

**ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE**

February 28, 2018

3:30 p.m.

MEMBERS PRESENT

Senator Cathy Giessel, Chair
Senator John Coghill, Vice Chair
Senator Natasha von Imhof
Senator Bert Stedman
Senator Kevin Meyer
Senator Click Bishop

MEMBERS ABSENT

Senator Bill Wielechowski

COMMITTEE CALENDAR

ALASKA MINERALS COMMISSION OVERVIEW OF ANNUAL REPORT

- HEARD

UPDATE ON THE ALASKA LNG PROJECT

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

DR. LANCE MILLER, Chair
Alaska Minerals Commission
Anchorage, Alaska

POSITION STATEMENT: Provided Alaska Minerals Commission Update.

ROBERT RETHERFORD, Member
Alaska Minerals Commission
Juneau, Alaska

POSITION STATEMENT: Provided Alaska Minerals Commission update.

FRANK RICHARDS, Senior Vice President

Project Management
Alaska Gasline Development Corporation (AGDC)
Anchorage, Alaska
POSITION STATEMENT: Presented AKLNG Project update.

LIEZA WILCOX, Vice President
Commercial and Economics
Alaska Gasline Development Corporation (AGDC)
Anchorage, Alaska
POSITION STATEMENT: Presented AKLNG Project update.

ACTION NARRATIVE

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CHAIR CATHY GIESSEL called the Senate Resources Standing Committee meeting to order at 3: p.m. Present at the call to order were Senators Stedman, Meyer, Bishop, von Imhof, and Chair Giessel.

ALASKA MINERALS COMMISSION OVERVIEW OF ANNUAL REPORT

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CHAIR GIESSEL announced the first order of business to be the Alaska Minerals Commission update.

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SENATOR COGHILL joined the committee.

DR. LANCE MILLER, Chair, Alaska Minerals Commission, said he also works for the NANA Regional Corporation. The Commission members are appointed from around the state including rural areas and represent placer mining, coal mining, metallic mining, and so forth.

ROBERT RETHERFORD, Member, Alaska Minerals Commission, said he works for Alaska Earth Sciences, a small group that consults mostly for minerals and engineering work such as at Sweetheart Lake near Juneau. He said the commission's goal is to create strategies that will help mitigate constraints on the mining industry.

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MR. MILLER said the commission's top ongoing priority is establishment of a stable fiscal policy for the state and making sure its agencies are properly funded. When you're trying to get companies to come to Alaska, having a stable environment to conduct business is paramount.

MR. MILLER said in terms of severance taxes, local companies work with the local government and reach arrangements like the payments in lieu of taxes (PILT) in Northwest Alaska. It is important for local jurisdictions to get benefits from mineral development. So, they have recommended that a portion of the state mining tax go back to the affected areas and elimination of severance tax but not do away with any property taxing ability. He said the minerals industry is in an upswing and now is a good time to take advantage of that and make sure they are collectively welcoming to the industry.

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MR. RETHERFORD said the "Stand for Salmon" ballot initiative is of concern and encouraged members to be fair in looking at it, but also encouraged them to examine the entire initiative process, because there is much too much opportunity to stand in the way of resource development.

There are a lot of concerns over water use, he said, and the report recommends that the legislature is the best place to determine what constitutes Tier 3 waters. The primary concern is that the state uses good science and a fair and balanced method to deal with the water quality issue and in determining "instream flow reservations" (IFR).

Finally, the bond pool that the state has set up for the small placer miners, in particular, should be kept in place, the concern being that the Bureau of Land Management (BLM) has suggested no longer allowing it to be used on federal lands. The thought is that any other steps would be a burden on the small placer miners and keeping the bond pool will allow them to go forward while assuring the BLM that they have good state agency review.

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MR. MILLER said the legislature and administration can do some things regarding federal priorities, especially now, given the situation at the federal level. Alaska is still young and is due a large amount of federal land and a large amount of wetlands, and there is sort of a "federal push-down" on things the state has to do on all kinds of fronts. These could be "sort of lumped" into public land closures and BLM resource management plans (that are very onerous) and might even contradict state's rights with ANILCA. These are significant issues and the commission wants to be able to support the agencies that can then work with the feds on their resolution.

The Sturgeon case about navigable waters is another issue everyone is aware of and making sure that Alaska has access through these waterways to public and private lands, Native lands, and so forth. The delegation is doing a great job in working these issues, too, but the opportunity is there now to resolve some of them.

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MR. RETHERFORD said public land orders that are left open for long periods of time and federal land withdrawals similarly put in place during ANCSA or ANILCA (points 9 and 11) deserve to be reviewed, and where appropriate, the BLM should release these lands so that the state and others can use them appropriately.

MR. MILLER displayed an AMA map of mines and mineral exploration locations stating that Alaska has five metal mines and one coal mine. The rate of success for moving a mine prospect to a mine is less than 1 percent. To get to this number of mines, 7,000 to 15,000 occurrences have to be reviewed.

Slide 7 graphed Alaska mineral development timelines and investments: the five successes were Kensington, Pogo, Fort Knox, Red Dog, and Greens Creek. The five still seeking success were Arctic/Bornite, Chuitna, Livengood, Pebble, and Donlin Creek. The unsuccessful one was Rock Creek. He said it costs an average of \$250-300 million and takes about 16 years to get to the decision about a mine. The successes are obviously mines in production: Donlin is a great example. It has been going for 24 years and has made over \$400 million.

MR. MILLER said competing for capital on a global stage depends on what stage the project is in. The exploration stage is high risk, funding is erratic, and a strong regulatory environment is critical. In the final feasibility stage (and subsequent decision to build a mine), the return becomes more predictable and it is therefore lower risk and the financing is easier to secure, but the political/regulatory environment is still critical.

