

ALASKA STATE LEGISLATURE
HOUSE LABOR AND COMMERCE STANDING COMMITTEE

February 26, 2014

3:23 p.m.

MEMBERS PRESENT

Representative Kurt Olson, Chair
Representative Lora Reinbold, Vice Chair
Representative Mike Chenault
Representative Bob Herron
Representative Andy Josephson

MEMBERS ABSENT

Representative Charisse Millett
Representative Dan Saddler
Representative Craig Johnson

COMMITTEE CALENDAR

PRESENTATION: "GASLINE ISSUES/OPTIONS" BY JANAK MAYER & NIKOS
TSAFOS~ CONSULTANTS~ ENALYTICA

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

JANAK MAYER, Partner
Enalytica
Legislative Consultant on Gas Commercialization
Washington, D.C.

POSITION STATEMENT: As consultant to the Alaska State
Legislature, provided a PowerPoint presentation regarding
gasline issues and options.

NIKOS TSAFOS, Partner
Enalytica
Legislative Consultant on Gas Commercialization
Washington, D.C.

POSITION STATEMENT: As consultant to the Alaska State
Legislature, provided a PowerPoint presentation regarding
gasline issues and options.

ACTION NARRATIVE

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CHAIR KURT OLSON called the House Labor and Commerce Standing Committee meeting to order at 3:23 p.m. Representatives Josephson, Reinbold, Chenault, Herron and Olson were present at the call to order.

Presentation: "Gasline Issues/Options" by Janak Mayer & Nikos Tsafos, Consultants, Enalytica

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CHAIR OLSON announced that the only order of business would be a Presentation: "Gasline Issues/Options" by Janak Mayer & Nikos Tsafos, Consultants, Enalytica.

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JANAK MAYER, Partner, Enalytica, Legislative Consultant on Gas Commercialization, stated that he has spent the last six years in Washington D.C. working for PFC Energy. He has co-founded his own firm with Nikos Tsafos, who will be presenting with him today. He briefly discussed his background, noting he initially worked on and led the analytic team at PFC Energy, essentially conducting economic and international modeling for upstream oil and gas. This included building models of assets, portfolios, international companies, independent drilling firms, and private equity firms. Additionally, he spent considerable time analyzing oil and gas fiscal terms on project economics so government can understand the impacts of rule changes on private sector behavior.

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NIKOS TSAFOS, Partner, Enalytica, Legislative Consultant on Gas Commercialization, said he has worked for the past seven and a half years as a consultant for PFC Energy. One of his last responsibilities at PFC Energy was to run the global gas consulting practice for the firm. Thus he has worked with oil and gas companies, governments and financial institutions worldwide on all manner of questions related to natural gas. Principally his experience as a consultant has been to assist companies in selling gas, buying gas, and understanding how gas

markets are changing and how those changes may impact their strategies and plans.

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MR. TSAFOS said he would focus his discussion on four things. First, he'd like to discuss competitiveness and where Alaska fits into the world of global gas. Second, he'll discuss the project pathway in terms of the state's current position, where Alaska is headed, items that will be settled in the next couple of months, and what issues will be settled after that. Next, he'll focus on two of the biggest themes legislators are grappling with currently: alignment and the Memorandum of Understanding (MOU). In terms of alignment, he offered to define it, explain how Enalytica thinks about it, and identify why it is important to the state. Finally, he will discuss the state's midstream options, in particular, how to structure the midstream options, and the vision of the MOU and the role TransCanada Alaska Development Inc. (TransCanada) will have with respect to MOU.

MR. TSAFOS highlighted competitiveness and pointed out a map of the world [slide 4]. First, if a person was in Beijing and wanted to "keep the lights on" in Tokyo, this map represents the choices for obtaining natural gas. Although Alaska appears to be one of many choices, by considering the options in more detail it becomes clear that many challenges exist for each of the other options. For example, in Western Canada, British Columbia (BC) has had difficulty in setting a tax system that works for government and oil companies. Even though BC was at the forefront three or four years ago, many of the LNG projects have slowed considerably and partners have left due to disappointments. He discovered this morning that Apache Corporation would like to sell its stake in the Kitimat LNG project. Again, BC looked good initially but things did not play out.

MR. TSAFOS emphasized that the map is useful to understand Alaska's place in the world, but it also illustrates the places that people are most excited about. The current sources of gas over the next ten years include Western Canada, the Lower 48, and East Africa. It's easy to become dismayed since Alaska is one of many and the proposed Alaska LNG is a fairly expensive project so it raises questions as to whether Alaska can compete or if Alaska will even "have a shot."

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MR. TSAFOS said the best way to respond is show what the map looked like seven or eight years ago [slide 5]. Again, Alaska's project is fairly expensive, but he pointed out that it isn't the cheapest supply that always gets built. For example, in the late 2000s, Venezuela, Trinidad, Nigeria, EQ Guinea, Qatar, North Africa, Algeria, Libya, and Egypt were far cheaper than the Australian project that actually got built. It's important to also consider other factors, such as government climate and ability to get gas to market. Ultimately, what matters is whether the gas can be developed and the negotiated price satisfies the buyer and the owner. One additional benefit Alaska has is its project completion window in the early to mid-2020s that no one else is targeting. Most of the deals are looking to supply gas in 2017-19. Thus, most of the competition currently happening is in a window that is too soon for Alaska to access. Therefore, even though lots of options exist, it doesn't mean that Alaska doesn't have a place at the table.

