

Stranded Gas Hearings (0406170845 Minutes)

Tariffs on Pipeline Not Subject to FERC Regulation

Harold Heinze, Chief Executive Officer, Alaska Natural Gas Development Authority (ANGDA), June 17, 2004.

MR. HAROLD HEINZE, Chief Executive Officer of ANGDA, jested that he has appeared before legislative committees many times in the last few years but this is the first time he is appearing without requesting any money. He told members that he is not an expert on tariff issues; instead he will discuss cost related issues and the elements that go into a tariff determination. He said he would focus on the in-state issues because ANGDA's interest is what happens within Alaska. He then gave a PowerPoint presentation [paper copy available in committee file], with the following explanation.

Number one, this is sort of the slide J.P. Morgan showed you yesterday of a number of things that go into the tariff and, in particular...the goldish color were the ones they talked about the sensitivity and gave you some results. I'm going to talk mainly about the ones that are circled in red and then I think between myself and Roger Marks, who follows me, we'll pretty well will have covered about every arrow on the page here by the end of the three or four presentations. Additionally, I'm going to give you some thoughts that we have, from our point of view, in terms of some of the projects we're looking at in terms of the relationship between debt-equity ratio and the bond rate and how that might affect the tariffs.

Here [indisc.] is the outline. I hope it's not too daunting but I intend to go through it pretty fast and we can come back and spend time wherever you wish. Number one, I just wanted to make sure we understood ANGDA now is working on three basic things, the first of which, of course, is as prescribed in the ballot measure was to look at an LNG project and we are. Secondly, we've been asked by the Administration, as part of the broad Administration effort but separate from the Stranded Gas Act work that's going on, to look at ways that ANGDA as a public corporation of the state might be helpful in moving forward any of the highway gas line projects and there are ideas we have there in terms of how the state might participate and facilitate the project moving forward.

And then finally, we've been asked very specifically to even go beyond the spur line requirement of ballot measure 3 and look very specifically at how we might get gas to Cook Inlet. Right now, as required in ballot measure 3, there is a requirement that was actually – we passed a couple of days ago, on June 15th to issue a report, a development plan, competency in about 11 different items. We're frankly late on that. We're going to do that by about mid-August. We believe that is a reasonable timeline. In addition, we'll put out at that same time a report on how we believe Cook Inlet gas or North Slope gas could be brought to Cook Inlet.

To put it in perspective for you here, I listed out a list of the projects that I'm sort of aware of and the price tags that are thrown out as being associated with them. You heard yesterday from the Port Authority with their Y-line concept that weighs in at about \$26 billion. The producers have talked about a highway gas line, very large in diameter, maybe 52 inches, down through Canada and all the way to Chicago for about \$19 billion. We've heard from Enbridge and a little bit from TransCanada at this point of maybe a little more modest highway project weighing in at about \$15 billion to Alberta. If you remember back, Yukon Pacific had described an LNG project for about \$12 billion out of Valdez. The one we're looking at would be about \$10.5 billion. Additionally, a number of years ago, some Cook Inlet companies and some North Slope companies looked at a project for 1 billion cubic feet a day out of Cook Inlet and that was a little under \$7 billion. We are looking at a concept of a bullet line - a small line direct from the North Slope to Cook Inlet and that would weigh in at about \$2 to \$3 billion and, additionally, we're looking at the spur line.

ANGDA itself, as you can see by the chart, is tending to look at the lower side and the very Alaska side of these issues, not to say we don't try to learn from and keep up with what's going

on in the other projects and, frankly, look for ways to interact with them because, for instance, the concept of a spur line – who gets the gas to where – is a very important part of that notion.

But this is kind of the suite and even though the focus of this hearing and the focus of everybody's effort is very clearly at that producer project at \$19 billion, it's very important that you realize all of these other potential projects are on the table. And the reason, simply put, is a \$19 billion project that requires the approval of a half-dozen to a dozen entities has a chance factor of actually going forward but it's kind of low, and so you have to have other projects in the screen or we're going to end up sort of hitting the wall, being stopped, and having nothing to do at that point.