He displayed two graphs (slide 10), one of exploration budgets from 2012 to 2017 and the other of mining equity capital from 2006 to August 2017. He said Alaska's trend has matched those graphs (a high of \$300 million in 2010/12 and a low of \$50 million and up to about \$90 million now). So, Alaska is competing on the global stage.

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MR. MILLER said slide 11 graphed combined commodity index (including oil, wheat, and everything) cycles back to 1749. The distance between the spikes shorten in more recent times and that is presumably as a result of news traveling faster. Slide 12 graphed zinc prices from 1970 to 2016 and he noted that there were four price spikes in that time including the one we are in today. This is just how the mining business is; you want to capitalize on the spikes and be able to ride out the lows. For example, when Red Dog came into production in 1989 was a period of high prices. Then prices went down into the "Valley of Death," which is the reason it didn't get payback for 14 years. Had their spike continued, the payback would have been much quicker like predicted. Global events can change metal prices, but they really trend with supply and demand. Basically, when metal stocks are up, the commodity price is low and vice versa. The consumption of basic metals is going up globally, and China drives a lot of it, but it is going up in the U.S. and the rest of the world, too.

MR. MILLER asked if anyone knew what the per capita consumption (including for cars and vitamins) of zinc is annually. He answered four pounds.

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He categorized the types of mining companies into Placer, Juniors, Mid-Tiers, and Majors. Placers are important although their investment strategy is family livelihood. Collectively, they add up to the equivalent of one large mine for Alaska economically.

Juniors' characteristics are high risk exploration or betting on the management; Mid-tiers' are betting on the project, and Majors are usually the more fully integrated companies.

He elaborated that Juniors are the discoverers of new deposits. They are something like the pharmaceutical or biotech industry where Bayer, for instance, doesn't do drug development but they work with start-ups with the goal of buying them out. It's a good parallel with the mining industry, much more so than oil between independents and majors.

Juniors have small market capitalization, depend on equity markets, and high risk. Examples are Nova Gold, Trilogy Metals, Donlin, Millrock, Constantine, International Tower Hill, Northern Dynasty, and Solitario. And they are critical for

feeding the whole system to make sure there is an ongoing supply of metals.

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The Mid-tiers are a small percentage overall and can have market caps up to a few billion dollars. Examples are Hecla and Greens Creek, Usibelli Coal, Hudson's Bay, Lundin, and Coeur d'Alene with Kensington.

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The Majors are often vertically integrated and have large market caps, but also have access to cheaper money. They have a global footprint. Examples are TECK, Barrick, Anglo, RTZ, BHP, MMG, Glencore, and Kinross.

MR. MILLER said Alaska's projects fit in with the juniors and the majors. A lot of the management for the Juniors came out of the Majors, so they bring that major experience with them. It's just in the last 20 years that the Majors have quit doing exploration, themselves. So, there are often strategic alliances.

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MR. MILLER said Canada has had some major infrastructure initiatives: the Yukon Bridges and Roads Program for \$360 million; B.C. has the Hydro Northwest Transmission Line for \$700 million-plus, and Ontario has a roads infrastructure project versus Alaska where typically the mining company builds its own roads, and often with public benefit. Examples are Juneau Hydro, the Copper River Railroad that one can still bike on, Hatcher Pass, and the DeLong Mountain Transportation System (DMTS). So, one can say of the U.S. approach that industry pays for it.

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He said there are lots of examples of community benefits (slide 20). He said there was a bit of a downturn between 2012 and 2014, which resulted in industry employee numbers dropping from 120 to 50 - really because exploration dollars dried up. And mining is critical for good paying rural jobs.

MR. MILLER noted that NANA actually broke the billion-dollar mark for distribution to other Alaska Native Corporations (ANC)s through 7(i) and 7(j). NANA received about \$1.7 billion and distributed over \$1 billion last year.

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The Frasier Institute's Global Mining Investment Attractiveness Ranking (slide 21) ranks Alaska in 10th place out of 91 global areas as being an attractive place for investment and the reason is because Alaska's mineral potential is ranked 5th in 91. But Alaska ranks 41 out of 91 in the issues around uncertainty of existing regulations and policies, and that is all in the legislature's court. Alaska is a great place to do business, but a lot of it is because of its geology.

Not wanting to leave on a bad note, Mr. Miller related a positive story about the Haines Consensus of 1982, legislation that came out of a conflict over resource development. The signatories were lumber companies, Lynn Canal Conservation, SEACC, U.S. Fish and Wildlife Service, Audubon, and the Alaska Miners Association Haines Branch, and that's when the Chilkat Bald Eagle Preserve and the State Forest Plan were founded. This is a case that has been good for Constantine Metal Resources Ltd., because some thought and planning has gone into the idea that multiple uses can co-exist.

SENATOR STEDMAN said the commission has been a little too soft in push back on the salmon initiative and suggested they be more aggressive. He suggested being cautious of groups coming together, because in the Tongass he has found that two out of four or five conservation groups will sue you in the end.

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MR. RETHERFORD said the Council of Producers has put up a lot of money into fighting the salmon initiative.

MR. MILLER said the initiative is bad not only for what it would do for mining and for rural economic development, even some fishing organizations are not supporting it. Maybe the legislature could do something to address the initiative process overall.

SENATOR VON IMHOF noted that she was going to follow up with an email to the commission with a list of four questions.

CHAIR GIESSEL thanked them for their service on the commission.