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MR. TSAFOS discussed project pathway [slide 6]. He described how LNG projects typically evolve in response to the general concern about the specific decisions the legislature and administration must make. The legislature has concerns on whether these decisions will be irreversible for the next 30 years. In other words, this discussion identifies what decisions need to be made now, what gets "bolted down," and what can change later.

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MR. TSAFOS turned to discuss the case study of an Australian project, Queensland Curtis LNG (QCLNG) and how the project evolved over a period of time [slide 6]. Specifically, the slide shows five variables: the size of the project, the upstream, the liquefaction, the off-take or buyers, and the external financing for the LNG project at three points in time. The three time periods include July 2008, during the Front End Engineering Design (FEED) study, during the final investment decision (FID) phase, and in January 2014.

MR. TSAFOS explained that first, the QC LNG project is not yet on line. Second, Alaska would fall to the left of this slide. Subject to enabling legislation, Alaska's partners would like to go to pre-FEED, and potentially sanction FEED in 12-18 months, which would put Alaska in the first column.

MR. TSAFOS, turning to the QC LNG, focused on the QC LNG project. When the FEED started the partners thought the project might encompass one 3-4 million metric tons per annum (mmtpa) train. The upstream was owned by British Gas Group (BG) and Queensland Gas Company (QGC), which BG part owned. The liquefaction project was a 70/30 percent-owned project, respectively, with all the gas sold by BG. When the project was sanctioned in October 2010, the project had more than doubled in size. BG became the sole supplier, with the exception of China National Offshore Oil Corporation (CNOOC) and Tokyo Gas which took some share of the upstream. The liquefaction ownership changed with one train 90/10 - BG/Tokyo - and the second train was built by BG and Tokyo gas. The offtake changed with CNOOC and Tokyo Gas buying gas, with the balance going to BG. Fast forward to today. While the project size is the same, the upstream has changed with CNOOC having a bigger share. The ownership of the liquefaction has changed, with CNOOC's share increasing from 10 to 50 percent; plus CNOOC bought an option for a potential third train, if one is built. Currently, the offtake is more than the capacity of the project since BG plans to sell its gas from other parts of the world. The project obtained external financing from the Japan Bank of International Cooperative (JBIC) and the U.S. Export and Import Bank.

MR. TSAFOS summarized that the aforementioned slide demonstrates that it is fairly natural for LNG projects to evolve considerably in terms of size, resources, ownership of liquefaction, target markets, and financing. He reminded members that the QC LNG project has not yet begun. Thus, this project provides Alaska with a useful perspective to keep in mind since many decisions for the Alaska LNG project could evolve. In fact, he ventured he would be shocked if the ownership structure is the same when the first cargo leaves 8-10 years from now. He said, "It doesn't usually happen that way. Things change."

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MR. TSAFOS, in response to a question, suggested that without commenting on the intention of the "big three," some new players would likely buy some equity in the Alaska LNG project, and that some buyers will be quite interested in acquiring some portions of the liquefaction facility. Further, the state may initially start with a 25 percent share, but as the project gains momentum, its share may later drop to 20 or 15 percent. Additionally, the state may decide on different shares of the

value chain, which typically happens when new players come in. For example, someone may buy a 5 percent share of the project or a party may buy proportionately from the ownership. He avoided speculating on the three producers involved, but he anticipated that some buyers will want to buy some of the state's equity. He recalled presenting before the Legislative Budget & Audit Committee information which showed that typically in LNG projects, half of the LNG buyers own a share of the facility. For example, when CNOOC came into the QC LNG project, it bought a 10 percent share in the project at the time for 3.6 mmtpa. At the time the project increased from 3.6 to 8.6 mmtpa, CNOOC also increased its share from 10 to 50 percent. Tokyo Gas did the same thing when it obtained 1.2 mmtpa and also obtained some upstream and midstream, too. He speculated that this will likely happen in Alaska.

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REPRESENTATIVE JOSEPHSON recalled discussions on revenue projections in a previous hearing [House Resources Standing Committee] that if the state held to the MOU, the state could receive \$3.4 billion in revenue if the state held a full equity share. He acknowledged that the QC LNG changes make him feel uneasy, although it speaks volumes about the dynamics and how things can change on a short time table; however, he would like to know how the state can remain vigilant and retain sufficient earnings, especially since the state's decisions also impact local communities and their budgets. For instance, the project seems much less interesting if the state's share is a billion in revenue. Again, he asked whether the consultant can teach Alaska what it takes to be a vigilant partner. He recalled some legislators have expressed concern that if the state doesn't obtain enough revenue early on that it might ultimately result in a need to change the state's taxes and royalty share.

