ALASKA STATE LEGISLATURE
HOUSE RESOURCES STANDING COMMITTEE
January 30, 2015
1:00 p.m.

MEMBERS PRESENT

Representative Benjamin Nageak, Co-Chair
Representative David Talerico, Co-Chair
Representative Mike Hawker, Vice Chair
Representative Craig Johnson
Representative Kurt Olson
Representative Paul Seaton
Representative Andy Josephson
Representative Geran Tarr

MEMBERS ABSENT

Representative Bob Herron

COMMITTEE CALENDAR

UPDATE: ALASKA LNG PROJECT BY STEVE BUTT, EXXONMOBIL

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

STEVE BUTT, Senior Project Manager, Alaska LNG Project
ExxonMobil Development Company
Houston, Texas
POSITION STATEMENT: Provided a PowerPoint update on the Alaska Liquefied Natural Gas (LNG) Project.

ACTION NARRATIVE

1:00:31 PM

CO-CHAIR BENJAMIN NAGEAK called the House Resources Standing Committee meeting to order at 1:00 p.m. Representatives Tarr, Hawker, Johnson, Olson, Josephson, Talerico, and Nageak were present at the call to order. Representative Seaton arrived as the meeting was in progress.

UPDATE: Alaska LNG Project by Steve Butt, ExxonMobil

1:01:30 PM

CO-CHAIR NAGEAK announced that the only order of business is an update on the Alaska Liquefied Natural Gas (LNG) Project to be presented by Mr. Steve Butt.

CO-CHAIR NAGEAK explained that this update is required under Senate Bill 138 [passed and signed into law in 2014]. The review will focus on how the integrated project is progressing. Facility and infrastructure design work are progressing while securing permits required to ensure the project is successful and ready to evaluate the front-end engineering and design (FEED) decision in 2016. The review represents joint work by all the parties involved in the project, including the State of Alaska through the Alaska Gasline Development Corporation (AGDC), [TransCanada], BP, ConocoPhillips, and ExxonMobil. The integrated project is separate from work the individual parties are completing on related issues defined under Senate Bill 138, such as property tax, royalty structures, and fiscal issues, including durability. These separate issues will be the subject of subsequent updates that the committee will hear within the next three weeks. The committee looks forward to that phase of updates with appropriate representatives of the parties, as well as the right people from the state's departments of revenue and natural resources, to ensure the legislature and the public are fully informed on the path forward.

1:03:38 PM

STEVE BUTT, Senior Project Manager, Alaska LNG Project, ExxonMobil Development Company, noted that this is the second update for the Alaska LNG Project, the first update occurred in September 2014. Senate Bill 138 requires the project to provide three updates a year and therefore he is before the committee on behalf of the project. In his role as project lead he works with people from all the parties, so the work that he will be talking about is the work done by all the entities involved: AGDC, BP, ConocoPhillips, ExxonMobil, and TransCanada. He explained that about 130 people have been joined as a team from all the entities and it is the work done by those people that he will be showing the committee. The integrated team is supported by hundreds of contractors all over the U.S., and it is that key work that creates this project that he will be talking about.

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REPRESENTATIVE HAWKER referenced Mr. Butt's statement that his presentation is a statutorily required quarterly update. He inquired whether today's presentation comprises the entire quarterly update that legislators are to receive.

MR. BUTT replied that this is the project's quarterly update under Senate Bill 138, but said he understands the question around the parties and the language in the bill and he is confident the parties are happy to come answer any questions. As he goes through the presentation he can talk about some of the issues and how that would work. He said he would like to differentiate the project's work that he will be talking about from the owners' work where the entities have another 100 people working on very complex commercial, royalty, property tax structure, and fiscal issues. It is all part of how to make the project work, but there are some things that the entities do together on an integrated basis because it helps the entities to reduce their costs. He clarified that he will be focusing on the integrated project work. The owner issues, which he will mention, require different groups of people to come before the committee to speak on behalf of the owners, and he would be happy to help facilitate that. He said he will deflect any questions that are not best answered by him.

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REPRESENTATIVE HAWKER stressed that this is a very important point to him. He recalled that last year the committee debated at length an amendment by Representative Saddler to Senate Bill 138. The committee had a very lengthy on-the-record conversation about what was contemplated in these quarterly updates. The committee's point was that the legislature was not expecting just the project work update as Mr. Butt has defined it. It is important to have on the record, for the public and legislators, a dialog with the owners as regards the work of the owners. He stated he is not comfortable with characterizing today's meeting - limited to the project work - as the statutorily required briefing. While he can see it as being a component of that briefing, he is not prepared to cede to anyone that this fully satisfies [the legislature's] expectations and requirements for these quarterly briefings.

MR. BUTT understood and offered to help facilitate additional discussions. He said this is the first piece of others over the next few weeks, as was stated by Co-Chair Nageak, and he will

work with the committee to ensure that the right people are in the room to answer questions.

REPRESENTATIVE HAWKER stated this is an important clarification for the record.

CO-CHAIR NAGEAK requested that the people that the committee wants to hear from are at the next briefing.

1:09:02 PM

MR. BUTT began his presentation, noting that he will focus on the progress made since September [2014], not a review of the fundamentals of the project. He said the project's scope as defined is to figure out how to commercialize North Slope gas. Between Prudhoe Bay and [Point Thomson] about 35 trillion cubic feet of gas is known and discovered. The project team has worked on the concept to commercialize that gas and it is thought that it will take $45-$65 billion of investment to move and treat that gas, transport it from north to south, then liquefy it and make it accessible to markets.

MR. BUTT addressed slide 2, noting that since the September update there are no health, safety, or environmental issues to report. The project is continuing to build its "culture of caring" to ensure that everyone goes home safely and treats the environment responsibly. The work being done now is viewed as the first steps toward a much bigger project, so the desire is to get started on the right foot on safety, health, and the environment. Some of the key contracting items [for pre-front-end engineering and design (Pre-FEED)] are complete and all the teams are working well. Contracts are in place with some of the largest global LNG companies. About $82 million was spent in the second half of 2014 to do this. The state, through Senate Bill 138 and its representatives TransCanada and AGDC, carries the midstream and downstream portions of that investment, so about 25 percent of that money is carried either through TransCanada or AGDC. It is not exactly a 50/50 split because a little bit more money was spent on the midstream. He said that today he will help committee members understand how that money has been used and try to create a sense of comfort that the money has been used well and the project is progressing well.