The LNG project in particular that we're looking at is portrayed on this chart. Keeping in mind that a gas conditioning facility and the first 530 miles of pipeline is common to almost everybody's project. This one happens to be a 36 inch line, which is the same size, for instance, that Enbridge proposed for going down the highway. But it is definitely smaller than what the producers have talked about.

The liquefaction trains here are very large. They reflect the latest kind of a technology that's been in use. There is capital money included for a tanker fleet that is a mixture of foreign flag and Jones Act. And, again, we don't intend to own those tankers. We would contract for them basically. But to get a feel for the cost of service and to be comparable to other projects that deliver to a market, we felt it was important to include the money.

The other basic piece of ANGDA's work in looking at the LNG project has to do with the benefits diagram and a number of you have seen this before. In addition to just measuring a project's return in terms of just dollars to the State of Alaska, you have to look at the full suite of these benefits. We have just completed, and it is now available publicly, a benefits model, a huge spreadsheet model that incorporates not only the revenue side, but all the whole economic impacts and all the other things. In addition you'll notice in here we've included the provision for moving gas to the coastal communities, moving gas for LPG to the river communities of Alaska. We think that's a very important part of it. So that is the totality of our focus.

It turns out that when we look at all these issues, our business model is very clear. If we can provide the lowest cost of service, delivery of gas, that is good for everybody. It encourages everything good to happen on the North Slope. It encourages everything good to happen in Alaska in terms of our own consumers, our own industries, everything else and, frankly, it's good for the ultimate customer down in the Lower 48 or across the seas.

If you take the \$10.5 billion that we're looking at in our capital cost and recognize that it's a 2 billion cubic feet a day project, we go through a calculation of a cost of service. This is similar to the kinds of calculations you saw yesterday from J.P. Morgan. I've shown two cases here. The top one is a 30-70 split on equity to debt and a 12 percent return on equity and an 8 percent bond rate basically on debt. And you can see the calculation here would yield \$2.51. Again, the way you use this kind of chart notionally is then you would add to that a wellhead value, let's say it's a dollar - or 99 cents to keep the arithmetic easy – getting \$3.50. You could then compare that \$3.50 to your expectation of price in the market. If you expected a \$3.50 price in the market, what that would say is that you have a project that can realize 99 cents at the wellhead and still yield a 12 percent return on equity and pay a debt rate of 8 percent.

And the alternative, if you change the debt-equity structure and you make some different assumptions on what the bond rate is, that number goes down in this case to \$1.94. And again, all these calculations have been made using a model that was developed and is available publicly from Roger Marks in the Department of Revenue. I've used that as the base model for all our calculations. It is also the model that is embedded in our benefits spreadsheet model and everything else. And, very frankly, I would encourage apples to apples that while people might

want to look at projects other ways, it's kind of helpful if they do the calculation also with this model so we can get a handle. And that's why I showed you the second column on this. This is the producers' \$19 billion project plugged into the same model and this is the result it yields. You'll notice it's a slightly lower cost of service to Chicago and it has some other characteristics that are positive. Again, we think it's very important to explore all of those issues and see how they fit together.

I guess I wanted to just add a little bit of a flavor here. As ANDGA looks at this, it is our belief that for smaller projects that are undertaken by a state public corporation acting as a utility, we could achieve very high debt rates and very low bond rates on those. Now, certainly for bigger projects measuring in the 10s and 20 billions of dollars, I think the advice you heard probably yesterday from J.P. Morgan is more indicative. But we still believe that something in this range of say 70 percent debt-equity ratio is very achievable. We believe also that the state has also probably more modest equity considerations than others. And I'll show you how that comes into play towards the end of this presentation.

I did want to reflect to you a couple things that are going on and, again, just in a general sense, say to you this is why you need to keep revisiting this issue because I know the legislature visited very heavily two-three years ago the gas issue. Well, I hate to break it to you, but the world's changed and that's what this chart shows. Up until several years ago the United States, because of the great excess of gas supply to demand, had the lowest price in the world for gas. What we've seen is that supply go away. We've seen the price rise as you would expect and, more importantly, we're seeing the world price of gas converge. All those dynamics are very powerful. One of the things in that convergence is LNG and moving gas between various producing countries all around the world to various marketplaces and we should see some equilibrating of that price, very similar to what happened to oil.