MR. TSAFOS agreed it makes sense that if the state ends up with a lower equity share that the share of the revenue would change. The question arises as to whether the state will feel comfortable with the necessary capital outlay in 2017-23 for the proposed Alaska LNG project before the revenue will come in. Of course, everyone likes the projected \$3.4 billion in revenue, noting that Enalytica has its own figures, which are in the ballpark. Again, the question is whether the state is comfortable with the upfront spending as part owner in order to generate the revenue later on. Certainly, a number of ways exist to balance this. For example, the state could adjust its equity share and obtain upfront cash payment. Another way would

be to leverage the project and use debt at the state level and at the project level. Furthermore, the question is whether the legislature and the administration will be comfortable with the amount of upfront investment necessary to achieve the state's goal to maximize its annual revenue.

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MR. MAYER stated that during this legislative session and through subsequent negotiations of contractual agreements with the producers, the state's share will be determined and is estimated between 20-25 percent. Once that share is determined, the point of slide 6 is that once "you have that share you have that share." As the state gets closer and identifies the amount of the capital commitment, the state's capacity to carry debt, and how much project financing is possible, that is the point at which the state can determine whether it is capable of carrying a 25 percent share or if its share should be reduced. He noted if other buyers express an interest in "buying in" that the state doesn't have any obligation to provide them that access. He predicted that if the state is clear that it wants to maintain a particular share it will be capable of doing so.

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MR. TSAFOS focused next on the Alaska LNG project [slide 7]. Currently, the state is at the Pre-FEED stage, which basically consists of a study to determine whether the project makes sense and if so, it will move on to the FEED phase. On the marketing side, some anxiety exists in terms of whether long-term commitments and contracts, the Memorandum of Understanding (MOU) and Heads of Agreement (HOA) will be signed. The state may approach buyers and sign some preliminary agreements, but it is unlikely the state will finalize anything over the next 18 months. If the state has 20-25 percent equity it is more likely the state will focus on marketing options and terms. Further, in terms of financing, the state will be focused on initial talks, which have already begun with the state considering its debt capacity. In terms of project ownership, the state will focus on defining the initial structure. The administration has put out the Pre-FEED figures of about \$400-\$500 million, with the state's share ranging from 20-25 percent, depending on what happens with TransCanada Alaska Development Inc. (TransCanada). The marketing will be zeroed in on during FEED, some of the deals will be finalized, and the sales and purchase agreements will provide definitive contracts. During the financing phase, the state may sign loans and the state may refine its initial

ownership structure, and at that point the investment becomes more serious and reaches \$1.5 to \$2 billion.

MR. TSAFOS said that even at that point when the state reaches its final investment decision, the state has still only spent \$2-2.5 billion, which certainly is significant, but represents a fraction of the "big number" [\$45-\$65 billion]. One of the questions has been whether this [Alaska LNG project] is a good deal for Alaska. He answered, "Well, we don't know yet. In fact, you don't have to make a decision about whether you want to commit the big money until you get to that 2017-2018 stage." He said, "Right now you just have too many unknowns and the whole goal of the next two or three years is to narrow down the unknowns and come up with a plan that is actually a lot more tangible." Currently, the state doesn't have ownership, but just has some general ideas about how the project might play out. During the construction phase, the state can still do more marketing, obtain additional financing, and bring in more partners. That represents the point at which the capital outlays become more serious, the project is on-line and most of the obligations are met from the cash flow of the project. At that point the project would be earning money and it can pay its operational and maintenance expenses, plus any debt the state may have acquired in the process.

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MR. TSAFOS said the effect of slide 7 is to show that the Alaska LNG project is at the starting point, that probably less than one percent of the paperwork has been signed; therefore, the project is at a very preliminary stage.

MR. TSAFOS discussed the state's options for the project pathway [slide 8]. This slide outlined four options: First, is the status quo option; and second, under the HOA using royalty in kind (RIK) with 25 percent equity in the gas treatment plant and pipeline ("GTP & Pipe"), and 25 percent equity in the LNG. Beginning with the RIV and the status quo, there would be some tax implications but no capital obligations without any ownership in the upstream, the "GTP & Pipe" or LNG. Certainly, tariffs matter purely from an evaluation perspective since the state must find a way to tax gas at the North Slope. However, the HOA does several things. First, it potentially switches from royalty in value (RIV) to royalty in kind, with the upstream remaining at zero and the state receiving up to 25 percent from the "GTP & Pipe", and the LNG. Under this scenario the state would be responsible for some capital commitments for

its share of "GTP & Pipe", and the LNG, plus the state might take on some debt. The state would be responsible for the principal and interest on the debt. However, the tariff suddenly becomes only notional since the state owns 25 percent of the "GTP & Pipe" and the LNG. In that instance, the state could argue with itself, but the tariff is non-consequential since everything would happen internally. Thus, what the producers do and how they calculate tariffs would be of no interest to the state. He offered to discuss the third and fourth options under the MOU later. He indicated the next four or five slides would cover alignment.

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MR. TSAFOS turned to alignment [slide 9]. He acknowledged that gas analysts can use confusing units and consistently switch units so it is difficult to understand the language. However, the easiest way to consider alignment is by discussing oil, since the legislature and the state are familiar with oil issues. On slide 9, Enalytica copied the DOR's revenue sources to illustrate LNG in oil terms. Starting with an oil price in FY 15 of \$105/barrel (bbl), removing the midstream costs for transportation, TAPS tariff, and other cost, which total approximately \$10/bbl, and deducting lease expenditures of approximately \$46/bbl, the end result is a \$49/bbl at the wellhead. This provides a baseline and the next two slides consider how that will differ with gas.