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MR. BUTT related that the first drafts of the Resource Reports have been completed. These reports go to the Federal Energy

Regulatory Commission (FERC) and are required to get an environmental impact statement (EIS), which is the key precedent to getting construction permits. Each report is very detailed, from hundreds of pages to over a thousand pages. Reports 1 and 10 were provided to FERC in 2014 and the balance of the first 12 reports will be provided to FERC eminently. These reports are very important to the project because the regulatory risk and the regulatory timeline drive everything. An investment decision cannot be evaluated until it is known whether the project will have a construction permit. It is the "critical path" - the work that must be done as precedent to all other work. Finishing the first drafts of these Resource Reports is the first step. In about a year the more detailed, defined, and complete second drafts will be submitted to FERC. He explained that today's presentation covers the time period between the first draft and completion of the second draft.

MR. BUTT reported that export authorization from the Department of Energy (DOE) for Free Trade Agreement (FTA) nations was received in November 2014, giving the project the right to export LNG from Alaska to countries with which the U.S. has Free Trade Agreements. However, since that is only a portion of the Asian market, work is continuing on an application that was provided to the Department of Energy in second quarter 2014 to secure non-FTA nation export authorizations. This is important because it is illegal to export crude oil products from the U.S. In the Lower 48, only a couple of projects currently have the right to export gas. The "Kenai LNG Project" has had a long-standing export authorization from Alaska. The Alaska LNG Project is seeking an export authorization larger than anything that has been approved. A federal permit through DOE is fundamental in helping to make forward investment decisions because if the project is moved to construct it must be ensured that the LNG can actually be exported.

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MR. BUTT said the public was kept informed via 14 open-house sessions with FERC participation. People coming to the sessions were able to talk directly to FERC to help FERC decide how the environmental impact statements should be written and what impacts should be considered. Once the first draft Resource Reports are submitted to FERC, FERC will take over and lead that engagement process. The intent is to create an environment where all the stakeholders and the communities can come to these discussions. A transparent environment ensures that people's concerns are addressed now rather than later.

MR. BUTT, in regard to a transparent environment, took a moment to address the issue of confidentiality. He explained the project has a "sponsors group" which is leadership members from each of the participating equity companies and entities, including representatives from the Department of Natural Resources (DNR) and the Department of Revenue (DOR). Group members have talked about how to do better at managing and simplifying confidentiality and agree that a way needs to be found to create an environment in Alaska where Alaskans have enough information to support the decisions that need to be made over time. Sometimes, however, the words get used with certain context. He said he would suggest that the only information the project is trying to hold a little bit more confidential defines the project's competitiveness. The whole future of the Alaska LNG Project is dependent on the ability to develop the project at a low enough cost of supply that it can compete with the more than 100 other LNG projects currently under development [worldwide]. The U.S. Energy Information Administration (EIA) recently estimated that there are two molecules of gas under development for supply for every molecule of forecast demand over the next 20 years. This means that half the projects being evaluated and pursued do not have a market and will be unsuccessful because they cannot compete. It is important to find ways to work together to keep the Alaska LNG Project's costs down so it can be competitive. To move this project forward will take a low enough cost in a structure that works for all the owner parties to be competitive with all those other projects. For every project built, at least one will not. Since this is a very big project, it will displace more than one or two of the others. He expressed his confidence that ways can be found to address confidentiality in a constructive manner that works for everyone.

1:18:45 PM

MR. BUTT returned to slide 2, noting the project is progressing its [2015] summer field season. He explained this is how the required regulatory data is gathered to demonstrate to the federal government that the project will not adversely impact the environment.

MR. BUTT continued on slide 2, discussing several messages. First, he emphasized, the Alaska LNG Project is an integrated LNG project. Over the past several decades the language has focused on using pipelines to move gas. However, pipelines are a very different business model than the Alaska LNG Project.

Pipelines move gas from Point A to Point B, whereas LNG projects liquefy the gas, shrinking [the volume] by a factor of 600, and then putting the LNG on the water to access markets anywhere. Liquefied natural gas has a much different market flexibility which changes the risks and the business model. Also, LNG falls under a different federal regulatory statute - Section 3 rather than Section 7 [of the Natural Gas Act, under which FERC is the reviewing agency]. This is important because it allows integrated work on this project. Previous iterations of this project were pursued under Section 7 and had restrictions on the ability to talk between the project elements and the upstream entities. The Prudhoe Bay entity and the Point Thomson entity are managed under the joint operating agreements that are signed by those unit owners, and those agreements are separate from anything that is done under the Alaska LNG Project. Historically under Section 7 there were restrictions on the data that could be shared, but under Section 3 as an integrated LNG project there are no restrictions, which means design of this project can be done by working together as a team. So, the Alaska LNG Project is much more than a pipeline. On a financial commitment level, a pipeline is about 25 percent of the cost of the project; the rest of the project cost is the plants - making the gas ready to move and making the gas liquid so it can be exported. That is what drives the ability of this project to be successful. It gives the economy of scale to move gas and connect with enough markets so that this kind of investment can be made and the cost driven down to where the gas can be delivered to buyers at a price less than other sellers' gas but still enough after cost to create a margin that generates a return for all the people to make the investment. With the state as an investor, [legislators] want to know that the state's resources are being used well.

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MR. BUTT addressed the second key message, explaining that the "ARC of Success" is shorthand for three ideas that can help answer almost any question about the project - alignment, risk reduction, and cost reduction. When asking questions about the project, he advised, think about how a buyer looks at the project and how an investor looks at a project in terms of alignment, risk, and cost. Alignment is about having the resource owners working together in an integrated team: the producers have a right to produce the gas that they purchased through leases, and the state is an owner as a derivative of those leases and has the right to receive revenues in the form of taxes and other elements of payment. So, the owners of the

gas are the State of Alaska on behalf of Alaskans through the constitution, plus the three companies that own the right to produce the gas from Prudhoe Bay and Point Thomson through the original leases. Those four entities have about 98 percent of the known resource between Prudhoe Bay and Point Thomson. It creates an opportunity for alignment between those four entities that is very unique. It also creates a business model that is very unique because when thinking about all the other really large projects in the world, and in the U.S. in particular, nowhere is the state an owner of a project to develop resources like this and certainly not in this scale. That creates a lot of challenges and creates an environment where the owners need to work together in an aligned manner. The challenge comes if there is any unilateral objective with one owner out of sync with any of the other owners; anything that compromises alignment creates challenges for the project. All benchmarking of all megaprojects in the world always recognizes the alignment of the parties as the most critical factor of success. Any challenge can be overcome by working together. Regarding risk reduction, Mr. Butt pointed out that everything in Pre-FEED and FEED is about risk reduction - identifying and addressing the uncertainties and knowing today what might come up in 10 years and how to mitigate it now. If the project can work together to mitigate things now, it will be much more successful than if it is unexpected or a risk that cannot be controlled. Regarding cost reduction, he stressed that the most important element of a resource development project like this is cost. Because gas is a commodity nobody pays extra for it. People only want the utility value of the gas. People want the same standard of living as had in the U.S. Buyers are thinking generations down the line. If a buyer risks its economy, will it be at a low enough cost that its economy can grow? Everything in this project comes down to cost of supply and competitiveness. At least half the projects out there are not going to go forward, and the project's goal is do everything possible to make Alaska LNG be one of the projects that does go forward.