UPDATE ON THE Alaska LNG PROJECT

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CHAIR GIESSEL announced the continuation of the AKLNG Project update from the end of January. She said today they weren't going through the rest of the 60-plus-page power point; instead

committee members would ask questions. She also had the letter AGDC wrote responding to the one she and Senator MacKinnon submitted after their first meeting.

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SENATOR STEDMAN asked for him to comment on the letter from the Federal Energy Regulatory Commission (FERC) and the potential delay of the site selection between Valdez and Port Mackenzie.

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FRANK RICHARDS, Senior Vice President, Project Management, Alaska Gasline Development Corporation (AGDC), referenced slide 45 and said the FERC letter was another environmental data request, the fourth one since AGDC had filed their application in April 2017. Their first tranche of 801 questions came out in June, July, and August 2017. AGDC responses went out in tranches through September, October, and November 2017 and were finalized in January 2018.

Then, low and behold, AGDC got another request from FERC in February for more environmental information. AGDC's position is that a "tremendous wealth" of environmental information already exists from along the route through previous Environmental Impact Statements (Environmental Impact Statement (EIS) conducted on a North Slope gas project. In addition, AGDC has been working on their Supplemental Environmental Impact Statement (SEIS) on the Alaska Stand Alone Pipeline Project (ASAP), a project that has a gas treatment plant (GTP) and a pipeline that is coincidental to the locations of the GTP and pipeline for the AKLNG Project. That environmental process has been led by the Army Corps of Engineers over the last three years, and AGDC is about to receive it from them next month. It is their position that FERC, as a federal agency, could leverage the work that has already been done and advance and launch the schedule, but that hasn't been done. Instead AGDC gets another data request consisting of 289 questions about three levels of information: some are just refinement of previously provided information, some are requests for new information, which they will have to compile, and the third level questions ask for some very detailed analysis, similar to the alternatives analysis, for both the Port Mackenzie site or the Valdez site for an LNG plant. That is going to require quite a bit of work, and they want a clear understanding from FERC what will be acceptable, so they don't find themselves receiving a letter like this again.

MR. RICHARDS said AGDC will reply to FERC next week with a schedule for returning replies and follow it up with a face-to-

face meeting to get clarification on the larger category items such as the alternatives analysis.

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CHAIR GIESSEL said when the State of Alaska had four partners, 20 sites were considered for the export facility. They were honed down to five and then Nikiski was selected. She asked if they have access to all that work.

MR. RICHARDS replied that she was referring to the site selection work that was done in 2012 by the Southcentral LNG Project, the predecessor to the AKLNG Project, and yes, they have access to the site selection analysis. It came to them at the conclusion of the pre-FEED (front end engineering and design) Joint Venture Agreement (JVA). At the time, the project management team made the determination that Port Mackenzie, specifically, was an incompatible site because it was deemed to be a working port with a goal in the master plan of being a port that would have both import and export capabilities. They felt that site couldn't have a working dock face co-located with an LNG plant. So, it was disregarded. Then they looked for an alternative site nearby - north or south - and chose a demarcation point, which they called Point Mackenzie, and that is what was considered in the site selection study. It fell out, because of the issue of incompatible land use potentially with the uplands and the shallow bathymetry at the actual LNG berth site.

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MR. RICHARDS said he believed FERC wants to make sure that the alternatives analysis for Port Mackenzie is the same as what was done for Nikiski and the other sites in Resource Report 10 and he wants to make sure there is no additional work to consider.

SENATOR STEDMAN asked what delay he thought would be involved, if any, in responding to the alternative sites issue.

MR. RICHARDS replied the analysis of Valdez will take several months, but the section of gas line to Port Mackenzie is a small segment of the route where it intersects with the Wild and Scenic Rivers of Delta and Gakona, and those designations weren't in place when FERC did its original Environmental Impact Statement (EIS) on the route leading to Valdez. So, now those land use issues around will have to be analyzed and that will take several months. However, he needs to find out how much more information FERC wants - a tremendous amount of on-site field

work, a few technical borings, or bathymetry work - because that needs to be done in the summer time.

MR. RICHARDS said he had a good meeting with the manager of the Mat-Su Borough, his auditor, and one of the council members to discuss the Port Mackenzie alternative. The Mat-Su Borough was allowed to become an intervener, which means will be able to receive information as it comes available and be part of the conversation. The Mat-Su Borough offered AGDC any and all information that was available in their records to be able to help with this process, and AGDC will leverage that once they know what FERC needs.

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SENATOR VON IMHOF said on one hand, it makes sense to utilize work that has already been done and apply it to the FERC process, but his reply states "the information that is not required by the state or other agencies and will not be provided." What if FERC says even though the state and local agencies don't require it, we do? How would he respond?

MR. RICHARDS replied that the FERC letter also wanted plans that had not been developed yet under the normal national Environmental Policy Act (NEPA) process, such as the wetlands mitigation plan or the cultural resource management plan. AGDC is going to do those plans in the general course, but FERC wants them now. The state's former partners agreed to providing those plans at the time of application and AGDC has met a trail of agreements and has to follow through with them. They will respond with what FERC needs, but need a better understanding of an appropriate level of response.

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SENATOR VON IMHOF asked why he thinks FERC is asking for these items now, if he thinks it's unusual, and if he feels that fast-tracking the application process is missing important normal hurdles.

MR. RICHARDS replied that FERC's attorney says FERC is litigated on almost every decision they make, and they want legally defensible documents. His understanding is the previous project management team outlines and specifics of the plan would be provided at a future date. FERC wants to know that the format of the plans will meet its standards and that AGDC is going to follow through and complete what is needed for the federal authorizations.

