously, we would qualify under the competing LNG projects, if we can make ourselves cost competitive at the end of the day."

MR. ALLEMAN said their first market analysis was completed in spring of 1999. They have looked at potential around Japan, Taiwan and Korea in their stage one and two efforts. They have looked at emerging markets in China and India. The U.S., Mexico and West Coast will be the focus of their Stage 2 efforts as they go forward. Their analysis broke down the different energy uses, like nuclear, coal vs. LNG, etc., in various countries.

MR. ALLEMAN said the market is fiercely competitive and, "We see that there is about 60 to 80 million tons per annum (MTA) of potential projects out there." Growth rate is subject to some discussion, but their view is that it is 30 - 40 MTA by 2010. "So you've got 20 - 40 MTA of growth being chased by 60 to 80 Mt of potential projects."

MR. ALLEMAN said that there would probably be some downward pressure on price, as Mr. Muraki also noted and that there would be

some push to go to shorter contracts and spot deliveries, which is counterintuitive to what they are trying to accomplish with a highly capital intensive project. Like Mr. Muraki, Mr. ALLEMAN felt the lion's share of the projects will continue to be the longer term LNG contracts. "For us, the smaller market entry provides better probability."

They would also have to compete with other opportunities for Alaska gas if they develop. One of those would be with U.S. gas demand.

> If the Lower 48 pipeline happened, we would have to be competitive in some fashion with the wellhead value they could give for that type of project or add some other value that wouldn't necessarily be there - such as increasing production earlier that you could ramp up on a gas line project.

MR. ALLEMAN reverted to explaining their stage one effort and some of the results they came up with.

> Our market focus was that we needed a smaller market entry project. We needed to be able to get our foot in the market place and grow with the market and certainly expand, if we possibly can at the end of the day. But it needed to be smaller than the 14 - 15 MTD they were initially looking at from the feedback they were getting from the market place. We didn't just cut it in half, something a commercial guy like me would do, but the engineers went back and totally redesigned our project to defer our costs where they could (I'll show some examples in a minute), to minimize our preinvestment and to help improve our net present value economics at the end of the day. So we walked with a better economic view with our smaller market entry project than we had initially. We're still not there yet, but we're looking better than we did walking into that.
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> What that does is it improves your market entry probability for your LNG; its obviously significantly reduces the capital costs. Instead of talking $12 - $15 billion, we were talking $6 - $7 billion, but yet it was still expandable to a 14 MTA project. So our mandate walking into this was to become economically sufficient at the 7 - 8 MTA range, even if we can never get into the market with a 14 at the end of the day. So we have a stand-alone project at that point. That's been our goal going forward from there.

With their larger project, they are looking at needing a steady addition of LNG sales over several years. With a small project, if they can get in and out with two to three years of ramp up, they feel they would be in better shape and actually have to seek smaller volumes after the first year.

Their engineers spent $12 million on a very in-depth analysis in five categories:

- System integration and smaller project design
- Pipeline route/LNG plant and marine terminal site
- Pipeline design and construction
- LNG plant/marine terminal design
- Gas treatment plant

MR. ALLEMAN explained that they were using three different themes:

- Significant external input from experts
- Workshops incorporate both internal and external experts
- Both route/sites advanced - if they did work on one, they did work on the other (Nikiski and Valdez)

He said they would present a lot of their findings at LNG 13, which is held in South Korea, an industry-wide conference that happens every three years.

MR. ALLEMAN summarized their effort saying they had 26 outside contractors and consultants; stage one was completed on time and under budget and exceeded their engineering design expectations.

He said he is often asked about the pipeline route and LNG plant sites and if they are still looking at two sites.

> For us the pacing item going into this is to develop a cost competitive project at either location. If neither site works and neither project is doable at the end of the day, and certainly we've developed the engineering work and design work for both locations, why do we keep looking at two sites? There are potential advantages to both. At Anderson Bay, certainly you have the existing TAPS pipeline corridor and may reduce your permitting time. From the Nikiski side of it, we have existing markets that are there; we have growth opportunities. Existing markets include the instate gas market where 70 - 75 percent of the people live along the pipeline corridor. And we have existing infrastructure such as the existing Kenai plant that's there that we could share some synergies with.

MR. ALLEMAN said they did a very in-depth analysis of permitting in stage one. Phillips and BP have Alaskan expertise within their

companies with permitting. Foothills has world-wide permitting expertise. They have visited the JPO and the RCA and he has gone with them to Washington D.C. to talk to the Department of Energy and the Department of Commerce. After all this analysis, their conclusion is that both Nikiski and Anderson Bay can be permitted at the end of the day. If that permitting can be done within their current market timing needs, they could get the project done by the end of the decade. "It's also our opinion that any existing Anderson Bay permits will also require extensive work and costs to perfect, at the end of the day."