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MR. BUTT reported that much of the technical work [Pre-FEED] is expected to be completed by late 2015/early 2016. Many elements are outlined in Senate Bill 138, he said, such as issues that need to be defined around fiscal structures, royalty framework, property tax, and creating predictable durable environments. These are going to be important to the investors to move into those next stages.

MR. BUTT outlined the project's Pre-FEED work schedule [slide 3]. He said the schematic bar at the top the slide is the same one shared with legislators since 2012 about the gated project management approach, which all large projects use to reduce uncertainty as resources are increased. Concept selection work was completed in 2012, 2013, and early 2014, he reported. Over $100 million was spent on work to define how the system would be structured and built, of which about $28 million was reimbursed through the Alaska Gasline Inducement Act (AGIA). Many fundamental questions were answered, such as where to put the gas treatment plant, how to size the facility, where to put the LNG plant. The ability to move forward was evaluated in mid-2014. The question was whether enough was known about the concept to think it had a chance of being successful. In a gated process a gate is not gone through unless it is thought that all of the gates can be gone through and that the risks and uncertainty can be reduced enough to be successful. In June 2014 the project completed an agreement that enabled Pre-FEED. In the second half of 2014 about $80 million was spent on Pre-FEED work to develop more detail in the design. To move through Pre-FEED, the project will probably spend another $350-$400 million. Added together, over $500 million will have been spent for Concept and Pre-FEED. Front-end engineering and design (FEED) will cost between $1 billion and $3 billion, depending on how much equipment is purchased and the decisions made about timing. The transition between Pre-FEED and FEED is where the spend really escalates. For example, during Concept the project spent about $3-$4 million per month; now the project is spending about $25-$30 million per month in gross dollars shared by all the parties. In [FEED] that spending will jump to over $100 million per month, and all of that only gives the right to make a decision to build the project, called the final investment decision (FID). At the point of FID, spending will have been in excess of $2 billion and that only gives the right to spend another $45-$65 billion and then hope this project can be successfully operated over the next 30 years.

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MR. BUTT stressed that each gate is really important. Before moving through the gates it needs to be known that there is enough confidence and enough capability to reduce the risks to merit the resources. Key risks that the project needs to move through for Pre-FEED are in the regulatory department. It must be known that the project has the right to export this gas, that it will be getting an FTA permit as well as a non-FTA permit. After the first and second draft Resource Reports are provided,

there needs to be a lot of confidence in working with FERC that the project is going to be able to successfully secure an environmental impact statement and subsequent construction permits. It must also be known that commercial issues and fiscal issues are resolved because at that juncture all parties will have the opportunity to increase their spend by a factor of three to four times. Thus, moving from Pre-FEED to FEED is a very important gate.

MR. BUTT described what happens in [Pre-FEED], noting slide 3 depicts a timeline from 2014 through 2016 and the dotted line extending downward from the end of January 2015 indicates where the project is at the moment. Since 2014 the project has completed building its teams, getting the engineering work done, and starting many of the engineering deliverables. Those things help in deciding the size of the machines for the compression work. Between 9 and 16 machines will be needed. They will be larger than anything in the utility industry in Alaska and will be some of the largest machines in the world. It is years of work to build these machines. The 1.2 million tons of steel pipe will also require years of manufacturing capability from mills. It must be ensured that all of this work can be done. Delivery of these work products is estimated for fourth quarter [2015], at which point the Optimization Phase will be entered to make sure all the pieces fit. At this point there will also be Owner Reviews to ensure that everybody is understanding how this all works together. He emphasized that when referring to Owner Reviews he is referring to the state as an owner.

MR. BUTT explained that the needed regulatory work is shown in orange on slide 3. The first draft Resource Reports will be submitted eminently, the second drafts follow about a year later, and then the "thirteenth report" - the design details of the LNG plant - will be submitted, leading up until the FERC application is done. Summer field work to gather the regulatory data is done when the weather allows. Work is constantly being done with the contracting community to get the right people to help do the work. All of this allows the decision to be made on FEED and how it would work. The FEED evaluation would begin in the middle of 2016 and continue [until the end of 2016]. It is really important to not move from the Pre-FEED period across the gate into FEED until everybody is ready and has the confidence that uncertainty has been reduced enough to add the additional resources and take on the additional cost.

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REPRESENTATIVE HAWKER inquired whether the actual progress in achieving these goals and benchmarks to reach the FEED decision is on schedule as anticipated.

MR. BUTT replied that different elements of the risk are in different places of maturity. The technical work, the design work that helps define cost and schedule in order to ask whether this project is technically feasible and commercially viable, is going extremely well. The commercial issues are challenging. The regulatory issues are challenging and are not in the control of anyone in this room. However, he emphasized, the federal government and the state regulatory agencies have been excellent to work with. The project has been able to get things done better and faster than anyone expected. Some of the more challenging issues are those outlined in the Heads of Agreement that was signed in January [2014] and enshrined in Senate Bill 138. Those issues are under the responsibility of the project, the legislature, and the administration, and are about how to make some of those really complex issues work. The new folks in the administration, the Department of Natural Resources, and the Department of Revenue have been impressive. He said he is very optimistic and feels everyone is working towards the right goal.

REPRESENTATIVE HAWKER clarified he was not asking about speculating forward, but whether the work done to date is on schedule as work is being done to resolve the issues.

MR. BUTT responded that as of January 30, [2015], all of the milestones laid out in the joint-venture agreement of June 30, 2014, have been reached. The Resource Reports were submitted on time, the FTA approval was received, approval of the non-FTA is anticipated, all the contracts were let, and all the design work initiated exactly on schedule. Other issues need work by the legislature through the regular legislative session. He said he does not think any of the parties, including the state, are ready to progress any of the more complex commercial issues with any sort of different environment. Whether the schedule will be on time at the end of the next six months, he does not know.

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REPRESENTATIVE TARR understood that if things progress there will be a special session in October 2015. She asked whether those things are joint-venture agreement (JVA) work products.