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MR. TSAFOS related that the table remains the same. Since gas price is less transparent than oil and pricing varies by contract and nation, which ranges from \$12-\$17 for the same project, the gas price will likely be linked to oil since pricing in Asia is linked to oil [slide 10]. The Japan Crude Cocktail (JCC) or the Japan customs cleared price represents essentially an average of the amount Japan pays for its oil. He pointed out that JCC has essentially been the same as the Alaska North Slope (ANS) price. Thus, he suggested members think about LNG linked to ANS. Generally, gas fetches less on the market than oil on a thermal equivalency and historically, if the price of gas goes higher than oil customers stop using gas and turn to oil so oil has an upper limit on the price of gas [slide 11]. The second line on the slide relates to transportation, which is higher since gas is more expensive to transport than oil and gas will not be regulated by Federal Energy Regulatory Commission (FERC). He related that FERC will regulate the environmental

and the permitting, but will not set the rate. The tariff will be highly dependent on the capital structure, or the return on equity, or how much debt-to-equity is used. Basically, this means the tariff is highly subjective and therefore easy to argue about.

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MR. TSAFOS turned to slide 12, which overlays the LNG. The structure remains the same, but it is no longer about ANS or oil, but represents gas. The first line on this slide is \$81 and represents the idea of thermal equivalency. Oil may be at \$100/bbl, but due to the thermal equivalency gas earns less so it is discounted at about 20 percent. He offered his belief that this wouldn't be unreasonable in terms of what one might expect if signing a contract today. The next line, the midstream, is \$66 per barrel of oil equivalent (boe). He said \$10-11 of midstream per thousand cubic feet (mcf) means that the gas comes out on a boe equivalent basis. Thus, gas is orders of magnitude more expensive to transport, he said. The upstream isn't necessarily high, in part, since oil production is already happening on the North Slope; however, after subtracting \$66 for midstream, \$6 for upstream, one ends up with basically a \$9/boe on the North Slope. Therefore, the state can argue whether to tax the \$9/boe at 35 percent, 50 percent, or 60 percent, but multiplying a small number by those higher percentages still represents a small number. This illustrates the point of this slide, which is because the midstream is so important and so expensive, the value at the wellhead is orders of magnitude smaller and lower than on the oil side of the equation.

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MR. TSAFOS turned to slide 13, entitled "INDICATIVE LNG CHAIN: \$89/bbl ANS," noting the only change is dropping the price of ANS to \$89/bbl and the price at the North Slope then equates to zero value. Therefore, 35 percent multiplied by zero equals zero, he concluded.

MR. TSAFOS turned to slide 14, entitled "INDICATIVE: LNG CHAIN: HIGHER COSTS," at 12.2 percent in costs and/or tariffs with \$100/bbl oil still wipes out any production tax value so the North Slope value is still zero, he said.

MR. TSAFOS turned to slide 15, entitled "IMPLICATIONS FOR STATE OF ALASKA," to consider the state's position. Certain things become apparent. First, it's important to obtain a fair market

price for the gas, in fact, as close as possible to oil equivalency. So much of the value is in the midstream, with the upstream somewhat secondary to the midstream. The wellhead is insufficient to drive the state's value.

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MR. TSAFOS recalled Representative Josephson previously asking about the \$3.4 billion figure. The bottom right figure on slide 15 lists \$300 million in revenue. If the [legislature/state] is considering taxing that barrel at the end, it is a much lower value. The reason for this is that similar to the oil structure, the \$66/bbl represents the producer's equity - and the state has no equity at midstream - in a way, if the state doesn't own a piece of the upstream, but mostly the midstream, is that anything that changes on the top line, from \$81 to \$72, the value comes from the state since it went from \$9 to zero. The idea of alignment or equity all comes back to this core concept: There isn't enough value necessarily at the upstream at these prices. Obviously if oil prices were boosted to \$200, it would represent a huge value on the North Slope. However, he asked members to think about the numerous arguments the state has had on the TAPS's tariff that in 2015 is \$6/boe and to consider what the argument [would be if the tariff] was \$66/boe. He emphasized this is where equity comes in and instead of the state being at the bottom of the table and getting what is left over after costs are subtracted, the state gets to be part of these figures. Consequently, the state will obtain a share of the \$66/boe. Therefore, the state would not be a passive recipient at the end, but can also be a participant throughout the chain. He concluded that this is how Enalytica thinks of project alignment as a means to resolve at the conceptual level.

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MR. MAYER recapped that Mr. Tsafos has laid out the basic idea of the world as it's envisioned by the HOA. He reviewed the midstream options under the HOA [slide 16]. In this scenario, the state would have RIK, with 25 percent interest in the "GTP & Pipe" and LNG, and a proportionate obligation to meet 25 percent of the capital expenditure (CAPEX & OPEX). As Mr. Tsafos says, in that world, the state has an integrated project. The state has the gas, owns everything the gas goes through, sells it at the other end, and the whole question of the tariff becomes relevant only to instate sales of gas. From the perspective of where the state derives its value, ultimately the state has an investment in the infrastructure that takes molecules of gas

from the North Slope and sells them as LNG into Asia. The state has costs and revenues from the LNG, but the whole question of the tariff doesn't really matter since it represents the value allocation across an entire project that the state owns.