MR. ALLEMAN added that the Nikiski route does not run through Denali National Park.

Number 1300

MR. ALLEMAN recapped that they were very happy with the work they had done in stage one, but they still weren't economically viable and nor were the cost competitive with other new projects. However, they saw other opportunities on the horizon. There was a chance of a Lower 48 project happening and they saw some potential synergies there, so they moved on to stage two, which they started in September 2000. It is mostly focused on the commercial aspects. They have a 12 - 15 month time period and a budget of about $3 million. They have considered the value of a public entity and they are looking at risks: the impacts and potential mitigation strategies. They are looking at how their projects "stack up" to all the others around the world. They have a permitting analysis effort ongoing. They have spent over $300,000 finishing up the Environmental Assessment for the Nikiski Route, since that had not had as much work done to it. When they finish with permitting at the end of this stage, they intend to have a go-forward strategy for working with the various agencies to move the project forward crisply from either location.

MR. ALLEMAN continued saying that they are working on optimization. The $6.8 billion project is now a $6.5 billion project including the ships. They "knocked off" $400 million mostly in design work they continue to do on the gas treatment facility. Another part of the savings came from the pipeline and more from the shared cost of the jetty at Nikiski. Without ships, they are talking about $4.9 billion and are still trying to identify other savings. They will be looking at shared costs with the Lower 48 pipeline. They "took a hard look" at public entity valuation, primarily to see if there was some way for a public and a private entity to work together to have a more economic project at the end of the day. They see no compelling advantage right now to joint public private projects. That doesn't mean that a public project couldn't go forward and have tax savings and it doesn't mean that a private project couldn't go forward with financing and still work toward a profitable project; but the two combined, generally speaking, the

benefits that would be passed on by the public entity to the private entity would be taxed. So that somewhat negates itself. Even with the public borrowing rates they might see, those would most likely be offset by the reduction of interest and depreciation that could be claimed.

He commented on market engagement saying that:

> We live in the market. We still have our representatives working there, both through our individual companies and through our market liaison office. Our marketing tack at this point is talking to the market about our progress. We don't have anything to sell them until we have a fully defined cost competitive project at the end of the day and until we have figured out a way to be competitive with other green field projects around the world. So, when we go to the market we do update them on what we've been doing. Every market that we would plan to contact in East Asia received a letter from us when we came up with our market entry, our smaller project that was hand carried to the markets. We had that kind of discussion with them. When I go over to Tokyo, we sit down with some of the bigger players and have discussions, but it's discussions long the line of "here's what we're working on and here's what we're headed toward."
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> This is a very sophisticated market place. They understand very well what it means to be cost competitive and they are very cognizant of what the pieces are for us to become cost competitive at the end of the day. Certainly, we'll continue to work on our other market analysis efforts that I talked about: the competitiveness with other projects and the non traditional markets in the U.S. and Mexico.

Turning to economics, MR. ALLEMAN said:

> For us, the key is to be cost competitive with other East Asian LNG projects. I can't say it enough. It's the most important piece for us for making it happen and it has to happen in a sufficient economic rate of return. Our project in our eyes is not yet cost competitive and it's not economic on a cost of capital basis as we look at it for the expected risks that we would have to take for this large of a project. So we still have work to do on it. We haven't walked away from it by any stretch of the imagination. We're still trying to optimize. We're still trying to be innovative.

MR. ALLEMAN said they trying to come up with meaningful fiscal modifications. He said that project economic assumptions must be saleable. He showed the committee a graph of the $6.5 billion Capex case. Their gas treatment plant gets about $1 billion. The big issue for them is the 800-mile pipeline, for about $2.4 billion, and compression. Their LNG facilities at Nikiski will cost $1.6 billion and about $1.8 at Anderson Bay. The difference is that Anderson Bay is a very mountainous region versus Nikiski, which is very flat and easy to access. The Anderson Bay number does not include any cost for a spur line to the Anchorage Bowl or any permitting that might be required to build that spur line there. Shipping is about $1.6 billion of the total.

MR. ALLEMAN showed the committee a list of three projects and their estimated costs to see how they compare. He said he didn't know what the front end development costs for the projects are. Most of the costs have to do with oil production and not with the LNG production.

Number 1700

SENATOR ELTON said a previous presentation projected the cost of an LNG carrier to be $120 - $150 million. Mr. ALLEMAN had budgeted $6.5 billion including ships and $4.9 without ships, which works out to significantly more than $120 - $150 million per ship. He asked what he was missing or were they disagreeing with the earlier numbers.

MR. ALLEMAN answered that the $1.6 billion is for 8 ships and they are using about $200 [million per ship], which they think is conservative. He thought the price of ships would move up as theirs is more LNT coming into the market place as competition increases.

SENATOR ELTON asked how many ships they were talking about.

MR. ALLEMAN answered they were talking about 7 - 8 million tons, about one ship per million tons.