AGDC is in the process right now of ending the Supplemental Environmental Impact Statement (EIS) for the ASAP and working with the Army Corps on the wetlands mitigation plan - they have gone through the NEPA process and the public process - and just received the jurisdictional determination by the Army Corps for the wetlands that are going to be impacted by the project. Seventy percent of the ASAP project represents the AKLNG pipeline and the court has accepted the wetlands mapping. Now, mitigation has to be identified for those impacts and their goal is to use that process in their FERC discussions.

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CHAIR GIESSEL referred to the AGDC letter of response and remarked on how tiny and fuzzy the print is. It's hard to read the timeline, but it looks like FERC will publish the Environmental Impact Statement (EIS) schedule on March of 2018, which is in a couple of weeks, and it looks like that time isn't going to be met. What can he tell them about the plan going forward?

MR. RICHARDS apologized for the very small font and said this timeline was an aspirational goal and the average timeline for getting to the point of publishing the NEPA schedule is about a year. FERC's letter says they want more information. Once FERC receives the requested information, they will determine if it is sufficient to provide a publication of that schedule and the preliminary draft of the Environmental Impact Statement (EIS) is being written now, which is a positive. That gives AGDC a timeline to follow through their metrics, which can mean a final environmental impact statement (FEIS) within 12 months.

CHAIR GIESSEL said she appreciates aspirational goals, but it may have given Senator von Imhof the sense of rushing and asked if that moves the other goal posts down to less than one year, as well.

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MR. RICHARDS responded he would get them a better print out and clarified that Q1 would be between January and March 2019.

CHAIR GIESSEL asked if he felt that was realistic.

MR. RICHARDS answered they feel that it is potentially doable, because of the tremendous amount of work that has been done, which includes"

- publication of a FEIS by the Army Corps on the ASAP project that has gone through the environmental analysis

- consulting with the federal permitting agencies
- having other authorizations in place including:
 - the 404 permit
 - the incidental harassment authorization from National Oceanic and Atmospheric Administration Fisheries
 - the air permit, which is being worked on right now

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LIEZA WILCOX, Vice President, Commercial and Economics, Alaska Gasline Development Corporation (AGDC), Anchorage, Alaska, supplemented that answer saying another part of the timeline, in equally tiny font, represents the commercial timeline of the project. She agreed with Mr. Richards that they want to present a permitting schedule that can be achieved. The commercial timelines can go along with the 12-month process or if the March date slips, it can go with a different process, because that approval is usually conditioned precedent to any of the definitive agreements becoming effective. So, there is an ability to mitigate the impacts of a more-lengthy permitting schedule up to a point in the commercial process.

CHAIR GIESSEL asked how finalizing an agreement with an investment bank and the due-diligence process with that bank be done when we don't have details of the project yet? Are investment banks interested in giving the project money at this point?

MS. WILCOX replied that the investment bank would be engaged in the planning of the equity and debt raising for the project. Yes, they do have quite a bit of information on the project; pre-FEED has been completed and hundreds of millions have been spent. There is a plan for construction of the project and an estimate; customers are interested. The next step is absolutely planning for the equity and debt rates for the project that will be executed in stages.

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CHAIR GIESSEL thanked her and asked if she was referring to slide 54, because she stated that pre-FEED is completed and now they are in the de-risking regulatory stage.

MR. RICHARDS said that was correct; AGDC identified the stage gate process when they took over the responsibility for this project in January 2017.

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SENATOR BISHOP asked how much more money it will take to answer the latest round of questions.

MR. RICHARDS replied that the budget is being built right now. FERC needs a response next week, which will identify the schedule as well as the deadline for responding to the first two categories of questions. They hope to meet with FERC as soon as possible to build out work efforts that will be needed to meet the third tranche. The same engineering companies that helped design the project are being used to respond to the questions. Responding to earlier questions cost about \$3 million/month.

SENATOR BISHOP asked if the mitigation damage payments under the Obama administration had changed under the Trump administration.

MR. RICHARDS responded that they hadn't got to the point of putting dollars on actual mitigation, yet. However, the approach has changed within the Army Corps in regard how the applicant can define impacted wetlands. For instance, Alaska has approximately 737 miles of pipeline route and the gas treatment plant (GTP) on the North Slope for the ASAP project. That represents about 204,000 acres of project area and 102,000 of that is wetlands. They are going to have to work with the Army Corps and figure out how much of those are high-value wetlands that will have to be mitigated and the Corps is allowing them to look at impacts of wetlands in discrete watersheds; for instance, Prudhoe Bay or the Susitna River. Then they will give AGDC a threshold: if the entire watershed has been impacted by 2 percent then they will require mitigation. Since there isn't much development in Alaska, a small number of watersheds will require mitigation. Then they will have to iron out how much it will cost.

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CHAIR GIESSEL referenced a bar graph on slide 6 and commented that it looks like they do make projections of cost.

MR. RICHARDS responded that that bar graph represents work that would be ongoing and provides ranges for those projects over the 2018/19 timeframe. They identify the major work effort that is synonymous with the FEED level of effort, called Class 3, to be able to advance the project definition and ultimately get to a point of acquiring lump-sum, turn-key estimates with contractors. That graph is an indication of what they anticipate the funding needs will be during this timeframe. One activity called the core regulatory team is the core team from both the

ASAP and the AKLNG project. That is augmented with outside contractors to provide the specific answers as needed.

CHAIR GIESSEL asked what the (slide 6) bar graph adds up to.

MR. RICHARDS answered the lower right-hand corner displays ranges between \$84 million and \$790 million. It will depend on their ability to execute the work and to be able to initiate the work with the major contractors in a timely fashion. This bar graph is a projection of the next 18 months.