MR. BUTT answered that this is the work the project team is doing. Some of the owner interface issues with the legislature

are not depicted on [slide 3] and he cannot presume to say when or if there will be any sessions that are outside the project's control, just like he cannot presume to say when or if the project will get any of the regulatory permits. The things that are within [the project's] control are going extremely well. Ways need to be found to work together as owners to get some of these other issues done and he is optimistic that everybody has the will to get it done. In any large project, he added, the most important thing is alignment in the will of the parties and all the parties share a desire to see this happen.

REPRESENTATIVE HAWKER, in regard to moving forward with the commercial and regulatory issues, inquired whether Mr. Butt was speaking on behalf of the owners' work or the project work.

MR. BUTT replied he thinks he can share information from both, but that he is not speaking on behalf of the owners today. However, he said, through the sponsors groups the owners have been very clear - they want to get these issues resolved and want to work together to make it happen. When and how that gets done is still uncertain because tomorrow is always uncertain and nobody ever really knows what tomorrow holds. But, looking at the last six months, all of the milestones have been hit.

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MR. BUTT turned to slide 4, explaining that the project is anchored by the Prudhoe Bay and Point Thomson units, which are world class resources at about 35 trillion cubic feet of gas. The work is managed by the unit operators, but because the project is under Section 3 and is an integrated team, [Prudhoe and Point Thomson] can work together to make sure the design is very efficient and that is really important. He drew attention to the bottom left schematic on slide 4 depicting the design work on how the project would be integrated to the central gas facility. Much work has been done on how to manage carbon dioxide, he said, and work continues on refining and optimizing the carbon dioxide spec and the handling. The two assets are being treated together, which is important because it presumes that Prudhoe Bay will continue to be healthy and the project can continue to rely on those compression facilities and those wells to source the gas. It is a great advantage but also an important risk. The Point Thomson operator has also continued to make tremendous progress. The upper right photo on slide 4 is of the Point Thomson initial production system and was taken in September 2014. All of the milestones at Point Thomson have been met. Drawing attention to the lower right schematic on

slide 4, he said the design work of sizing and module layout is done for how the gas management and the gas expansion systems would be managed in the event of an Alaska LNG Project allowing for the export of gas from Point Thomson.

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REPRESENTATIVE HAWKER said the entire Point Thomson development is underpinned by a settlement agreement of several years ago between the state and the owner/operator, but that agreement is being challenged in the Alaska court system. He asked how much risk this lawsuit is to the continued expeditious, on-time, on-budget development of the project. He expressed his concern over the prospect of the settlement agreement being determined invalid given the money spent so far.

MR. BUTT responded that he can give the committee some data but not all, and he will not presume to speak on behalf of the operator. He explained that the operator works on behalf of the owners, the operator is the one that speaks but the owners pay the bills. In excess of $2 billion has been spent and total spend will be close to $4 billion to generate about 10,000 barrels a day of condensate production from a gas cycling project. The pipeline is built, everything is ready. He said the person managing that project is a good friend of his and he is confident she will hit all of her deliverables and meet all of the settlement requirements. Regarding how it would impact this project, he spoke from his role of project manager, stating that any uncertainty in how the gas source comes into the project will adversely impact the project. Any risk, any uncertainty, adversely impacts the project. That will always pivot back to alignment, risk, and cost. Anything that creates a risk on the source adversely impacts the project and compromises the project's ability to move through the gates. He said his understanding of the litigation is limited, but none of the people involved in [the project] are actually parties to that litigation and he is confident it will get worked. He added that he is not comfortable talking about litigation.

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MR. BUTT moved to slide 5, stating that Prudhoe Bay and Point Thomson provide the gas to the gas treatment plant. At 250,000 tons of steel the gas treatment plant is enormous. Each of the plant's three trains is large enough to fill the Super Bowl stadium. Each train will be broken into pieces called modules, and each module will be moved to the North Slope one at a time.

It is thought that how to design the gas treatment plant with three trains has been figured out. Three trains is important because it allows balancing of the facility with the liquefaction facility that has three trains. Train is an industry phrase that means a processing kit - everything happens in sequence. It allows each of the sections, or trains, to be balanced so the system can be kept in balance when working on the treatment or liquefaction plants. He said he calls it "three, three, and three" - three treating trains, a pipeline that handles about 3.3 billion cubic feet a day, and three liquefaction trains. In the event there is an opportunity to expand, it is designed such that there is some headroom in the pipeline and the trains can be added and everything kept in balance. The carbon dioxide has been finalized with the Prudhoe people and that integration cannot be stressed enough. It is a unique element of this project and is one of the most important opportunities the project has to be successful because everyone can work together. All the resource owners are together and all the companies are working without barriers in a way that was not possible before.

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MR. BUTT played an interactive video system depicting the gas treatment plant and its trains. He explained that huge amounts of data are involved that allow the team to design all the different process flows. As wedges are cut away in the video, each color that is seen represents a process flow stream, such as hot gas, some kind of treated gas, an amine cycle, or some other element. This model is used to ensure the design is efficient from a hydraulic perspective, meaning as little pipe as possible, and from a thermal perspective, meaning when things are made hot or made cold it can be balanced. Narrating the video, he noted the plant covers a couple hundred acres and has camps and infrastructure facilities so it can be operated independently; however, work is being done with the Prudhoe Bay operator to see if there are opportunities to integrate and share some costs. The tower depicted in the middle is a process vessel that is about 130 feet tall and 28 feet wide. The door seen in the video is eight feet. He explained that the video is a tool that allows operating the plant in a virtual space to test it. The steel is 12-14 inches thick and must be rolled and must be moved in one piece, making it big and heavy. The reason it is so big and so heavy is that Prudhoe Bay has 11 percent carbon dioxide. No other LNG projects in the world handle that much carbon dioxide. While great for soft drinks, carbon dioxide is not great for LNG because it freezes and causes

problems. The carbon dioxide must be taken out of the gas and put back into the ground and that is what the gas treatment plant is allowing to be done.

1:49:11 PM

MR. BUTT then played an interactive video system that allows mapping of the entire project from the pipeline to the plants. He explained that this data system does interactive three-dimensional (3D) flybys, so any point in the system can be looked at from any angle. It is done through stereoscopic cameras. The detailed analysis was completed over the last two years. He pointed out where the gas treatment plant (GTP) would sit at Prudhoe Bay, and said the pipeline on the right goes to Point Thomson and the pipeline on the bottom is the main trunk line going to the Cook Inlet. Continuing to narrate the video, he said the gas treatment plant would be located in the flat spot where there is no water and the terrain can be analyzed anywhere on the route in 3D real time. This data system provides a deep understanding of how to build the project and is done in Pre-FEED to ensure that as the system is designed and as the resources and the cost are increased, there is an understanding of where the project will be built. It will also be known where to get the gravel and the water, and how it will be managed.