Now we don't necessarily believe a 'gas PEC' or a 'G-PEC' will form that fulfills that same function of supply demand price balance but it is very clear that the five mega-major oil companies, British Gas and maybe a couple of the Japanese trading companies, will be the major players controlling that gas flow and it's reasonable to expect that we will see something happen that is not unlike what happened on oil.

Again, we have looked at our project compared to the projects around the world. Certainly we understand why, for instance, British Petroleum and Indonesia may choose to develop that gas and move it as LNG to Baja, California. Those are things that each of the companies, each of the players in this, will make an analysis. One of the more interesting comparisons we would point out to you is that Shell, who does not have any Alaska gas, is a major player in LNG, and they chose, without any contracts or any other commitments to develop Sakhalin - and Sakhalin is, by comparison to our LNG project, Sakhalin is \$10 billion for 1.3 billion cubic feet a day, - and if you think about our project as...\$10.5 billion for 2 billion cubic feet a day, you can see that we probably compare very favorably in terms of economics. And that's what our broad look says, is that broadly we are in the pack. We are certainly not the highest cost. We are certainly not the lowest cost but we can compete, we believe, with all these projects.

Also there are some distance advantages we enjoy to the West Coast and some of those may be difficult to capture if we act exactly like the mega-major oil companies. The great part of being ANGDA is as this public corporation of the state, we don't have to act like the mega-majors, we can look for other ways to compete in the marketplace with them that are different than their strategies. And again, we don't have a portfolio of projects. We have basically one project and we have to find a way to make it work.

On the LNG scene, there's also some very good news. What we've seen is a dramatic decrease in the unit cost to build these plants and liquefy the natural gas. And again, I've identified the source of this chart. I left BP's identity on it. It was presented in Washington, D.C. about six,

seven months ago. So I mean it's very recent information. It's very real. Almost everybody has observed this trend. One of the things we will do by August is validate the trend and validate whether it is applicable to our situation here in Alaska. This makes the difference, this chart, between an LNG plant that costs \$2 billion, \$3 billion or \$4 billion. I've taken the conservative approach of using only \$3 billion right now but potentially if I took this chart at its face value we could write down \$2 billion for that. Those kinds of cost savings dramatically alter your economics.

Additionally, the world trade right now in terms of LNG tankers with all the number of tankers being built in a wide variety of places around the world, there's a very definite trend downward and how that translates for us, how the Jones Act issues get worked, is going to be a subject of our report. We're very cognizant of those issues. But this is a very favorable trend and, again, this is from the Department of Energy so I have every reason to believe the U.S. Government's got this one right.

I wanted to take a minute and talk a little bit about pipelining costs and the reason is that everything you've heard over the last several days involves anywhere from \$2, \$3, \$4 billion on up to \$8, \$10, \$12 billion worth of pipeline and underlying those costs are cost estimates. And what I did was I pulled together here a whole series of estimates and actual costs covering a fairly wide spectrum of people's opinions on cost. For instance, the last time the legislature looked at this about three years ago, the detailed cost estimates that were made – tariff calculations and all that, were based on the concept of \$140,000 per inch diameter mile. In other words, what you do is you take the billions of dollars of cost, you divide by how many miles that pipeline is and by how many inches in diameter it is. It's a way of kind of equating different size pipelines, different lengths, and everything to one number. It's not certainly a requirement of science that they all be exactly the same but generally, in an estimating sense, one would expect them to be very similar. And in the past the number that was used was \$140,000 per inch diameter mile. Well the producers, after spending \$125 million, have published a number, which is \$115,000 per inch diameter miles, and somebody forgot to say thank you to them because they just saved 25 percent of the cost of the pipeline. That's a significant reduction. Again, that makes a lot of difference in these numbers.

