ALASKA STATE LEGISLATURE
HOUSE RESOURCES STANDING COMMITTEE
January 28, 2015
1:00 p.m.

MEMBERS PRESENT

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

MEMBERS ABSENT

All members present

COMMITTEE CALENDAR

OVERVIEW(S):

Department of Natural Resources

- HEARD

Alaska LNG Project

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

MARK MYERS, Commissioner Designee
Department of Natural Resources (DNR)
Anchorage, Alaska
POSITION STATEMENT: Provided a PowerPoint overview of the Department of Natural Resources.

NIKOS TSAFOS, Partner, enalytica
Consultant to Legislative Budget and Audit Committee

Washington, DC
POSITION STATEMENT: In consort with Mr. Mayer, provided a PowerPoint overview and update of the Alaska Liquefied Natural Gas (LNG) Project.

JANAK MAYER, Partner, enalytica
Consultant to Legislative Budget and Audit Committee
Washington, DC
POSITION STATEMENT: In consort with Mr. Tsafos, provided a PowerPoint overview and update of the Alaska Liquefied Natural Gas (LNG) Project.

ACTION NARRATIVE

1:00:46 PM

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

OVERVIEW(S):

Department of Natural Resources

1:01:54 PM

CO-CHAIR NAGEAK announced that the first order of business is an overview of the Department of Natural Resources.

1:02:29 PM

MARK MYERS, Commissioner Designee, Department of Natural Resources (DNR), began by noting he has been on the job as Commissioner Designee for 16 days, but is no stranger to DNR. Over the last 25 years he has worked in DNR in various functions, from petroleum geologist to director of the Division of Oil & Gas, state geologist, and working on the gasline projects. During his 32 years in Alaska he has also worked 10 years in the oil industry and then was the director of the U.S. Geological Survey (USGS) in Washington, DC, under the Bush Administration. He said his wide variety of experience with natural resource issues also includes a doctorate in geology from the University of Alaska Fairbanks (UAF) and spending four years as Vice Chancellor for Research at UAF.

COMMISSIONER MYERS outlined the organizational structure of DNR [slide 2], pointing out that the department is divided into two parts, each with a deputy commissioner, one being Ed Fogels and the other Marty Rutherford. The department has seven divisions and four major offices. The division directors are very experienced and present at today's hearing. He praised the directors for their advanced degrees and life experience in their areas of expertise, garnered in both public and private sectors. These experts run their divisions well and are great resources for legislative members.

1:05:01 PM

COMMISSIONER MYERS said DNR has a fundamental series of missions [slide 3]. First, DNR is the economic engine for Alaska with most of the development in Alaska occurring on state lands. Most of the state's revenue - petroleum revenue - comes off state lands that are managed by the Division of Oil & Gas. There are many more mining claims and active mines on state lands and on Mental Health Trust lands than there are on federal lands. A timber industry is active on state lands and public safety is provided through the forestry [division]. Agriculture lands are dominantly state lands. While management of fisheries is by the Alaska Department of Fish & Game, management of the land and waters is by DNR. The Department of Natural Resources is the equivalent of the Department of Interior for Alaska, but even more so since there is so little private land and therefore state land drives the economy. He addressed DNR's mission of public safety, saying one of the state's largest risks is natural disaster, such as earthquakes, tsunamis, volcanoes, floods, coastal erosion, and fire. The department has a leadership role in managing fire and for the other natural disasters DNR provides the scientific data and much of the warning capacity. Another mission is access, with DNR providing land sales so Alaskans can own a part of Alaska. Public recreation is also provided through management of state parks and public lands. A science agency, DNR is fundamentally data driven - it maps, understands, researches, and makes good management decisions based on sound science and good data. The department manages significant information technology resources in order to have scientific data bases that are useable at all scales. It helps adjudicate issues with the federal government through strong science and the Department of Law. Economic growth is the responsibility of DNR.

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COMMISSIONER MYERS displayed slide 4, saying he depicted a map of Alaska over the Lower 48 to show the scale and scope of the land that is managed by DNR, which is shown in blue. The sites managed by DNR are hundreds of miles apart and in some places thousands of miles apart. An incredibly diverse ecosystem base is managed by DNR - from high mountains to arid North Slope lands to temperate rainforests. The 100 million acres of surface lands and 60 million acres of submerged lands managed by DNR are an amazing portfolio of natural resources. Because many of those resources are poorly understood, DNR's assessment of them is really important. The state does not control federal lands, so an understanding of the state's future economy is driven by the state's ability to do what it can on state lands.