MR. MAYER said the MOU takes the basic vision and considers it differently in terms of the "GTP & Pipe". It essentially recognizes that the state may not have the full financial resources to carry 25 percent equity across the entire chain. The MOU considers that the state would want to enter into an agreement with TransCanada Alaska Development Inc. (TransCanada) to own all or part of the "GTP & Pipe". TransCanada would take the state's full 25 percent share, the producers would still own 75 percent, and leave the state with the full share of the liquefaction project. The MOU provides an option to repay TransCanada for costs up to 40 percent. The MOU recognizes that this may be an option never exercised in which case the state would not have any ownership of the upstream or pipeline, but would still have 25 percent of the liquefaction facility or the state might exercise the 40 percent option.

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REPRESENTATIVE REINBOLD asked for further clarification on the repayment.

MR. MAYER responded that if the state moves forward with the MOU, TransCanada would cover the studies but the state would be required to repay the costs of the Pre-FEED and FEED engineering studies.

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REPRESENTATIVE REINBOLD asked whether the state would already have paid "a chunk" of the costs.

MR. MAYER answered that the state would already have paid for the engineering and design work on a pipeline to the Lower 48 so that work remains intellectual property. Again, that work is not lost, although some is more relevant to this project than others. However, he pointed out that the Alaska LNG project is an enormous \$45-65 billion project with several years of engineering work necessary prior to the state arriving at a point in which it can seriously evaluate the project and decide if the investment is a good one or not. This is not like the Alaska Gasline Inducement Act (AGIA). Instead, the state would be a commercial participant just as the producers and

TransCanada would be, with everyone bearing its share and the risks since the project may ultimately not be viable. If the MOU path moves forward then TransCanada would essentially pay the hundreds of millions in costs for the "GTP & Pipe". It would be holding the state's share of gas "GTP & Pipe". If at some point the state decides to exercise its option to take 40 percent share, it would reimburse TransCanada 40 percent of the cost plus interest at an agreed upon rate of 7.1 percent interest.

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MR. MAYER said that possibly the state will not have any direct equity in the GTP and the pipeline, but it would have 25 percent in the liquefaction. Or perhaps the state might end up with 10 percent in the "GTP & Pipe". The state would hold this indirectly by being shareholder of the vehicle that TransCanada used to own the pipeline and the full 25 percent the state would retain for itself in the liquefaction project. He framed the question of whether this is in the state's interest by thinking about a few structures, although the potential structures could be numerous.

MR. MAYER suggested midstream options [slide 17]. Thus far, midstream has referred to the entire "GTP & Pipe" and Liquefaction project, but this slide limits the MOU to the "GTP & Pipe" and examines potential structures. The state's ownership could be structured as "GTP & Pipe" solely owned by the producers,; owned by the producers and the state together; or by the producers, the state, and a third party. If the structure were to include a third party, it could be leveraged by AGIA and TransCanada or the state could terminate AGIA and launch a bid for a new third party. The path of the MOU would consist of a third party being involved and the best option would be to continue the relationship with TransCanada on a new footing, a more purely commercial footing rather than the arrangement that existed under AGIA.

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REPRESENTATIVE REINBOLD asked for a timeline for terminating AGIA.

MR. MAYER responded that this question is initially being decided this legislative session in terms of the response to the MOU and the enabling legislation. He explained that the MOU is fundamentally an agreement that relates some terms for

commercial agreements the state would sign with TransCanada, in particular, for the firm transportation services agreement. The next step would be for the state to sit down and negotiate the details with TransCanada consistent with the MOU. This would essentially happen in the next year, such that the details would go from the guidelines of the MOU to firm contractual commitments consistent with the MOU. However, even once that is done it doesn't necessarily commit the state to the specific future directions since the details in the term sheet of the MOU a series of "off-ramps" are envisioned in which various termination events are discussed. First, during the Pre-FEED process, I believe, within 60 days, the state can terminate the arrangement or a final investment decision. Thus, a number of off ramps exist with corresponding costs associated with the decisions, which consist of reimbursing TransCanada, with interest for the work completed thus far. In many ways the MOU also provides more flexibility than the current relationship the state has with TransCanada through AGIA.

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REPRESENTATIVE JOSEPHSON asked for clarification on the exposure of the Alaska LNG's other three participants' exposure "if the plug gets pulled," the state must reimburse TransCanada \$90 million plus 7.1 percent prior to FEED. He wondered what will happen if the producers decide not to proceed.

MR. MAYER responded that the important thing to bear in mind is that the fundamental framework is the state's share on the project as a whole and the MOU envisions that TransCanada would carry the "GTP & Pipe" portion. He said in that sense it is not as if TransCanada will make independent decisions on the project as a whole. Instead, TransCanada would simply be carrying the Pre-feed and FEED costs. In terms of the costs for those processes it is up to all of the partners, including the producers, to determine. When the time comes to make a serious decision whether to proceed to FEED and eventually, at the final investment point, all of the project partners will need to agree to proceed.