SENATOR VON IMHOF went back to the last three bullet points on slide 54:

1. Have you identified and secured parties interested in the equity investment in the infrastructure project?
2. Have you identified and secured lenders?
3. Have you secured large engineering, procurement, and construction (EPC) companies to manage the construction project?

She said the unlimited receipt authority for the Alaska Liquified Natural Gas Fund issue is floating around the capitol building and asked if that authority is needed to be able to raise that \$700 million quickly.

MS. WILCOX said she wanted to go to the first bullet - Have we secured customers sufficient for financing - and said a Gulf Coast LNG project developer recently told her that the offtake contracts are key to securing the financing. This has been AGDC's position (LNG sales would secure the financing). The bullets are listed in the normal order of a project's progression, but some of activities are done simultaneously. So, if interest is shown from customers, some of the money can come into the project at that time. For example, Venture Global is developing a Louisiana project that over the last two years has raised about \$470 million in equity through 6 or 7 placements. They are now going through FEED. The project is for about half of the project total of 30 million tons, and the only offtake agreement announcement she has seen is for 1 MTPA.

MS. WILCOX said AGDC has done its marketing and has identified parties that are interested in purchasing LNG from the project. And this year they are working to secure those agreements and bring them to a definitive point. At the same time, they are starting to plan for the equity raise that would cover the FEED

costs up to \$700 million. To the extent they can accept that money from the outside sources, it would help those potential equity investors make the determination of whether they want to invest. Those investors will also ask if they will be able to invest in the project after that without another vote of the legislature, a key question the state has to resolve.

SENATOR VON IMHOF said what she heard is that at this time she can't answer the bottom three bullets, because they are still working on it, and yes, they would like unlimited receipt authority in order to easily raise that money to aid in moving the project forward.

MS. WILCOX answered that was a good summary of what she said, and she recognizes that it is very much the decision of the State of Alaska and the legislature as to how to approach that question.

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SENATOR STEDMAN asked if the legislature gives unlimited receipt authority to AGDC, will it take the project through construction, all else being equal and everything rosy.

MS. WILCOX answered there are a number of touch points and approvals the legislature would have to make along the way detailed in the answers to the letter they submitted. One of them is a best interest finding (BIF) on the royalty in kind (RIK) issue, which defines the state's contribution of gas to the project without which the project doesn't work. The state has a number of other issues to resolve to the extent that it makes any investment decision to participate in the project. It does not have an unlimited ability to go forward. The chief one is the RIK decision.

CHAIR GIESSEL pointed out that those answers are on page 5 of the letter under the heading of Gas Supply Field Cost Allowance Agreement and Joint Venture Marketing and Other Gas Disposal Agreements. Sentences there say the "need to be approved by the legislature" and "will require legislative approval."

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SENATOR STEDMAN said their eyes have been struggling with the timeline and the financing and wanted it printed out in bigger font. He asked if they were concerned about having enough funds available to deal with the FERC requests. "It's all full speed ahead without our financial assistance?"

MR. RICHARDS replied that slide 6 showed a range of numbers and if they didn't receive a significant influx of cash to be able to advance into the major FEED spend, they then would have to fall back into achieving a regulatory program and acquiring the federal permits. They feel they have built a budget to be able to take them through the Q2 of 2019 at current expenditures and that includes bringing on the financial advisor who will take care of the regulatory advancement, the DOTPF expenses, and the ongoing commercial engagements.

He said it won't be enough for the next major definition phase. AGDC wants to work with other investors to see if they are interested in bringing money to the table. If the money comes in for the project, part of the challenge will be what stage-gate they will follow. When AGDC and whatever its partners end up being get to the final investment decision (FID), the legislature will have the opportunity to identify their concerns and objections if necessary.

SENATOR BISHOP asked if they have enough cash to theoretically get deep into 2019 right now.

MR. RICHARDS answered yes.

SENATOR BISHOP asked if Mr. Richards would want to bring an authorization back to this body to accept funds from potential partners or buyers of gas to get to FID.

MR. RICHARDS said that was correct. As he said before, they have entered into a Joint Development Agreement with Sinopec, the Bank of China, Ltd., and CIC Capital Corporation, and their hope is to have a definitive agreement by the end of 2018.

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MS. WILCOX added that in order to make definitive agreements with interested investors, the project will need to know what it can offer in terms of contributions and terms, and that is very dependent on the decisions made by the State of Alaska. They anticipate an active engagement process with the legislature to flesh that out.

SENATOR BISHOP said the DNR commissioner will need that information, as well, to make the RIK decision.

MR. RICHARDS said that was correct.

SENATOR STEDMAN said a consultant talked a few days ago about the synergy that would be created in this project if some of the Chinese companies came forward. He pointed out that China could retire coal plants and clean up its air, which would lead to healthier cities, and those gains that are harder to quantify in the negotiations. The Chinese are also interested in supplying modules faster and at a lower cost and then delivering them to the project and manufacturing the pipe. He asked if those issues are part of the discussions.

He also noted Mr. Richards' past work on bridges and roads at the Department of Transportation and Public Facilities (DOTPF).

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MR. RICHARDS replied that he was an advocate at the DOTPF for a multi-year program to make sure there were adequate roads and bridges for the project. As to Chinese participation in the project, the JVA, with ExxonMobil in the lead, took a "concerted look" at modularization of the major plants and where the best quality steel was for the most cost-effective rate. It included a very detailed review of modular construction in China, because it is producing large modules now for international oil company developments and offshore oil platforms and meeting their standards. For instance, two weeks ago he went to a plant owned in a joint venture by Fluor and the China National Offshore Oil Corporation (CNOOC). It has a 2 million square foot module fabrication yard and can produce modules in excess of 30,000 tons. Their assembly facility can bring in the raw product, work on it, develop it, erect it, and then put it on a barge in very short order and to the exacting standards of the international oil companies.