He added that the reason Nikiski is a bigger project is because of the process called extended "inflash." They can flash the gas off the end of the system and actually make more LNG, because it's auto refrigerant. It's like spraying a paint can, but they need to have some place to put it. So there has to be some other sales market. It has to be either an in-state market or to some other facility. Nikiski is the only place they have the infrastructure in place to do that. So that's the only place they feel they can make more LNG at the end of the day.

SENATOR ELTON asked what happened with the synergy of an Alcan route and how much money would they save if there was simply a valve, so the only thing the LNG project would be responsible for

would be a pipeline from Fairbanks or where the gas starts moving east down the Alcan.

MR. ALLEMAN answered that right now they are looking at what a shared cost would look like. The Lower 48 project is still looking at what their pipeline would look like at the end of the day. Even if they didn't have the capital cost for that pipeline, they would still have to pay a toll.

SENATOR ELTON clarified that as an owner of the gas, they would be paying a toll whether it's going down the Alcan or going to a valve near Fairbanks.

MR. ALLEMAN answered that this is a separate entity project that buys gas on the North Slope from the producers.

SENATOR ELTON said that he was seeing tolls as transportation costs and that cost is there regardless of whether that gas ends up on the coast or in the Lower 48 market.

MR. GEORGE FINDLING, Phillips Petroleum, said the project they developed is called a stand-alone and those are the cost estimates they have. "If you assume there is a Lower 48 pipeline, and make the assumption that follows the southern route, and what we actually install is the pipeline from Fairbanks south, the pipeline that goes from Prudhoe to Fairbanks needs to be big enough to handle both the gas to the Lower 48 and to our project. If the Lower 48 project builds that pipeline, basically what we experience is a toll that we have to pay to move that gas through that now-larger system capacity. So there's a cost burden for that distance. It's either a capital cost to us or a toll, if we have a sharing arrangement.

CHAIRMAN TORGERSON asked if they anticipated being identifiably different between the Phillips that owns the pipeline going to the Lower 48 and the Phillips that might want to send LNG somewhere.

MR. FINDLING said he wasn't sure how to answer that. They are visualizing a unique commercial structure for the sponsor group where they buy the gas at the wellhead and then pay for the facilities, make LNG, and sell it in the market place. "Since Phillips sits in the sponsor group in that role, we have another role later on as a wellhead seller."

CHAIRMAN TORGERSON asked if they anticipate their current partners being the same partners in the LNG project.

MR. ALLEMAN answered that is the structure and the assumption they are working under right now.

CHAIRMAN TORGERSON said he wanted to go over the permitting again

and asked if they got the go-ahead, how long would it take before either project could come together.

MR. ALLEMAN answered that he didn't recall the total time, but it could happen before the end of the decade for either project. There is a difference in timing between the Anderson Bay and the Nikiski route that is built into this. The base case is 12 - 18 months longer to do the Nikiski route than to do the alternate route. It could be longer or shorter than that. "There is no exact science to permitting."

CHAIRMAN TORGERSON asked about the LNG fundamentals slide under the expansion and if he was talking about the Nikiski plant.

MR. ALLEMAN said he was talking about expansions on his list of blue. The Northwest shelf would be an expansion project.

CHAIRMAN TORGERSON asked about the list of competitive projects and if he had included shipping costs.

MR. ALLEMAN answered that it didn't include shipping costs. The averages were what the Oil and Gas Journal put out. It said that the $400 million per million tons was moved down to the $250 million range per million tons. Their personal look was somewhere from $100 - $250 million range. That would include the LNG plant, the marine terminal, but would not include the ships. In their case, it would include an 800-mile pipeline. Other projects do have pipelines involved.

CHAIRMAN TORGERSON noted that the fertilizer plant was missing.

MR. ALLEMAN replied that they have looked at in-state gas sales as just assumptions of increments of $100 million per day, $200 million per day, etc. added into the market. They haven't tried to identify specific locations. They realize there is a need in south central Alaska for growth gas and a need for gas for the other facilities down the road.

CHAIRMAN TORGERSON asked if anyone had approached him to be a partner.

MR. ALLEMAN answered no.

Number 2240

SENATOR ELTON asked how much he anticipated local markets being.

MR. ALLEMAN answered about 10 percent of the gas would find a local market.

CHAIRMAN TORGERSON asked if he knew of any other investment

incentives that were being offered by any other gas producing nations that would make a project look more favorable.

MR. ALLEMAN answered that he wasn't aware of anything.

CHAIRMAN TORGERSON asked if Japan was still financing projects around the world and building LNG boats and operating them.

MR. ALLEMAN replied there was the XM Bank issue and they may have more opportunity to give favorable financing in certain situations.