1:09:03 PM

COMMISSIONER MYERS turned to slide 5 to review the divisions and major programs within DNR. Regarding the Alaska Liquefied Natural Gas (LNG) Project, he explained that Senate Bill 138 authorized DNR to manage the state's royalty share of gas and to market that gas. Under this bill the state will take its taxes as gas, so up to 25 percent of the project will be managed by the state. The upstream, the marketing part, and ensuring the state is fiscally wise in its decisions is under the [Alaska Gasline Development Corporation] and is integrated between DNR and the Department of Revenue (DOR). The cost of the front-end engineering and design (FEED) phase is potentially $1 billion or more, so to do that the state must figure out how it will market its gas, how to deal with property tax by working with DOR, plus a series of other negotiations that must occur. In addition to this commercial function, DNR is the lead in coordinating permitting for the gasline and liquefaction plant. Thus, DNR is playing a key role in the Alaska LNG Project.

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COMMISSIONER MYERS discussed the Division of Agriculture [slide 6], noting that farming is a relatively underutilized resource and is critical to Alaskans. Food security relies on the state's ability to grow more food locally. Value-added is happening in Alaska, with peonies and other products. Although agriculture is not a big revenue generator, it is jobs for Alaskans. The Division of Agriculture provides land, assures that agricultural inspections are safe, deals with invasive species, and works to provide opportunities for farming for cash crops. Small-scale agriculture is becoming more important in

Alaska. The Plant Materials Center provides the key seeds for commercial development and is the official test site for seeds. The division's 2014 highlights [slide 7] include the addition of 84 new farms to the Alaska Grown Program, the quarantine of five invasive aquatic species, and the Farm to School Program which provides locally grown food to Alaskan schools.

1:12:11 PM

COMMISSIONER MYERS reviewed the Division of Forestry [slide 8], saying its number one mission is keeping Alaska safe and forest fire. Of the division's budget of $46 million, $39 million goes to fight fires. Alaska has lots of fires, with fire frequency growing as the climate is changing and lightning strikes occur. Many of Alaska's lands are drying and tundra fires on the North Slope are being seen. Year to year it varies, but overall the boreal forest is burning at record rates. In partnership with federal firefighting, the division prepares by strategically pre-positioning equipment and doing work upfront, allowing the work to be done cheaper. Firefighting is significant to rural economies, providing about [$6] million [in wages]. The firefighters trained by Alaska's Division of Forestry work throughout the US, with many of those firefighters coming from rural Alaska. The division manages 27.5 million acres of forested state land, which includes [three] state forests. Most forestry work in Alaska is now on state lands and state forests.

COMMISSIONER MYERS moved to slides 9-10, pointing out that local jobs are generated by the Division of Forestry, including wood pellets for biofuel and birch trees for the Great Alaska Bowl Company. Commercial lumber and timber provide the opportunity for increased value-added production. Roads and infrastructure built into state lands and state forests provide hunting and recreational use in addition to the primary use of forestry. Private contracting, including firefighting, is a huge economic engine for many people in Alaska; additionally firefighting protects structures. A highlight of 2014 was that 99.9 percent of fires were suppressed and most were kept small.

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COMMISSIONER MYERS explained that the Division of Geological & Geophysical Surveys [slide 11] collects, interprets, and manages geologic data for oil, gas, and mineral development. It is increasingly working on issues of public safety with respect to groundwater, slope stability, earthquake, permafrost, volcano, flooding, and other natural disasters. It provides information

for the public - publishing [an average] of 75 new technical reports and geologic maps, with more than 300,000 publications distributed. Thanks to the legislature, the division will be opening its new Geologic Materials Center [this] April 15. It costs billions of dollars to collect these materials, so the center is invaluable to new mineral explorers and new oil and gas explorers. Warehousing and making this data available to look at provides a real incentive for additional exploration; for example, he used the core facility heavily when he was an exploration geologist.

COMMISSIONER MYERS, regarding economic impacts of the Division of Geological & Geophysical Surveys [slide 12], stated that good information allows resource development to happen in a safe way. The discovery of only one oil field will pay for this survey many, many times. A 100 million barrel oil field on state lands will return to the state over $3.5 billion over the life of that field. Mineral assessments, unaffordable to the smaller miners, help identify new mineral prospects. The division is mapping Cook Inlet, looking at source rocks for potential new oil. This is usually done in cooperation with federal agencies, such as the USGS. The division is also conducting geochemical analysis for minerals and oil and gas, as well as geothermal assessments.