1:51:06 PM

MR. BUTT turned to slide 6 and emphasized that the pipeline is not one piece of pipe and it is not just a matter of digging a trench and putting in a pipe; rather, the pipeline is actually four design pieces. Drawing attention to the route depicted in the top right of slide 6, he explained that the portion of pipeline between Point Thomson and Prudhoe Bay (depicted in green) is an above ground conventional pipeline. The span from Prudhoe Bay to the top of Atigun Pass (depicted in purple) is also conventional, but is a much heavier pipeline because this span is continuous permafrost. From Atigun Pass to the top of the Alaska Range [depicted in red] is discontinuous permafrost from hot summers and very, very cold winters. With temperature swings of 150 degrees, this ground is always moving with the freezing and thawing. When designing pipelines, everything possible is done to ensure the pipe never moves, so very specialized pipe must be used in this center section. From the back side of the Alaska Range before going into Cook Inlet, [depicted in purple] is another section of conventional pipe. After that is an offshore subsea pipe [depicted in blue]. The

building of four different types of pipe across five different regimes will require 1.2 million tons of steel. However, there are no mills anywhere that can create that. The project team has therefore engaged 12 mills in North America, 2 in Canada and 10 in the U.S., and about 12 mills in Asia to see which mills can make this pipe.

1:53:16 PM

MR. BUTT drew attention to the schematics across the bottom half of slide 6, with the helical method of manufacturing pipe depicted on the left and the linear weld method on the right. Using a piece of paper to demonstrate the [linear] weld process, he explained that a flat piece of metal is bent into a U-shape and welded longitudinally. While very strong, this type of pipe is hard to make - this method allows for having a much heavier-walled pipe, but the longitudinal weld must be stronger than the pipe. Using a cardboard tube from a roll of paper towels to demonstrate the helical manufacturing process, he explained that a flat piece of steel is rolled into a tube rather than bent into a U. While the helical method is easier and cheaper to build, it is not nearly as strong. Additionally, the weld area as a dimension of the total length of the pipe is much greater, creating other challenges. The different mills and different ways to make pipe are being looked at to see which mill can supply enough pipe, he said. About $2.5 million-worth of pipe has been ordered, which is the cost of the pipe with no markup because the mills are trying to work with the project. Two different grades of pipe - X70 and X80 - are being tested for how to do the welding, how it would be sourced, and what fits in these different environments. Leading the look at this really complex structure is the project's pipeline team, a fully integrated team under TransCanada leadership. While the focus is on a 42-inch system, bigger systems are still being tested and whether those bigger systems impact availability is being looked at. There are no mills in North America that can make pipe bigger than 42 inches and only a couple of mills in North America can handle 42 inches. It is really difficult to get this pipe because it is so large and so heavy. All the steel and all the plate must be imported and then milled. Additionally, the pipeline team is reviewing geotechnical data and working with the regulators on how to get it permitted.

1:56:08 PM

REPRESENTATIVE TARR inquired whether there is any tax advantage to selecting a U.S. manufacturer over a non-U.S. manufacturer.

MR. BUTT replied no, the cost angle is who can source the plate steel, which is the big expense, and then fabricate it, which is the bending or the turning. The desire is to source as close [to Alaska] as possible because that limits transportation cost. Cost, he added, is something that must be mentioned frequently.

1:56:56 PM

MR. BUTT turned to slide 7, stating the pipeline team continues to have really good cooperation with its partners at the Alaska Gasline Development Corporation (AGDC). There are cooperation agreements with AGDC and AGDC has subject-matter experts. All the historical data from all the different incarnations of pipeline projects has been shared and put into one pot to determine how to make the best pipeline from north to south. The route has been harmonized so that everyone is looking at the same route, which is really helpful because it allows gathering of the needed environmental data. This information gathering includes geotechnical mapping, environmental data, and fault studies. Fault studies are extremely important because it must be ensured that if the ground moves the pipe does not. Staying as close as possible to infrastructure is also wanted, which is why the phrase "on and off" right-of-way infrastructure is used. For example, the project stays as close to roads as it can. The first 400 miles of the pipeline parallel the Trans-Alaska Pipeline System (TAPS); at 200 feet away it is not technically in the TAPS right-of-way, but the road can be used. Staying with existing infrastructure minimizes the environmental impact and minimizes the cost, both of which are paramount.

MR. BUTT played a sample video of the pipeline route from the interactive mapping system. Narrating, he said the system allows the flying of any section of the pipeline, looking right or looking left, and managing any element of the pipeline right-of-way in real time for the full 800 miles.

1:59:26 PM

MR. BUTT discussed the LNG plant (slide 8), pointing out that it is enormous. He said the export authorization request is for about 20 million tons per year for a 30-year period, meaning 2.4 billion cubic feet of gas a day would be exported. That is 10 times the amount of gas the state of Alaska uses on average, and one-third the amount of gas a highly industrialized country like Germany, Canada, or the United Kingdom uses. So, one-third of Germany's needs could be supplied from this plant. Therefore,

the LNG plant has geo-political aspects to it and has huge economy-of-scale elements to it. The plant would have three modularized six-million-ton trains. While there are bigger trains and smaller trains, these trains are the most proven because there is the most of them. So, it is the selection of a technology that is used in about 90 percent of the world's LNG's manufacture. Selection of this most common technology and most fundamental size was done to minimize risk because there is an understanding from other places as to how it is built and run and this leverages the experiences of all the parties. The project's pipeline manager has decades of experience, the LNG plant manager has built LNG plants all over the world, and his engineering manager has personally been involved with 70 million tons of LNG - the whole world only has 250 million tons. So, someone on the project's team has worked on every operating LNG plant and one of the project's team members has worked on one-third of all LNG in operation. To date, the process layout and process design have been finished and are being translated into the models the committee saw earlier for the gas treatment plant. The models enable it to be really refined and ensured that they are hydraulically and thermally efficient. All an LNG plant does is make gas cold. The gas arrives at about 30 degrees Fahrenheit and goes out at minus 260 degrees Fahrenheit. It is not under pressure, is odorless and colorless, and looks like water in a glass.