Now, at this point do we have any of the information that allows us to know if that's just a result of somebody else doing the estimate? And I will tell you as an engineer sometimes that happens. People estimate things different. Or, is there some legitimate thing that we can understand? Is it better trenching techniques or something? Is it a technological innovation? Does it have something to do with the metallurgy of the pipe or whatever? Maybe there is some difference there.

The other part of it is that the actual experience in the Lower 48, the last big pipelines that were built in Canada, and these are big, long distance, large diameter pipelines, came out on comparative cost to be a factor of three or four lower than even the \$115,000. And it seems to me that again, my engineering instincts tell me that I need to understand why building a pipeline in Alaska is three or four times more costly than building it in the Lower 48. These issues are not trivial because as a legislature you're going to be asked to make decisions – multi-billion dollar decisions. And what that pipeline number is has some real significance in which way that decision may be affected or altered or looked at. So again, we're hopeful that over time, available to the public and for some level of scrutiny is some of the background that kind of goes with these numbers.

The other issue I wanted to broadly flag to you is that with the array of projects on the table, I think it's kind of good to go back to basics and that's why I included this table, which just kind of shows for a whole bunch of different pipe sizes the implied nominal capacity and, more importantly, the implied reserves that go with it. And again, the way you would use this table is if you were looking at a 36-inch pipe, its nominal capacity is roughly 3 billion cubic feet a day and

for something – say a 30 year life, would require about 22 trillion cubic feet of reserves to support that type of a pipeline. Now that's a pretty significant consequence. Again, I'm going to show you some of the variations that take place as you vary the reserve but 22 trillion is very close to what is not only known but developed on the North Slope in terms of Prudhoe Bay. The bigger number, 35 trillion we talk about, is what is quote, known but it is not necessarily developed. And again, as a petroleum engineer type, as a former oil company type, I'm not particularly scared by that difference but the bankers might be. The people that you go to borrow money from would look very differently at the 22 trillion cubic feet as opposed to say the 35 or the 50 trillion cubic feet. And, as you can see, it does make some difference in this.

The other thing is that we put together this chart just to try and show you the full range of possibilities. If one wanted to look at a bullet line, for instance to Cook Inlet, if that's the only project that we could see happening within the next several decades, it could be a pretty small diameter pipeline and I'll show you a little more about that in this chart. After the hearing yesterday I went home and, of course, instructed the ANGDA engineering department to get in gear and do some calculations for me. Unfortunately the graphics art department was on vacation yesterday so you have to accept the hand drawn version but at least I do have a scanner and my green graph paper at least is on a PowerPoint slide so.... What this chart is trying to illustrate to you is the fact that as you get to larger and larger pipe sizes, you will always get a lower tariff if the pipeline is full. But if you look at how the decrement of cost goes, once you start to get above 36 inches, you're into a huge pipe anyway and so going huge-huge does not change the tariff, if you will, by a lot.

The other dash lines on here show you what happens if you put in a pipe but you wrong size it and you don't have the ability to flow through it at that. And as you can see, that penalty can add up pretty fast in certain cases. So again, the term I would use is, you know, you got to right size the pipe. You have to make sense of what pipe size you select in terms of what you think the volume is. For instance, if you put in a pipe to handle 4.5 billion cubic feet a day but the market gags for the first five years and can only accept half that volume, there is a very significant increase in the tariff, maybe in the order of 50 cents for that one happening. So again, you have to be very careful that you get it right in terms of reserves, in terms of market volume and everything else. Again, I flag that to you because as a great student of the public record, I will tell you there is nothing out there at this time that tells us about what the market volume for North Slope gas might be. There's nothing you can look at that will tell you whether the market for North Slope gas is say 2 billion cubic feet a day, as one of the Stranded Gas Act applicants has said, or 4.5 as another applicant has said, or 6, as another applicant has said. There's nothing out there on the public record that allows you to look at that difference and it does matter, and it is important. This is a very unsophisticated calculation but 800 miles in this case, by the way, is significant because 800 miles represents roughly the distance from Prudhoe Bay to the Canadian border. It represents roughly the difference between Prudhoe Bay and Valdez and Prudhoe Bay to Cook Inlet. So again, you're looking at a chart, which portrays for different volumes and pipe sizes roughly the pipelining cost or tariff for any of those cases.