1:17:53 PM

COMMISSIONER MYERS said DNR's workhorse division is the Division of Mining, Land and Water [slide 13]. Whether for a small permit or for managing the overall surface estate of the 160 million acres, it is this division. It is responsible for the stewardship of state waters, making land conveyances to individuals and municipals, holding individual homestead land sales, handling rights-of-way issues, the permitting of mining projects, and [regulatory oversight] of dam safety and coal exploration. A big challenge in Alaska has been the backlog in permits. Due to additional funding from the legislature that backlog was reduced by 61 percent, which is over 1,600 permits. The division made its records electronic by scanning over a million documents into a content management system. The division also works with water reservations and has been pro-active with protecting state interests. For example, the state is beginning to assert its rights on the Arctic National Wildlife Refuge (ANWR) border. There is an opportunity for the state to gain additional acreage because the boundary of the refuge was defined on the Canning River, but [the division] thinks it was actually done on the Staines River. The division is surveying and searching the records to make a case to the

federal government. The division is ensuring that the federal government is honoring the federal legislation with respect to land management and water management issues.

1:19:36 PM

COMMISSIONER MYERS stated that the Division of Oil & Gas [slide 15] is "the economic engine in the economic engine" because 90 percent of the general unrestricted funds comes from oil and gas generated off of state lands. Management by this division occurs in a sequence of events: assessing of oil and gas prospects, providing leasing terms, doing a best interest finding, permitting of exploration wells, unitization, determining that the resources are being properly developed so oil is not left in the ground, and overseeing the dismantlement, removal, and restoration when the oil field is done.

COMMISSIONER MYERS said the economic impacts of this division are huge [slide 16] - $2.5 billion for fiscal year (FY) 2014. It is also the reason why Alaska has a permanent fund - 25 percent of the royalty goes into the permanent fund and for leases prior to 1979 it is 50 percent. Lease sales have provided over $200 million to the state since 1999, with $65 million provided in 2014. Opportunities for local energy include work in Nenana Basin and coalbed methane leases near Healy. The division provides a process for low-cost access for new exploration. Highlights in 2014 include the third biggest north Alaska lease sale in history, the issuing of 166 oil and gas leases, and collecting $20 million in royalty and net profit share lease (NPSL) audits.

1:21:50 PM

COMMISSIONER MYERS outlined the work of the Division of Parks & Outdoor Recreation [slide 17], noting that the division provides Alaskans with outdoor opportunities on state lands at very reasonable cost. Alaska has the largest park system in America. Run on a relatively modest budget, the division is being very creative in finding funding sources external to the general fund, such as merchandising and potential public-private partnerships. Volunteers are used extensively - the number of volunteers dwarfs the number of employees by 8 to 1. The logistics of managing remote sites that are far apart across the state and off the road system is quite challenging. Development of new parks like "Denali South" are new tourism opportunities for Alaska. Alaska's state parks draw a lot of people, but about 80 percent of the users are Alaskans. The division's

[award]-winning boating safety program keeps Alaskans safe. The Office of History and Archaeology manages historic trails and is critical to the permitting of any projects that go across land that may have archaeological significance. Division highlights in 2014 include upgrading roads, parking lots, and scenic trails. Rates were raised last year for the first time as a way to require less in general funds.

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COMMISSIONER MYERS stated that the Office of Project Management & Permitting (OPMP) is a success story [slide 19]. A major project takes hundreds of permits, he explained, and involves multiple agencies with differing opinions on what the criteria are. Often each agency might request a different version of one piece of data. So, OPMP coordinates the schedule, coordinates the agencies, makes it easy for the applicant to get its permits without lowering the standards, and adjudicates issues and conflict between agencies. This office has been very successful on mining projects and is crucial in the future to the large gasline projects. Less than $1 million from the general fund goes into this office because it is mostly funded by program receipts from the people choosing to use these services. Positive feedback indicates that OPMP is helping to accelerate and build confidence that people can come to Alaska and deal with the risk of all the state and federal permits that are required. Most large oil and gas developments will use this office [slide 20]. For FY 2015, there are signed memorandums of understanding for eight new [oil and gas] projects. A statewide wetlands compensatory mitigation program is a way to deal with issues like those potentially at Alpine in the National Petroleum Reserve-Alaska (NPR-A). Such a program will allow flexibility in development in wetlands but not sacrifice environmental quality because there can be a tradeoff of wetlands. The office was a cooperating agency with federal agencies on the [Greater] Mooses Tooth and Chukchi Sea, which protects the state's interests. In a recent meeting, he related, a senior ExxonMobil person praised OPMP for its help in getting permits for development of the Point Thomson field.