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REPRESENTATIVE JOSEPHSON said that he will be asked in April to spend \$90 million. He surmised it may be the best investment the state has made since 1973 when Trans-Alaska Pipeline System was signed; however, he wondered what ExxonMobil Corporation, BP Exploration (Alaska) Inc., and ConocoPhillips Alaska, Inc. will

be required to pay. He said he has confidence that the three producers would not agree to this unless they were confident that Tokyo Electric would be there for them, or whichever Asian buyer is in place. He said he'd like to be certain the three producers are keeping up with the state's exposure.

MR. TSAFOS answered that the last two lines of slide 7 show the investment. He said that everyone will pay for their share of this project. The state would have 20-25 percent and the producers will have 75 percent of the proposed project since they will spend 75 percent of the project costs. Throughout this process, the whole idea for the Pre-FEED, FEED, and construction is that everyone will be paying their share. The state would be called upon to invest perhaps \$90 million and ExxonMobil Corporation, BP Exploration (Alaska) Inc., and ConocoPhillips Alaska, Inc., and TransCanada will spend proportionately. He said, "By the world of the HOA you are on the hook for 25 percent of whatever is being spent - that you are a part of - over the next year and a half." The MOU says that TransCanada will spend it for the state and the state will reimburse TransCanada so it's a slightly different structure than AGIA, in which the state was giving money to TransCanada in order to get something advanced. In this instance, the state will own a share of the project.

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REPRESENTATIVE JOSEPHSON asked if the oil companies "pulled the plug prior to FEED" whether they would need to explain to their shareholders that they invested \$100 million each for naught. He asked whether that would be an accurate statement.

MR. TSAFOS answered yes. He said this happens all the time since at any given time oil companies pursue projects, engage in exploration, and development on projects that get stuck and don't advance. He said that spending \$100 million would not likely require much of an explanation. In terms of alignment, at the end of the day, as Mr. Mayer said, "Everyone has to say, yes." If someone gets cold feet due to the expense, it means the project has slowed down or the companies decide to get out. Companies may just buyout the share of any company that decides not to invest; however, the idea of alignment is that at the time period, the state needs to make the big decision and write the check for billions of dollars, which is exactly the same time that ExxonMobil Corporation, BP Exploration (Alaska) Inc., and ConocoPhillips Alaska, Inc. and perhaps TransCanada's board of directors will be giving their authorizations. Thus, the

state is spending money in tandem with the partners. He said one of the insurance policies the state has is that the state is spending alongside the oil companies, and while it is not a guarantee that the state will make a smart decision, it is a guarantee that the state will make a decision, similar to everyone else since everyone is in it together. He concluded that that represents the idea of alignment, which is what the ownership distribution does.

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REPRESENTATIVE JOSEPHSON understands that there are about 500 variables, but from the DOR's presentation, one might surmise that with 30 years of natural gas that the state would spend \$10 billion and make \$90 billion. He concluded that is one possible "take home" from the DOR commissioner's presentation. He said he wondered what he was missing since it looks like a "no brainer" from that elementary level.

MR. MAYER indicated he'd need to see a specific slide to respond to the exact question; however, ultimately the project as a whole is a \$45-50 billion project. If the state forgets the MOU, the state's interest would be about 25 percent, which is a lot of money to spend upfront for a substantial amount of annuity ranging from \$3-4 billion. There is always uncertainty about future revenue streams in terms of gas prices so the decisions will need to be weighed very carefully. The impact of TransCanada's involvement is to reduce the upfront investment and correspondingly reduce the subsequent revenue stream afterwards. He suggested that Representative Josephson may have been referring to earlier slides that the administration presented that show quite a big difference in the upfront spending and relatively little difference at the tail end. He wasn't sure what he was referring to as being a "no brainer."

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REPRESENTATIVE JOSEPHSON said the slides seemed to indicate that the state would spend \$5-6 billion, leverage another few billion dollars, but by 2023 or 2034 would earn \$3 billion a year for 30 years.

MR. TSAFOS indicated that if one abstracts from the specific numbers, one benefit of alignment is that it gets the state to think like an oil company. That is part of what oil companies like about LNG projects - that as long as one can get through the hump in the beginning, and get the project running, and not

subject to people blowing up pipelines, it is something that will pay off over a very long time. In a way the base case scenario - keep costs at this level so the \$65 billion doesn't become \$85 billion is the attraction of the LNG business, which is that it represents a huge investment upfront, but "once it's done it's a great long term business."

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MR. TSAFOS said that is the idea of the long term benefits of the upfront investment. The state gets more than 25 percent of the value in certain price environments due to property taxes, which is a slightly disproportionate share, but in effect, it sounds like a good deal so long as the state can live with the 50 or 500 variables that can move at any given time and can make the overall project look better or worse in 10 years.

MR. MAYER added that the variables are not just related to the upfront cost but the \$3.5 billion of revenue is one projection at one particular gas price and what the revenue will be depends on the agreements that are negotiated for the sale of LNG as well as the oil price is at the time. The figure could be higher or lower and a large number of variables that mean it could look like a fantastic investment for the state and end up without the rate of return it thought it might at the onset.