Here's an example of the kind of calculations, and again, I've done this with the revenue department's model that Mr. Marks developed and again, you can run cases until you're blue in the face on this. This is just one looking at the reserve assumption for both the LNG project and the highway project. What's interesting is that if you kind of look at the middle line there, if I move about the same amount of reserves through both projects, even though it takes a lot longer in the case of the LNG project, then you would expect roughly the cost of service to be about the same, and that's what the chart, the model, calculates in this case. And it's just a method of looking at the comparison. Again, you can see what happens in the highway project, the bottom right-hand number, if there is not enough reserves. If you build a project thinking there's 50 but only half shows up, that does dramatically change the cost factors.

And then finally I just sort of – because I really don't have maybe the time this afternoon to really

participate, I wanted to offer you one thought about - as you kind of look at how tariffs might be built and, again, the advantage of having ANGDA in this whole fray is that we are able to think constructively and creatively about how to make the project work. And frankly, my trips to the Lower 48 and my interactions with a variety of people that kind of quote, represent the market say that Alaska has to find some way to have a little more customer appeal. And I think one of the ways to do that is to look at some conceptual variable tariff methodology, which basically invites the customer to share and help us get over our hurdle, which is low prices and, at the same time, offer the customer what they want, which is some discount at higher prices. And in talks with regulators, this kind of a scheme, conceptually at least, is very appealing to them. And what I've portrayed here is simply, for instance, if the market price, whatever that means, is say \$3 or less, basically the customer would be willing to pay an upper floor of \$3 and basically there would be for transportation and production a split that was agreed to on that. As the market price went up, there would be a split of who garnered whatever price increases there were here. And as you'll notice here in this case, I've allocated a greater part of the increase to the wellhead than to the gas line or to the transportation charge. And then above a certain point, the gas line charge would fix, basically, at a maximum and then the wellhead would offer some discount to the customer in return. And again, the advantage is that this kind of a scheme would allow you more favorably to borrow money frankly, because by having the customer participate in the form of the guarantee at the low end, which is what the banker worries about, is a very powerful thing because again, these customers tend to have very big asset bases. They have very captured sets of customers. They are using monopolies – regulated monopolies, and all those things. At the high end, very frankly, giving up some discount at the higher prices may be the price of getting all this to go and some scheme like this may work. I don't know. Again, these numbers are for illustrative purposes only and obviously that would be subject to a lot of multi-party discussion and other things so it's just an idea.

Mr. Chairman, with that I'll quit and entertain whatever questions you have. I did include several other sort of handouts and pass outs of other things that are going on or other things that people have said about us or whatever.

SENATOR TOM WAGONER said he was cautioned, during a conversation about FERC controls, to be cognizant that FERC has more of the control over that pipeline and sometimes asserts certain controls over what is put in the pipeline and the delivery point. He asked if that is true.

MR. HEINZE said his personal experience with FERC related to oil pipeline issues but FERC can do just about anything it wants to do. He said sometimes the logic of its decisions is not apparent. He noted that ANGDA's biggest concern right now is that the conditions for getting gas off a big pipeline, the highway pipeline for example, may be very difficult to negotiate, especially with FERC, because [ANGDA] does not have any great standing on a national level. Second, the lost revenues of gas taken off within Alaska would be counted as a cost against the tariff ANGDA is charged, which is of concern. He said that is a fancy way of saying that ANGDA might have to pay the full fare even though it took gas off only one-third of the way down the pipeline. He said he can find no guarantee that Alaska won't find itself in that situation. He offered that ANGDA has proposed that it be an investor in the project, at least for the volume of the gas that it would like to see used within Alaska. That way, ANGDA could provide some protection for the tariff and off-take point within Alaska. He said in the long run, that is an issue that will have to be guaranteed through the Stranded Gas Act and other proceedings. ANGDA's approach continues to be the positive one, and that is by being an investor, which lessens the risk of the other parties and leaves ANGDA in direct control of what happens in Alaska.