1:26:10 PM

COMMISSIONER MYERS discussed the State Pipeline Coordinator's Office [slide 21], explaining that it provides the rights-of-way for pipelines on state lands. This is for pre-construction, construction, operation and termination of contract, and common carrier pipelines, not in-field lines. For cost cutting in the

governor's budget this office will be rolled into the Division of Oil & Gas. The people doing the work will not be eliminated, only the management structure. Highlights of 2014 include the issuing of 51 field permits, 3 new pipeline rights-of-way, continuing the pre-application permitting efforts for the state's big gasline projects, and finalizing multiple amendments to the Trans-Alaska Pipeline System (TAPS) right-of-way.

COMMISSIONER MYERS reviewed the Division of Support Services [slide 23], saying that duplication is reduced by having a centralized administrative services office. This division provides human resource services and, increasingly, information technology support as there has been centralizing of information technology, records keeping, and digitalization of records. The Information Resource Management (IRM) system, run by this division, is critical because it has a huge amount of data for the state. The division developed full electronic recording so people can file and can see records without having to go into the office, a very important service for the state economically. Over the past six months, the division's mapping and land reporting service was visited 70,000 times.

COMMISSIONER MYERS noted that the Mental Health Trust Land Office [slide 25] is in DNR but reports to a separate board. It manages over one million acres of land for timber sales, real estate, and energy exploration and development, with the money going into operating expenses and trust programs. Moving to slide 26, he reported that the trust generated $11.2 million from trust lands in FY 2014, and over the last 20 years has generated $168 million.

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COMMISSIONER MYERS directed attention to the backgrounds of the slides in his presentation, explaining that he put in these topographic, resource, and water maps as a way to show the amount of data and the types of data needed to manage the state's resources. He pointed out that this data is available to the public. While DNR manages the resource it is also establishing the resource base. It is providing the technical services the state needs to effectively manage its land. The department also has the technical data that is needed when the state has issues with the federal government so that it can effectively make strong arguments based on merit and not just based on legal points. That is huge because the better technical data will often win a dispute. Commissioner Myers advised that systematic development of these information sets

over time will make the economic opportunities in Alaska better, communities more resilient, and public safety much greater. An example of the lack of data is that less than 8 percent of the [federally owned] continental shelf along Alaska is mapped. The state worked in cooperation with the federal government to acquire high resolution satellite data that is now served on state servers at the university in cooperation with DNR and the Alaska Geospatial Council. Additionally, DNR is applying digital elevation data. This may not sound significant, but a few centimeters of difference on a coastline matters, understanding floodplains accurately matters, and it matters for aviation flights through mountain passes. Thus, DNR is taking the lead to coordinate state efforts to work with the federal government to acquire data where it is known to be inadequate.

COMMISSIONER MYERS further advised that as things change, such as from forest fires or coastlines erosion, data coverage needs to be repeated. The department is working with some very effective technology to provide services so it can get repeat coverage of these areas. This is very expensive, involving very sophisticated use of different satellites, airborne platforms, and ground-based platforms. Through these processes DNR is and will be identifying new mineral opportunities, new oil and gas opportunities, better areas to construct roads, better forest management, and ultimately better data for decision making by communities. This data will be public and will not have to be purchased commercially. He said he knows from his experience with the federal government that when this is done correctly the private sector will create value-added products that far exceed the cost of acquiring and managing that data. He urged members to think of DNR not just in terms of its land management but also in terms of its fundamental knowledge about the state and developing those data sets for the state.

1:32:32 PM

REPRESENTATIVE SEATON, regarding making data available to the public, noted that the Department of Environmental Conservation (DEC) has so far been unable to make contingency oil spill plans (C-Plans) available online so they could be looked at by ship pilots or others when there is a problem. He asked whether the quantity of data being made available by DNR through web-based systems is similar to the C-Plans. He further asked whether there could be an inter-departmental sharing for how to make that kind of data available online.

COMMISSIONER MYERS responded that the state, through the Alaska Geospatial Council in cooperation with the USGS, funded airborne surveys along the coastlines where good data was absent. Coastlines are changing dramatically in many places and will look much different in five years. Much of that coastline was recently covered with light detection and ranging (LIDAR) and interferometric synthetic aperture radar (IfSAR). Those raw and imagery datasets are critical. The system being talked about by Representative Seaton is actually best in oil spill software developed by the National Oceanic and Atmospheric Administration (NOAA). The spill prevention people at DEC work with NOAA to populate NOAA's system, which has satellite imagery, assessment of the shoreline areas, and susceptibility and classification of that shoreline for vulnerability, but it is still not at the desired high resolution. In collaboration with the university, a state survey is using a specialist who maps the coastline and looks at coastal erosion and vulnerability. He said he thinks that that dataset exists, but is managed through NOAA's program, not DEC.