MR. FINDLING added that you have to be a little cautious about low-interest financing from foreign countries. Sometimes they will give a low interest rate, but they want to be paid back in their currency, not in dollars. That shifts the currency risk, which makes a big difference in the cost of the loan.

CHAIRMAN TORGERSON said Japan used to front-end-load whole projects instead of financing them. Mitsubishi was a 70 percent financer of the Unocal plant, for instance. He wanted to know if there were any incentives like that going on in the world. He heard there might be in an Australian LNG plant.

MR. FINDLING said buyers first want to see a cost competitive project and then they look at special ways to make the project work.

CHAIRMAN TORGERSON asked if his stage two timeline was the same as the consortium on having answers to all the questions.

MR. ALLEMAN answered, "The LNG project plans to finish this block of work by November of this year."

TAPE 19, SIDE B
Number 2400

MR. FINDLING pointed out that the extent to which they have information available, they can get it to the committee before that end date. He hadn't seen a schedule of plans.

MR. ALLEMAN said they made some of their own assumptions enabling them to structure what pipeline size and cost would be and establish tariffs based on other projects, like the Alliance pipeline.

CHAIRMAN TORGERSON asked if they believe they are just as competitive or more competitive than the pipeline to the Lower 48 California market.

MR. ALLEMAN answered that he wouldn't say they're as competitive as the pipeline. They just see it as another potential market.

CHAIRMAN TORGERSON asked him to clarify, "to achieve meaningful fiscal modifications, particularly federal."

MR. ALLEMAN explained they would certainly have discussions with the State of Alaska. There are also some larger opportunities on, for instance, accelerated depreciation and those types of issues that would involve discussions with the federal government.

SENATOR ELTON said one chart indicated they had 60 - 80 MTA of potential projects for some 20 - 40 MTA of growth and it seems when they throw in the U.S. market with their expectation of a much higher demand, that would take some of the risk out of an LNG project, if they have the ability to deliver to Baja, California.

MR. ALLEMAN responded that he didn't know if Baja reduced the risk. There will be more demand in the U.S. market, but it all gets back to the overall economics of it, like what is the sustainable price going to be into the Lower 48 and what other gas is going to come on within the U.S. and other imports.

MR. FINDLING added that they were framing the concept of market optionality, where you have optional markets for your gas. This is a good thing, but the question they struggle with is how to quantify the benefits of it. They sense that they don't want to foreclose any market optionality right now. They want to create it and the value will make its appearance, if it has some.

SENATOR ELTON asked if part of their stage two analysis looked at those optional markets.

MR. FINDLING answered that they didn't have an explicit goal of trying to quantify market optionality in stage two, but he thought it was a topic in the backs of people's minds.

CHAIRMAN TORGERSON asked what size Nikiski is now.

MR. ALLEMAN answered that it is 1.2 MTA.

CHAIRMAN TORGERSON asked if the smallest they were looking at now was 7 - 8 MTA.

MR. ALLEMAN explained that the Nikiski plant was about the smallest in the world.

CHAIRMAN TORGERSON asked if that plant was expandable.

MR. FINDLING answered there was some expansion potential up to the .3 or .4 range, but it would require bringing in another train or trains.

CHAIRMAN TORGERSON said in either location, they are basically looking at a new facility.

MR. ALLEMAN responded that there are shared costs that they have already identified, like the jetty, some storage sharing and the existing plant.

CHAIRMAN TORGERSON asked if he thought either project could be expanded to 14 MTA.

MR. ALLEMAN said that was correct.

SENATOR ELTON asked if the 7 MTA an increment in Nikiski included the 1.2 MTA coming from it currently.

MR. FINDLING responded that their figures do not assume the projects are mixed at this point. The existing Nikiski plant is Nikiski. The other project assumes a brand new facility on a brand new location. So they are talking about an increment to Nikiski.

CHAIRMAN TORGERSON asked if they need gas in Nikiski soon.

MR. FINDLING answered:

> We are in pretty good shape through 2009, which is the time period for our export license. The question they are getting is about the Cook Inlet gas situation. We don't really see any reason to sort of push a panic button here. You have to make an assumption that the Cook Inlet Basin is somehow different from other resource basins. In the 70's there were enough reserves to produce for 60 years. It's the so-called reserves to production ratio. These days in Cook Inlet we're at a reserves to production ratio of about 12 years.

MR. FINDLING explained when reserves come down in resource basins, exploration starts and pretty soon more resources are found. "We don't see anything that says that's going to be different in Cook Inlet." The U.S. ratio as a whole in the gas market is eight years. There's a longer period of reserves in Cook Inlet right now than in the Lower 48.

CHAIRMAN TORGERSON asked what the committee could do to help.

MR. ALLEMAN said he appreciated the offer, but for them, it's staying the course and trying to find the synergy that works for them "at the end of the day."

CHAIRMAN TORGERSON adjourned the meeting at 4:40 p.m.