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MR. MAYER said the state doesn't know what the costs will be, but the Pre-FEED work will cost \$400-\$500 million and if the state has a 25 percent share of that the state's portion would be \$80-\$100 million, in particular if it is a full 20-25 percent investor throughout the project [slide 16]. If the state goes with the MOU, and the "GTP & Pipe" will be done by TransCanada, the state is really saying it will bear \$40-\$50 million for the LNG [liquefaction] and TransCanada will bear another \$40-50 million for the GTP and the pipeline. In 2015, if the state would like to exercise its option and call back 40 percent of TransCanada's cost, the state would repay TransCanada 40 percent of the \$40-50 million in expenses plus 7.1 percent interest.

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MR. MAYER said that gives a more concrete sense of how the stage-gated process works and who is spending what money. He said the overall decision to spend money is one in which the project as a whole will make based on what's been done to date

and deciding whether it's worth continuing with the process. How might one think through whether the proposed MOU meets the state's criteria might mean thinking about the critical things the state needs that determine the state's interest. He said Analytica has talked about alignment, the tariffs of elements in the midstream, if the state is building an upstream taxing entity and how quickly disputes could arise and wipe out value to the state. Thus, clearly minimizing those disputes about where value is allocated, and being indifferent about where value is allocated or having the same interests will be important to the state. The state has a somewhat different set of interests than the producers when considering that the resource base is bigger than Prudhoe Bay and Point Thomson. The large resources are estimated to be 35 trillion feet of gas, but an estimated 200 plus trillion feet of gas is waiting to be found. Thus, from the state's perspective, it is not about monetizing existing proven North Slope gas, but is about building infrastructure that will enable future commercialization of all of the rest of the enormous resource base. Therefore, it is important to ensure from the outset that the structure is oriented toward future expansion. Clearly, this is of vital interest to the state. Obviously, ensuring that in-state customers can receive gas from the project and that the tariff on the pipeline and GTP is as low as possible to deliver gas at the lowest price is clearly important. Additionally, it is vital to have parties involved with serious execution ability. Finally, if possible it's important to maintain some degree of momentum. He said that in terms of previous work, and in talking to colleagues in Washington D.C. and elsewhere, that it's important that people not think about an Alaska gas project as something that never happens and instead to have worldwide interest that something is about to happen in Alaska. Thus it seems important to understand the cost and benefit in terms of continuity and momentum and in terms of time value of money the perception of the investment community that this process is one that continues to move forward. It's also important to think about how to weight cost and benefit if the project is delayed.

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MR. MAYER suggested keeping in mind that framework to consider possible options [slide 18]. He asked what that would look like if it was a producer only pipeline and how it would meet some of these interests. He answered that a producer only "GTP & Pipe" seems to have a number of weaknesses. First, in terms of alignment, it comes back to the potential for disputes over

allocation of value since the state would need to know the tariff. This means a significant potential for disputes exists in terms of value allocated, the tariff rate, how it is set and the optimal level. It isn't clear, in terms of third-party expansion, a 100 percent producer "GTP & Pipe" since clearly it would represent a big investment to monetize that resource. These are not companies that make money by moving other people's gas through their infrastructure, but are companies that make money by selling their resource and it is not clear that a producer-only pipeline would have a compelling interest in pursuing expansion. There may be times when expansion is in their interests, but it's not necessarily guaranteed. In terms of in-state deliveries, the question of alignment and the uncertainty over tariff becomes an uncertainty for in state deliveries of gas. The three producers all have a strong proven ability to execute enormous projects like this. On the other hand, midstream, not in terms of the unregulated world of liquefaction terminals, but the sort of regulatory monopoly view of pipeline and pipeline infrastructure is becoming less and less a core focus of the majors.

MR. MAYER said that in terms of continuity and momentum the questions that must be weighed are Alaska's ways of exiting the state's commitments under AGIA and the cost of those commitments, in terms of arbitration and litigation, or the cost to end that relationship without finding an additional means to continue with TransCanada.

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MR. MAYER turned to the heads of agreement [slide 19]. He said the HOA fixes a lot of problems for the producer of the "GTP & Pipe" since it creates a strong alignment between the producers and the State of Alaska. And the question of the tariff becomes irrelevant except for in-state deliveries of gas to Alaska residents, but in terms of the bulk of the gas being sold, it is one big integrated investment that is about taking gas from the North Slope and selling it to Asia and where value is allocated across that chain ceases to be important. In terms of third-party expansion, as a shareholder and key partner, the state has a clear interest in future expansion with the producers. However, if other parties aren't interested in expansion, it means the state will go it alone in a future expansion. He asked what the arrangements will be, noting the state could agree on the basic principles, as stated in the HOA, but in terms of finding new companies who want to take up capacity and having the ability to execute on building the new capacity the

state is left going alone. He said there is a key difference between "GTP & Pipe" and the liquefaction. While there are certainly issues involved in expanding liquefaction facilities and who gets the benefits, in general, a series of liquefaction trains exist and if one wants to expand the overall project, a new liquefaction train is built and each train can have separate ownership. Thus, expansion, in that sense can be relatively modular. The owners of the new train can be completely different than owners of the previous train and that can all be worked out. However, ultimately, in the foreseeable future there will only be one pipe and everyone must agree how the gas will flow through the pipeline. Therefore, the question of the existing ownership and how that works becomes very important. The fundamental question becomes whether the state wants to be a pipeline company or are there benefits to having a professional pipeline involved, in particular, when it comes to expansion, to be an anchor partner carrying the future expansion. He said that execution is fine for existing projects since the three producers have very strong capabilities in that regard, but in a future expansion it could be the State of Alaska alone or with a new partner, and the state may not want to be in that position. The questions around the continuity and momentum are the same in terms of what's involved in terminating the AGIA relationship.