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A recent study done by Fluor looked at strategic sourcing options and AGDC looked at countries like China, Japan, and Korea, because they produce not only the steel but the modules necessary to manufacture the plants looking for ways to reduce the overall cost of the project. Fluor identified potential savings of almost \$1.4 billion on the project utilizing some of this methodology.

He said China does have the capability of producing the modules and of producing steel plate that could be rolled into pipe. The concern now is with potential tariffs coming on board for offshore steel production into the United States (U.S.). The U.S. doesn't have steel manufacturing to produce the grade of steel necessary for that pipe, and that has been identified to

the Trump administration. But the U.S. has plants that can roll that steel into the 42-inch pipe and they are engaged in conversations with those pipe mills to make sure they can meet the standards that are called for in the contract. So, they are looking for the synergies between offshore production and U.S. manufacturing capabilities to make sure they are in line with bringing a project in that will be at the lowest cost but meet the requirements, standards, and specifications that are in place.

MR. RICHARDS said China is actively engaged in cleaning up its air and has closed many coal plants shifting them over to gas-burning turbines. Because China made this massive push, it created a shortage of LNG, but it's evident when you go to Beijing you can now see the blue sky. When you leave Beijing and go to manufacturing areas, there are still coal-fired power plants and you can see the smog and taste it when you breath. Unfortunately, because of prevailing north east winds, the U.S. gets a lot of that residue coming into its air space and hopefully, China cleaning up its air is another environmental benefit for Alaska.

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MS. WILCOX directed her comment to Senator Stedman and said other than the EPC agreements, a number of other agreements need to be defined and finalized later in the year. Those agreements relate to how much LNG will be taken from the project by the parties, the pricing associated with that, the financing, how much of the debt could potentially come from the Bank of China or other Chinese banks, and whether there will be an equity investment made in the project by the China Investment Corporation (CIC), China's sovereign wealth fund, that invests all over the world. In other words, a package of agreements need to be termed up before the end of the year. The Chinese are doing a fair amount of due diligence, because this project is new to them. They are very interested and have been to the North Slope before, although the number of representatives was small.

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SENATOR STEDMAN said it appears that this integrated network that China has is going to create a lot of synergy versus the capitalist system in the United States with different companies, and that should be remembered in price negotiations. A lot of money can be made building the modules versus just a straight equity or debt investment.

He said several years ago when they were looking at the different projects, one of the big concerns was lead time for manufacture of quality pipe delivered on time. He asked Mr. Richards to touch on that. And because the rolling manufacturer he visited was in Arkansas, he assumed the project wouldn't be shipping steel from China through the Canal through the Gulf and then back and up and asked what his thoughts were on that.

MR. RICHARDS answered that AGDC is engaged in active discussions with both steel and pipe manufacturers, trying to come to a short list of companies that can meet their specifications and product delivery timeline. The ASAP went through a similar process in looking at strain-based designed steel. They talked to folks in Japan and Austria for steel production, and to an Indian company called Welspun Group for rolling. Welspun was so interested in the project that it flew steel plate from Austria to their pipe plant in India, rolled it, and then provided it to AGDC in Houston for testing. So, they are talking to multiple mills around the world about capabilities for meeting the specifications. ExxonMobil had some test pipe delivered previously, but it didn't meet the standard.

He knew of two mills that can roll the 42-inch pipe; one is in Arkansas and the other is in Panama City, Florida. The steel plate could come from Austria. It could come from China or Japan, but right now there is a 30 percent tariff on that pipe, so it's not economic.

When they get to the point of launching a project and put that long lead item in place, AGDC will have to put orders in with multiple mills and not just "hang our hat" on one mill. It's a tremendous volume, in excess of 800,000 tons, of pipe, and they want to make sure of having a delivery mechanism in place to get that pipe into Alaska pipe storage yards and on to the right-of-way to execute the project in a timely fashion. The delivery time and the ability for those manufacturers to deliver the pipe is going to depend on where the project fits in the world's project queue, and a big decision point is if AGDC wants to reserve AKLNG's place in the queue by providing them with an assurance that the pipe will be there. That is being worked as he speaks.

SENATOR VON IMHOF said the supply and demand forecast is on slide 38, but she thought a project of this size warranted a bit more analysis. A year ago, she asked for a map of the different projects that are coming on line that identified which ones should be ready to go between 2023 and 2027. She wanted to know

where they are located, how big they are, how close they are to tide water, who is financing them, and how they compete with Alaska's project. She thought this supply-side analysis should be at the beginning of every presentation.

On the demand side, there are four or five significant publications around the world that constantly analyze changing market conditions and model inputs out into various years. They provide high, medium, and low probability, and she thought that should also be updated each year with inputs and assumptions identified. Those things make a difference in whether Alaska's project is competitive.

SENATOR VON IMHOF said, Taiwan is missing from slide 38, which was presented a month ago and she asked what happened to it. "That's kind of a big deal." She has asked these questions for a year in various iterations and asked if the work is too much, irrelevant, or erroneous; or does he just not agree that is what needs to go into a presentation.

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MS. WILCOX responded that she absolutely agrees that the project needs to compete in the global sense. The market is large and growing and there are lots of agencies and analysts looking at very detailed assumptions on the project, but many of the individual project assumptions are still opaque to the outside world, because each project is different, and many are privately owned. She believed that they had provided information on project costs and drivers but explained that each of the other projects is different: some are all equity-owned, some include upstream, some don't include upstream; they are clearly all very different.