2:02:09 PM

MR. BUTT said Nikiski was selected for the LNG plant site because the focus was on which site would have the lowest risk and the lowest cost. Nikiski provides that because it has a large flat area that limits the amount of needed civil work. Civil work is very expensive and very environmentally difficult to permit. Some of the sites looked at needed to have 35,000-50,000 cubic meters of rock moved, which is very difficult to permit because such a large amount of area is impacted. The Nikiski site is also near existing infrastructure, which is very important for the moving in and out of workers and goods. Additionally, it must be ensured that the plant can be operated over a long time. The snow loads at Nikiski are lower than in other parts of Alaska which have very high snow loads that make it difficult to operate an LNG plant. Drawing attention to the photograph of the proposed LNG plant site on the bottom right of slide 8, he said that this picture is in the Resource Report, so will be moving into the public domain. The site sits just to the south of the Tesoro refinery. Hard work has been done to create fair and durable arrangements with the landowners for the

purchase of their land. The folks in the Nikiski industrial area and the broader Kenai Peninsula communities of Kenai and Soldotna have been very welcoming, he reported. He has great relations with the majors of the borough and the city and the leadership in the area. The team thinks it is on the right path here and that it is a good environment for success.

MR. BUTT noted that confidentiality is important in the process of buying land. While people want to know what is being paid for land, the folks selling land do not want that information in the public domain, which must be respected. Confidentiality is an element that helps the project be competitive and respects private information. It is also a parallel to the elements of contracting. For example, he related, at a meeting with a group of contractors there was discussion about how to satisfy the need to be as transparent as possible. One contractor said everybody's bid should be in the public domain except his, which characterizes the challenge. Whether it is land or contracting, the project is trying to create that transparent environment without compromising competitiveness or private information.

2:05:08 PM

REPRESENTATIVE TARR asked whether the LNG plant site is mostly privately owned or owned by the borough.

MR. BUTT responded that most is owned by private individuals, but some sections are owned by the borough.

REPRESENTATIVE TARR inquired whether the sales are cooperative.

MR. BUTT answered that the guidelines say it must be fair and durable, it has to work for everybody. There has been a lot of very positive feedback, he reported, although not every single parcel has been worked out yet. It must work for all the members of the community because the project is going to be there a long time. The project's guideline is to be a good neighbor and a good member of the community.

REPRESENTATIVE TARR inquired whether any of the land sales involve provisions that allow individual use of gas or access to the gas.

MR. BUTT replied they are purchases with no other elements because it must be fair and durable and anything that gets too unusual is probably not going to be durable. It must therefore be kept really clean.

REPRESENTATIVE OLSON related that his district is right next to the Alaska LNG Project plant site and many of his constituents work in the Nikiski area. Oftentimes he gets calls that should have gone to Representative Chenault, he said, and there have been very few phone calls where people have been unhappy with the way land sales have been handled. He complimented the project on this.

MR. BUTT thanked Representative Olson and said the land team was given a very clear mandate to be fair and durable on both sides.

2:07:47 PM

MR. BUTT played an interactive video of the LNG plant site in real time 3D. Narrating, he explained that at the left edge is the boundary of the Tesoro refinery and to the south [is the LNG plant site] that is largely trees and open space with some spotted infrastructure and developments, making it a good fit for an LNG plant. In thinking about other areas in Alaska, it is hard to find a big flat space and a flat space is a lot more conducive to an LNG plant than anything else. That said, there are a couple of other places that would work well for siting the plant. The project is trying to work out the land issues with all the owners and is doing geotechnical work to ensure that this is a good place to put the plant. Samples are being drilled down to about 150 feet to determine whether it is soil, clay, or sand because the plant will weigh about 200,000 tons and there is vibration from the big compressors and motors that are in motion. It must be ensured that when things move the ground doesn't. It must also be ensured that the foundations can be designed properly and the plant will fit on the site.

MR. BUTT played a video of the Denali Drilling Company gathering samples for the project. Narrating, he said about 30 holes have been cut so far, and another 150 holes will be cut over the next year and a half. He noted that the video is stock footage from Channel 11. Thanking Channel 11, he quipped that borrowing the video is an example of cost savings.

2:10:19 PM

MR. BUTT played another video borrowed from Channel 11 of the tools being used in the Cook Inlet. Narrating, he explained that the video is of a two-dimensional (2D) seismic tool and a sonar tool off the bottom of the boat, which are used to get detailed maps of the bottom of the Cook Inlet. This information

is needed because a jetty must be placed and it needs to be positioned safely. The data is captured by the aforementioned tools and then integrated to come up with very detailed images of the sea floor. Data is also being gathered on currents and tides and what the water looks like.

MR. BUTT moved to slide 9, noting that all of the aforementioned data gathering is part of the broader regulatory permitting process, which is done to understand the risks. Summer field work is critical because this is the information used to put into the Resource Reports, which is what gets the environmental impact statement that gets the permit to construct. These early steps really matter. A couple hundred archeologists dug holes spaced about 3-5 meters apart all along the pipeline right-of-way. About 10,000 acres was covered last summer and another 15,000-16,000 acres remains to be done over the next year and a half. The archeologists are looking for any sort of cultural history or artifacts of cultural heritage. Anything found is reported to the state Office of History & Archaeology, not the project, and the archeologists will work with the state office to ensure those artifacts are protected.

2:12:31 PM

REPRESENTATIVE JOSEPHSON asked whether State of Alaska funds, appropriated under Senate Bill 138, are being used for the aforementioned work by contracting parties.

MR. BUTT responded that the "family tree" shown in the lower left of slide 9 is only for the summer field work, and all the other elements of the project also have family trees. He confirmed that state monies are used for this work. The state has 25 percent equity through its agents, AGDC for the LNG plant, and TransCanada for the midstream which is the pipeline and the gas treatment plant. The contractors gathering summer field data for the pipeline are billed back through TransCanada who is actually paying for that portion to cover the state's 25 percent. The folks doing the archeological work, field work, site work, and geotechnical work in the [LNG] plant area are paid through AGDC.

2:14:00 PM

MR. BUTT returned to his discussion of slide 9, pointing out that lots of civil surveys are being done because it must be known where everything is. Lots of stream and waterway work is being done to ensure waterways are not damaged. Of the 250

people doing field work last year about 80 percent were Alaskans; they walked 10,000 acres and drove 200,000 miles.

MR. BUTT moved to slides 10-11, saying it is key to understand the environment so it is not adversely impacted. All of this feeds the export application and the Resource Reports to get the permits for the project. It is important because there are a lot of regulators out there. The project has had meetings with state and federal regulators and slide 10 is a graphic showing the number of different folks that the project works with. Representatives from interagency working groups come together to look at the different permitting elements. However, FERC actually leads the National Environmental Policy Act of 1969 (NEPA) which defines the permitting process and FERC is the umbrella to plug all of these in. In addition to FERC, the federal government has formed the Interagency Working Group that is led through the Department of Interior through its auspices at the Bureau of Land Management (BLM). That group calls meetings where all those regulators come together from the 30-50 regulatory groups to talk about the project, the permitting, and the data gathering to create these Resource Reports. Mr. Butt brought attention to the 13 Resource Reports listed at the top right of slide 11. He reported that Resource Report 1 [Project Description] and Resource Report 10 [Alternatives] are done and have been submitted. Resource Reports 2-9, 11, and 12 will be submitted eminently. All of these reports are required to get the environmental impact statement. Resource Report 13 [LNG Plant Information] will follow in about a year.