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MR. MAYER turned to considering third party involvement [slide 20]. He said if one takes the path of the MOU, and it makes sense to leverage the work that has been done under AGIA and to transition it to a more commercial relationship. He asked what that would look like. He answered that it would mean maintaining the strong alignment between the producers and the state. In that instance, the state wouldn't worry about the tariffs on the liquefaction project or moving value to different places. The one important part becomes when a third party owns the GTP and the pipeline, is that if a tariff is involved the question becomes, "How reasonable is the tariff?" It then becomes a fixed component with essentially a guaranteed rate of return that could essentially increase some of the risk for the state. In particular it becomes important to evaluate how competitive the tariff is and who else could do this and if the state could get a better deal. In terms of the details of the term sheet in the MOU, the 12 percent return on equity and 5 percent return on debt - although those figures could move - but most importantly the agreement means a 75/25 split at least in the second year of the initial capacity of the pipeline. Thus, it means getting to a level of around 7 percent of the weighted

cost of capital used in determining the tariff. Then suddenly considering the North American regulated pipelines and U.S. FERC regulated pipelines, it appears to be competitive and well within the norm. The 75/25 split in debt-to-equity implies a high level of leverage and overall the tariff is much more sensitive to that than to things like the overall cost of equity. Thus, it becomes clear that this is well within the norm and is quite competitive and the question becomes if the state had a new bidding process, whether it could produce something better or lower and the answer is that ultimately we don't know.

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REPRESENTATIVE HERRON asked whether TransCanada is the strongest partner Alaska can find since TransCanada would want to encourage expansion. He asked him to score TransCanada in terms of the producers' expansion bias.

MR. MAYER responded by asking members to look at slide 21, other potential parties. It isn't about who the partner is but about the timeframe. He said a number of pipeline companies are capable companies, perhaps five, but all have execution capability and an interest in expansion. The fundamental difference, ensuring the project as a whole, going with the MOU, is more a question of how long the process takes and what else happens in the meantime since there will be a series of other agreements being signed. One question is whether there is value in having an experienced pipeline player with a strong interest in expansion at the table since all of the other project agreements are being signed and going through a bidding process. He said it could affect how long that bidding process lasts and whether it affects the timelines for the rest of the project if core commercial agreements are being signed without an experienced pipeline player coming in until later. He said that could be a cost in terms of negotiation terms by not having that interest represented as solidly as it could be.

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MR. MAYER, with respect to in-state deliveries, said that the state can use its equity-entitled capacity to carry gas to market at lower cost. The only question becomes whether the tariff is the lowest achievable and if the state could have a lower one through the competitive process. Ultimately the state may not know, or if the state goes through the competitive process, the state may find it doesn't have as good a deal as it

has on the table now since many "unknowables" exist. Clearly, execution capability exists to undertake this large, complex project. The arrangement of interests provides an appealing orientation since the pipeline company brings strong pro-expansion interests to the project, but the three producers bring strong cost-controls because they do not make money from a guaranteed tariff, they make their money by selling their gas. Thus the producers will be very concerned with the overall cost of pipeline project. In terms of continuity and momentum [slide 21], the state would maintain and accelerate all the work that has been done to date and the interests that have arisen around it [slide 21].

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MR. MAYER compared this to launching a bid and the fundamental question becomes the tariff rate, which could be higher or could be lower. Additionally, the cost terms of investor interest and time value of the money could occur and low investor interest could slow down the project. In the event the project is delayed a year or more it will affect the project cost in terms of present value of the future investment to the state. Further, uncertainty about the possibility of litigation and loss of work done to date can occur. Fundamentally, the legislature will need to weigh the cost of these things versus the probability that one could get a better deal, with all of the "unknowables" involved in that process.

MR. MAYER summarized key questions the state needs to consider carefully [slide 23]. First, the state needs to consider compensation the state might have to pay to terminate Alaska Gasline Inducement Act through other means and what intellectual property the Alaska LNG will retain. Second, the state also needs to consider if the HOA process will slow down the state and the producers if uncertainty, arbitration, or litigation in terms of the "GTP & Pipe" occurs.

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MR. MAYER said the state must also consider the odds that a new selection process will deliver better terms than those available today. That, in turn, somewhat depends on how representative the AGIA process is of the industry's interest in an Alaskan pipeline and how many bidders the state could potentially achieve with an open process. Finally, the state must consider whether a new tariff offsets absence from the negotiating table, reduced momentum, and the cost to dissolve AGIA. He concluded

that these are the things Enalytica believes the state should consider when viewing the Memorandum of Understanding.

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ADJOURNMENT

There being no further business before the committee, the House Labor and Commerce Standing Committee meeting was adjourned at 4:54 p.m.