A number of publications analyze all of that information, and AGDC over the last year, partly prompted by her questions, has stepped up its efforts to analyze and look at those publications. One of the services they have purchased is IHS Markit and they attended their December conference to build up a relationship, so they can ask questions, particularly from the customers, and get answers. A member of her team put together a summary of all the projects coming on line and the 96 million tons worth of projects under construction.

MS. WILCOX said they could "take another crack at" the statistics in the next presentation and show more detailed slides on what is available, but the rest of it is somewhat speculative. Many projects are proposed and estimates on which

ones will come on line are constantly changing. It depends on what funding each project secures, what customers they develop relationships with, and how much ground it will gain over a year. Their focus over the last year has gained more ground in the market, so that people actually know about it and know it is worth something and worth buying from. The analysis has not been ignored. Even if analytical companies have details and AGDC has a subscription service that gives them that information, it's not something she could put on a public slide project-by-project.

She said they would continue their efforts to bring more detailed analysis into the picture, but the broad situation remains largely the same: in 2026 there is a significant amount of uncontracted capacity in the market. She knows this because there haven't been a lot of contracts announced for that timeframe over the past year. However, around the world, about 96 million tons of projects are under construction that would seem likely to fill that capacity. The remaining uncontracted portion for the 2026 timeframe is 20-40 million tons depending on which demand forecast one believes, but it grows rapidly after that. There has been only one year in which the LNG market hasn't grown. After 2026, the market continues to open up rapidly. According to IHS Markit, that level of uncontracted capacity that currently doesn't have FID projects going into it by 2030 grows closer to 100 million tons, and this is the wedge AGDC is trying to fit its project into.

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CHAIR GIESSEL remarked one of the key points Senator von Imhof frequently underscores is risk, and LNG competition is one of the risks that this body has to take into account in determining whether this project is competitive and should go forward. They are also focused on the regulatory and permitting in progress.

"As you ask us for virtually unlimited receipt authority, we have to think about what that means for the State of Alaska as we act as the board of directors," Senator Giessel said.

SENATOR BISHOP said a pipe mill in Calgary can roll 42-inch pipe and asked if they had done any rough take-offs at bringing a mill into Port Mackenzie. Because the mill he toured in Calgary was actually quite small.

MR. RICHARDS said he was on that tour of the pipe mill with him and that the AGDC team had not actively engaged in that concept and neither did the ExxonMobil-led project management team.

They looked at the capacity to be able to produce the quantities needed, and that was probably one of the things that was used to screen it out. But they need to consider that opportunity again as an option under the strategic sourcing strategy. Port Mackenzie has the available land and an existing dock face that could handle that product, but they hadn't studied what the cost would be.

SENATOR BISHOP asked if he had worked out an arrangement to operate the gas treatment plant (GTP) in Prudhoe Bay.

MS. WILCOX replied that the AGDC project will need to have a high number of touch points with the Prudhoe Bay operator including access to the lease, and all of that is subject to the how the producer participates in the project to monetize their gas. She presumes that when it comes to a construction timeline, they will have the ability to enter into the necessary agreements to access the dock, the GTP lease, and all the receipt information that is necessary for facility sharing and things like that. She knows they have a list of things they are thinking about.

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SENATOR COGHILL asked her to explain how purchasing natural gas would be done either directly or through an affiliated intermediary and the likelihood of getting the volumes needed from the leaseholders up there.

MS. WILCOX said the basic mechanics of volume break down the same as they did in the previous project. The project has two large fields that are discovered and are considered a reliable source of supply for the gas project. Prudhoe Bay has about three-quarters of the resource; Point Thomson has about a quarter of it. In order to construct the three-train project, all of that would be needed to achieve the economics in order to compete in an "eight-dollarish" world of LNG, which is what the long-term LNG pricing is looking like right now.

They also think there is an ability to do a first phase with a two-train project if investors can be found willing to do that, because the smaller the initial investment is the better. For a two-train project you could either have a mix of gas coming from both fields or start with one and continue with another. In order to do that with an affiliate, one could use a merchant model where a merchant buys the gas and then sells it at the other end of the project. Here, they are looking at a hybrid of the merchant and tolling models. So, an affiliate of AGDC or

another entity owned by the State of Alaska could purchase all the gas, toll it through the project, and sell it to the LNG buyers in Nikiski. It would pay tolls to the owner of the infrastructure, which could potentially be the State of Alaska (that at the moment owns 100 percent of it) and that tolling revenue could finance the project. The tolling revenue would ultimately be secured by the off-take agreements. So, the off-take agreements would have a pricing structure that would cover the toll and the gas purchase. Then the gas purchase price is passed on to the upstream including the State of Alaska. In that situation, last year's capacity solicitation had a fairly low response for the tolling part (parties that are willing to pay the toll and sell their own LNG into the market). Through that solicitation, they found that the project didn't have the critical mass of parties willing to sign up to pay those tolls. But it has parties willing to sell the gas, have someone in the middle pay the tolls, and then sell the LNG. So, that is the structure they are working under at the moment. It doesn't preclude other parties with the gas from taking a tolling position on the project and just slicing off part of the capacity and making that part of the revenue stream that underlies project financing.

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SENATOR COGHILL asked because of the interest in getting money from Chinese investors who could somehow be involved in the toll structure and buying the LNG, could that result in the state finding itself in a real structural pinch. Could the Chinese vertically control the whole system?

MS. WILCOX replied that they could if they bought some of the existing upstream resources. They would kind of be in the same position as maybe one of the producers that markets LNG all over the world.

SENATOR COGHILL said his only concern is that the state would be squeezed out of any value. The Chinese will leverage every dollar they can, and Alaska might not have the same leverage.