2:16:20 PM

MR. BUTT, responding to Representative Hawker, explained that the page numbers for his presentation differ from the slide numbers in the committee packets due to the videos contained in his presentation.

REPRESENTATIVE TARR asked whether the field teams have gotten as far south as the LNG plant.

MR. BUTT answered that most of the archeological work is still up in the north Healy/Talkeetna area, while much of the geophysical and geotechnical work is all the way down to the LNG plant. The whole route must be done, but it is done in sections based on the availability of the resource and the weather and to prevent conflicts. For example, the archeological data cannot be gathered while a hole is being drilled. The archeological data is gotten first and then the holes are drilled.

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MR. BUTT said FERC is involved now and it is very important to get the environmental impact statement to have FERC lead the process. Once the first drafts are submitted, FERC will take over and will begin a lot of community engagement. The project will continue to have public sessions. For example, two weeks ago the project held a public session with FERC in Kaktovik. The project is holding sessions throughout Alaska, but along the pipeline route it is meeting with all the communities and will continue to do that. To date, the project has had about 65 open house sessions, 14 of them with FERC, and will hold about that many more as the project goes forward. How the project is going to impact a community and whether people support it is an important element in the project's design.

MR. BUTT pointed out that the picture on the left in slide 11 is of a geotechnical boring tool and the picture on the right is a geotechnical trench for assessing a fault. Anywhere a fault is suspected, he explained, a trench is dug to gather data to see how it is moving. In the event a pipe was put there, it would be understood how the ground might move so the pipe can be designed to not move.

2:19:21 PM

MR. BUTT played a video depicting how the summer field work is gathered. Narrating, he said the crews start with a job safety briefing, then go into the field sites, and then they walk a lot. In waterway suitability work the crew walks to find places to capture fish using mild electrical current to stun the fish. The fish is captured, categorized, and then released. This is done on every waterway, every stream, every crossing and the depth, width, and water quality are measured. This is done because the project must demonstrate what the environment was like before the project got there. Archeological crews dig holes spaced three meters apart and three meters down. Anywhere it is thought there is a site, an archeologist defines those sites, such as overlooks for game.

MR. BUTT then played a video of the project's community engagement sessions, saying the project is endeavoring to be transparent in its process. People can come to the open houses and ask any question they want.

2:21:42 PM

MR. BUTT turned to slide 12, addressing what is ahead to get into FEED. He pointed out that there are many opportunities to engage. Because Alaska is an equity participant it is very important to get an owner's mindset. Owners must work to make a business successful. Alaskans, as equity participants and owners of the project, have the same rights and obligations as everybody else through the 25 percent participating equity defined in Senate Bill 138. How the project engages in that is really important. The project has asked all the businesses to register on its web site and about 100 local businesses have registered. The project will have those businesses work with the other elements of the project to look for ways to match up global LNG experience with local Alaskan knowledge. The project wants people to attend the community meetings to talk to FERC about any concerns they may have so ways can be found to resolve those concerns early. It is also important to continue this legislative engagement process. The project is happy to have additional sessions to talk about any other information that the legislature wants. Legislators are welcome to call. Kim Fox is the project's external affairs manager. All of that engagement leads to the 2016 decision point where it really needs to be understood whether to move from Pre-FEED to FEED. The Pre-FEED work will define the design and confirm the site and the route. That work is on track and, he said, he has every confidence that it will get done. It needs to be confirmed that the cost and schedule is competitive - whether gas can be delivered at a low enough cost to compete in a global market. Mr. Butt stressed it cannot be emphasized enough how competitive this business is. It is guaranteed that at least half of the molecules that people are trying to figure out how to send to market will not have a home, the Alaska LNG Project wants to be the half that does.

2:24:20 PM

MR. BUTT said the project wants to work with the state to define the off-takes to provide gas to Alaskans. The project is happy to support different models on where to locate the off-takes. One will probably be the Minto/Fairbanks area and one will probably be the Wasilla area into the back of the existing grid for Anchorage. The project would like to help decide where to place the others. Knowing the off-take locations allows for proper design of the facilities to meet that need. The earlier that the project has that information, the better it can size the compression stations and decide their locations.

MR. BUTT noted the project needs help on the very important key commercial agreements - how the gas balance works between the reservoirs, how the governance going forward gets done. The state has a lot of energy around expansion rights and third party access. Through a collaborative solution-oriented manner, ways can be found to get each party what it really, really needs. While it may not be what a party wants, ways can be found for what a party really, really needs. The project needs help developing durable and predictable fiscal terms as defined in the Heads of Agreement and Senate Bill 138. While that is not really within the project's domain, the project can help provide information, listen to enalytica, and support any third-party consultants that the state may use. Black & Veatch's Alaska North Slope Royalty Gas Study is an excellent document. Last year's seminars on LNG provided a tremendous amount of information, but the project is going to need help to move all that forward. The only way this is going to work is if all the parties are kept aligned. The four parties - the state on behalf of Alaskans, BP, ConocoPhillips, and ExxonMobil - have about 98 percent of the gas on the North Slope. The parties have an opportunity to work in an integrated manner that has never happened before. The parties have an opportunity to create a system that has never been built before and the parties are at a point in the process that has never been reached before. He concluded by saying that if the parties can build on that alignment, the parties can be really successful.

2:26:42 PM

REPRESENTATIVE HAWKER observed on slide 12 the bullet stating, "Continue building alignment between all parties" and the bullet stating, "Legislative engagement - need help to align on forward plan to reduce project risk and 'cost of supply'". He inquired as to what is the specific ask underlying the second statement.

MR. BUTT replied that for legislative engagement he will not presume to make a specific ask on behalf of the project. But, he continued, he will say that "on behalf of the project, we have a framework to get all the work done that we need to get done to support the elements of a Pre-FEED decision. What we need help with is to align on how do you want to address some of these other issues - commercial agreements, fiscal agreements." He said he doesn't think there will be consensus across all the owner parties to move from Pre-FEED to FEED and increase the spend from roughly $25-$30 million per month for a total spend on the order of $450 million to probably three times that, $100 million per month, without a higher level of certainty.