SENATOR LYMAN HOFFMAN referred to the ANGDA chart entitled "Benefits to Alaskans" and asked how much work has gone into calculating the feasibility of delivering LNG to the river communities and to barge LNG to the coastal communities.

MR. HEINZE said last Friday he met with the municipal advisory group on the Stranded Gas Act and showed that group, in detail, this benefits analysis spreadsheet. He said one of the major factors would be fuel costs – power cost equalization and the cost of fuel in rural communities and other places. He said

that ANGDA is trying to go beyond the “pretty drawing” and is attempting to reduce those benefits to hard numbers.

MR. HEINZE continued by saying second, ANGDA believes that on the rivers, propane may be the better way to meet the energy needs of many rural villages. ANGDA believes gas can be moved to the coastal communities in the form of LNG or compressed natural gas. He explained the reason to liquefy natural gas by cooling it to cryogenic temperatures is that it provides a 600 to 1 volume advantage. It weighs the same but fits in a container 1/600th of the size. Compressing the natural gas to about 2500 psi can reduce the size of the container, and that volume advantage is about 100 to 1. Although the volume advantage is not as great as that of LNG, the cost makes compression a very competitive idea. ANGDA believes that compressed natural gas is certainly a possibility for many of the coastal communities. ANGDA has looked at the idea of barging LNG. A small LNG plant located in Cook Inlet could be the source for the LNG distributed to the coastal communities.

MR. HEINZE said ANGDA has estimated that bringing North Slope gas to the [Anchorage] area will provide about \$100 million of disposable income per year in this economy, the equivalent of adding \$150 million in payroll. He said ANGDA believes it must be prepared to implement some of the benefits no matter what project goes forward.

SENATOR HOFFMAN said the problem with propane in rural communities is that it is used primarily for cooking, which is not the largest consumptive use. Electricity is generated with diesel and many of the communities would be interested in converting to LNG for heating and to generate electricity. He expressed interest in seeing a comparison of the LNG numbers for heating and electrical generation.

MR. HEINZE replied that compressed natural gas may be an ideal feed for a very efficient gas turbine unit. Almost any clean hydrocarbon fuels, whether ethane, propane, or methane, are very good feeds for anything resembling fuel cell technology. The advantage of propane is that any appliance can run on propane and any hardware store has the gadgets necessary to hook it up. He said right now, the municipal advisory group under the Stranded Gas Act has hired a contractor to look at the total socioeconomic impacts. That study will answer some of Senator Hoffman’s questions about the best fuel source for each community and should be available within a matter of months.

SENATOR WAGONER asked what impact a bullet line from Fairbanks or Delta to Cook Inlet would have on current exploration and production in Cook Inlet.

MR. HEINZE said he provided some background information on Cook Inlet and explained that Cook Inlet is down to 2 trillion cubic feet, while the amount used per year is roughly 200 billion cubic feet. That amounts to a ten-year supply. He commented:

When you get down to a 10-year supply, a lot of things stop working in terms of borrowing money if you’re a utility so basically Cook Inlet finds itself in a situation where it probably needs to replace every year just about what it consumes. The good news is that can be done. The bad news is to do it, it’s going to cost more money than we pay right now for gas. The replenishment probably has to take place at prices competitive with the Lower 48, because that’s what it takes to attract capital to explore for the gas here. If North Slope gas with a very large supply was hooked to this area, it is reasonable to expect that the prices would return to today’s levels. Roughly today, the prices are about \$2.50 wholesale. It’s expected that the new prices, you might say, will eventually – and in about five years that’s what we’ll pay - is something double that, about \$5. The availability of North Slope gas into this area as a large supply would probably take the prices back to \$2.50. What it would probably do is discourage exploration in that sense. The exploration that is taking place now, the decisions people are making now, they are selling under long-term contracts at very nice prices.

So, what would I predict? I predict that people who find gas now are going to get a good price for it. Would I predict that they should wait five or six years to go looking? No. I mean if it was me, I’d get on with it right now and be uncertain as to the future.