MS. WILCOX agreed and said having a party that is owned by the state purchasing the gas adds a layer of protection. Their mission is to sell the gas at the maximum price possible including the state gas.

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SENATOR STEDMAN asked for help on the answer to question 8 of the letter. It looks like they have decided to use a placement

agent versus a financial adviser to avoid dealing with the Dodd Frank Wall Street Reform Customer Protection Act.

MS. WILCOX replied that the reason AGDC would bring in a placement agent instead of a financial advisor is because the Dodd Frank Wall Street Reform Customer Protection Act says a municipality (how AGDC would be classified under that act) can't hire a financial advisor and allow them to continue on as an investment banker or as a placement agent. The issue being that any large company that would be willing to come in and would have an interest in raising money for this project ultimately, if they come on as a financial advisor would lose that opportunity. So, the pool of interested financial advisors becomes fairly small and goes down to the companies who wouldn't have the capability or the experience to be a placement agent. So, the advice that you get is what you get with those companies that are more consultants than actual investment bankers. Therefore, AGDC considered it a lot more efficient and beneficial for the project to open-up the field to actual investment banks that could lead the placement of equity and debt. That is the selection process they have conducted.

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SENATOR STEDMAN asked if there are any right-of-way sections they don't have access to or have not tied down tight. He also wanted her to touch on the 400 acres in Nikiski, which he assumed is the site location, and if they have a forward contract or any agreement tied down on that - to get rid of the rumors.

MR. RICHARDS answered that HB 4 identified the legislators intent for DNR to provide the pipeline right-of-way necessary to AGDC to build the pipelines across state lands, and they have done that at no cost. The federal right-of-way comes to them as the end result of the Environmental Impact Statement (EIS), which is a record of decision, which is the granting of the federal right-of-way by the Bureau of Land Management (BLM) to AGDC. When the final SEIS is achieved for the project, they will have obtained the federal right-of-way across federal lands. That leaves about 40 miles of private lands that AGDC will have to acquire right-of-way leases to. They are currently engaged in that process with one of the owners, Ahtna Native Corporation, who controls 38 miles of land south of Denali National Park by the community of Cantwell. It is a major effort because it is the largest private landowner that either project will have to enter into an agreement with.

The final bit for the AKLNG project will be some private parcels on the Kenai Peninsula before getting into the Nikiski LNG site where a large amount of acreage was purchased by the Alaska LNG LLC (consisting of BP, ConocoPhillips, and ExxonMobil), which AGDC was not a party to, thinking that AGDC, as the representative for the state would come in at a future date. AGDC is in discussions and negotiations with that LLC for acquiring the rights to that land to be able to show FERC that they have control, which is one of the key points FERC will want.

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SENATOR BISHOP said we're not the only project in town and there will be competition for material, manpower, and contractors. Is someone looking at that? And at Alaska labor?

MR. RICHARDS answered he understands their keen interest in making sure Alaska has the skill set and labor trades to be able execute the project. As for the equipment, they went through an exercise of hiring pipeline contractors, both Alaskan and Lower 48, and heavy civil contractors, to be able to help them in looking at the execution of the project and ultimately coming up with a cost for it. It was a very valuable exercise, because they talked about the wide-ranging opportunities specifically regarding equipment. It was educational in hearing from the pipeline contractors who would come to Alaska and have to mobilize a huge fleet if it was owner-supplied equipment. Certainly, they do have a core fleet in the Lower 48 but suggested that the owner supply the equipment to make sure the it is available in time to get that equipment constructed, delivered, and on the right-of-way ready to execute the project. This is a consideration as they go through their construction execution planning efforts.

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The other ancillary part to that is having parts available to this large fleet spread out across 800 miles and that the contractors won't have to compete for those parts.

MR. RICHARDS said they have been working the Department of Labor and Workforce Development (DOLWD) on the development of a plan for making sure Alaskans are going to be to have the training opportunities to be skilled to be able to work on the project. AGDC is identifying the skill needs and when they will be needed, the build-up of crew sizes, and the sequence of when the labor crats would be necessary across the spectrum of the project from the North Slope to Nikiski. Because of the large

work force that will be necessary, available skilled, trained, and qualified Alaskans are going to work on this project; it's a benefit to the project to use Alaskans rather than outside labor.

CHAIR GIESSEL thanked both speakers for being willing to ad lib answers to the committee's adding that they could come up with another 15 hours-worth. Going forward, they are interested in the project structure. However, somethings are missing on their timeline: for example, where the legislature and the DNR come in. As she looks at question 9 about the progress of DOTPF on analyzing the impacts, the first sentence says DOTPF has advised that the existing roadway structures can handle the increased loads the pipeline construction project will add. She was here during construction of the Trans Alaska Pipeline System (TAPS) and knows that "those roads got really torn up" and she wasn't sure our roads are actually prepared for that. She was thinking specifically of the bridge over Hurricane Gulch. She wanted to know more about where DOTPF fits into this and what their plan is going forward.

CHAIR GIESSEL said the committee also wants continued information about the project structure and Senator von Imhof's request for an economic overview of supply and demand into the 2020s. She reminded committee members that they could submit more questions in writing and thanked the commissioners for writing the answers down as something the committee can refer back to.

SENATOR BISHOP asked if they ever anticipate bringing a potential client to the committee.

MR. RICHARDS replied that he had considered it.

MS. WILCOX said she had not thought about it, but it's possible. They have held meetings with DNR and interested customers and depending on the decision points that come in this project, there may very well be a place for other project participants to come in front of the committee just as they used to when the producers were investors in the project.

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CHAIR GIESSEL adjourned the Senate Resource Committee meeting at 5:39 p.m.