Certainty is an objective that "allows us to have confidence that when we put up that money that we are going to be able to work together and actually build the project because between Pre-FEED and FEED is … a step change of commitment." It will need to be known what the property tax structure, the royalty framework, and the fiscal durability looks like. Using the analogy of building a house, Pre-FEED is the concept level of deciding where to put the house, what it looks like, how big it is. But that house won't be built until it is understood over the 30 years whether the mortgage is going to change every month, what the mortgage rate is, whether the taxes will change every month, whether the house is in the right school district, or the right place. Those are the kind of questions the project needs to understand. Like a house, this is a plant that will need to be run and successfully operated for 30 years or more. An LNG plant like this could run 50-60 years because it is designed for that capability. The permit is for 30 years, but LNG plants in cold dry environments can run decades and they are built with that in mind. The legislature's help is needed to answer some of those questions that are outside the project's control. He suggested holding some of the owner sessions referenced earlier by Representative Hawker and have some of those dialogs about what it is going to look like to get to a level of fiscal and commercial certainty that is going to help all the parties, including the state, feel good about escalating from Pre-FEED to FEED.

2:30:02 PM

REPRESENTATIVE HAWKER stated that if help is needed, then the project is asking the legislature for something, but the legislature can't help if the project doesn't ask for something. He said he did hear a clear statement about the need for resolving fiscal terms and economic stability for the project on a long-term durable basis. Earlier he heard Mr. Butt talking about difficulty with commercial agreements and he sensed that Mr. Butt was asking the legislature to arbitrate disagreements amongst the commercial parties. [Slide 2] of the presentation was about how well-aligned the resource owners are and working as an integrated team. He asked whether a functional, working, integrated team is really had and whether there are some serious disagreements within the project plan that the legislature should be aware of.

MR. BUTT replied that is why he is trying to differentiate it. The team is functioning very well. There are owner issues where there are differences of opinion, but within the project

structure [the team's] job is to find out how to make this thing work at the lowest cost possible. But there are differences of opinion across the different owners, including the state. But, he said, he would like to clearly be on record stating that he is not asking the legislature to engage to arbitrate that. The mechanisms are in place to work through all that in a timely manner. A project this big and complex with people from all these different places will not have everybody agree. He related one of his favorite sayings - that if he puts 10 people in a room and asks a question to which he receives the same answer 10 times, then he has 9 too many people in that room. It is very natural for there to be differences of opinion, he continued. These are folks with decades of experience on all elements of this project and they have different views. That is a very good thing, not a bad thing. It helps in making really good decisions and helps in having confidence that when a decision is made it has been tested from every angle and facet. On behalf of the project he is not asking for any help arbitrating that - it will all get worked out. From within both his roles, the teams are working really well. Do they agree on everything? No. And, he stressed, he does not want them to agree on everything, he wants them to get to the right answer, he wants them to get to a competitive project with the lowest cost of supply in a framework that has aligned owners. That takes time. One thing that makes this project unique is having the state as a partner, there are no other places where that is done. "We have a democratic process in a business decision making process here," he said. "Democracy is messy. We shouldn't expect it to be a simple autocracy. We don't want a simple autocracy. Autocrats rarely are very successful for very long for a reason. So, I think we are fine there." However, places where the legislature's help is needed are probably to the question of how to help implement the road map under Senate Bill 138. He offered to facilitate bringing the right owners' representatives before the committee or other group to talk about what that looks like because that is a place where the legislature has a unique role and nobody else can help.

2:33:43 PM

REPRESENTATIVE HAWKER said Mr. Butt answered his question by stating that help is needed with the fiscal terms, stability, and working out those long-term fiscal arrangements.

MR. BUTT said there are a lot of ways to help, but arbitrating on commercial issues is not one of them - building awareness, helping create an environment where there is transparency. The

new administration has made an excellent point, at some juncture the Alaskan public is going to be asked to support the legislature and support the administration in an enormous investment. It is going to take a lot of transparency, a lot of confidence, and a lot of people given there are over 600,000 stakeholders out there. While he does not think the project can get them all to agree, there will need to be enough confidence that if the state puts up its share of the project, which will be north of $12 billion. The state may use agents to reduce that frontend capital and it is the state's choice on how it chooses to do that. He said one of his roles is to help the owners understand the project and understand what it needs to move through the gates so that the project can be executed, and the state is an owner. Therefore he takes it very seriously to be before the committee to share the information.

2:35:05 PM

REPRESENTATIVE TARR noted today's low oil prices, saying it could be concerning if gas price is linked to oil price. While short term at the moment, she asked at what duration of time a low price would start to raise red flags.

MR. BUTT responded that, unfortunately, he does not have a great answer, but he can say that all the owners are ready to stay the course. While prices have been down for the last several months, this project's life is measured in decades. If prices stay down for decades it is probably one answer; if it is measured in months it is probably another answer. Over the next 12 months there is a tremendous amount of work and that work needs to be done well and the regulatory, commercial, and fiscal information feathered in to determine whether it makes sense to move to FEED. If prices move dramatically lower between now and then, it might get to one answer; if they stabilize and go the other direction, it might get to a different answer. The gated process allows the project to finish chunks of work so that [the owners] can determine whether it makes sense to escalate their resourcing. Do [the owners] want to triple the amount of money they are spending? Are they confident that if they do that and make the decision to spend the capital to build the project that it will generate enough margin to generate enough return to make that investment prudent?

2:36:57 PM

REPRESENTATIVE JOSEPHSON recalled that when Mr. Butt was interviewed by the press earlier this month it all sounded

optimistic and positive. However, two words heard today give him some pause - "consensus" and "disparate". He recalled Mr. Butt saying he was not confident yet that the partners had reached consensus and it sounded less than positive about moving forward. He inquired whether the differences are huge and whether some partners are ready to move forward while some are reluctant.

MR. BUTT answered that he does not mean to use words like disparate or consensus in a negative manner. He said he means to use them in a manner that there are different people who have different ideas. That is a natural process and everybody is trying to ensure that they are properly stewarding the resources of either their shareholders or their constituents and he respects that. It takes a while to get to that common ground and he is very optimistic that that common ground is there if the work is done in a solution-oriented manner and alignment preserved. Everybody has a shared resource and if there is an integrated shared structure to connect that resource to the market, we all have an opportunity to benefit. Does that merit the investment? Or are there different views around that? That is the question for the owners that he wouldn't presume to answer. But, he added, he is optimistic and optimistic would be the headline.

2:38:47 PM

ADJOURNMENT

There being no further business before the committee, the House Resources Standing Committee meeting was adjourned at 2:39 p.m.