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REPRESENTATIVE SEATON clarified he is talking about getting the submitted C-Plans put online so they can be reviewed by the public. He inquired whether there is any consistency between the data availability and web posting such that DNR could help DEC accelerate the process of getting the plans posted online.

COMMISSIONER MYERS replied that currently the university serves the data with funding from DNR, the Alaska Geospatial Council, and the USGS. The data is processed and service is through the Geographic Information Network of Alaska (GINA). He said he does not know whether that geospatial data is used by DEC in discussion within a C-Plan. For federal leasing the C-Plans are done by the Bureau of Safety and Environmental Enforcement (BSEE), which are available online, he believed, because oil spill risk assessment of the coastline is done within the NOAA framework. There is no easy place to get all data for state and federal plans together, he said, because it is in different places. He offered to work with DEC to do that.

1:36:33 PM

REPRESENTATIVE HERRON inquired as to what has been a surprise to Commissioner Myers since his return to Alaska state government.

COMMISSIONER MYERS answered that when he was at the university there was good coordination with DNR, so there has not been a whole lot of surprises. While he was at the university there was a tremendous amount of involvement with the Arctic Council and with the U.S. State Department; however, that is something at which the state has been unsuccessful and he is surprised at that. So, the state, through the Arctic Policy Council, did a really good thing. There is opportunity as the U.S. takes the chair for the state to have involvement, which is Craig Fleener's new job, but the legislature has an opportunity. He commended Representative Herron for the Alaska Arctic Policy Commission and the great report that it put out which is a potential beginning of the state presenting its face to the Arctic Council. It is important there be both a state and national effort because the state is the Arctic part of it. While the federal agencies represent a portion of that, the state clearly has different interests and different opportunities to present. As the Arctic Council has its meetings in Alaska, he said, he would like to see those opportunities continue. So, the surprise is that the state has not been more successful with engaging the federal government on the state's role on the U.S. chairmanship.

REPRESENTATIVE HERRON asked what else in DNR has surprised the Commissioner in his return to [state] government.

COMMISSIONER MYERS replied he is very pleased with the quality of DNR's directors and the work done in the agency. The agency has had a challenge in maintaining highly qualified people because state pay is not what the industry pays in many cases. The leadership is high quality, he continued, but he is concerned with the significant brain drain at the technical workforce level. A strongly skilled workforce in this highly technical organization is necessary to maximize economic development and public safety and provide services in the most economical way possible. Therefore, he is concerned about maintaining quality of workforce, particularly with the budget cuts that are having to be made.

1:39:47 PM

REPRESENTATIVE OLSON inquired whether Commissioner Myers will be poaching and bringing back to Alaska any of the incredible crew that he had back in Washington, DC.

COMMISSIONER MYERS responded he has no money with which to bring them back, although he did poach DNR's new legislative liaison,

Courtney Sanborn, from the university. Realistically, DNR is downsizing, not upsizing. However, on the natural gas side he will have to poach the best he can find because it is a world class opportunity and world class challenge to get it right.

1:41:05 PM

REPRESENTATIVE TARR asked what will happen to the Farm to School Program, completion of the Denali visitors' center, and other programs with the budget cuts.

COMMISSIONER MYERS answered that a 5 percent cut means a definite cut to services; an 8 percent cut is even more severe. In the last decade DNR only grew 2.7 percent, the lowest of any of the state agencies, so the cuts are really significant to DNR. The department prioritizes on economic development and public safety issues, so it can be imagined where the more likely cuts are. He said DNR is streamlining and downsizing administration as much as it can, but a 5 percent cut cannot be done without taking out some programmatic areas. He offered to discuss those areas once the budget is received.

The committee took an at-ease from 1:42 p.m. to 1:50 p.m.

Alaska LNG Project

1:50:41 PM

CO-CHAIR NAGEAK announced that the next order of business is an overview of the Alaska Liquefied Natural Gas (LNG) Project provided by the firm, enalytica.

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NIKOS TSAFOS, Partner, enalytica, explained that his firm is contracted by the Legislative Budget and Audit Committee to be the legislature's consultant. He said he spent 10 years in the oil and gas industry mostly as a consultant, with natural gas commercialization being his specific area of expertise. He added that he has worked with companies as well as sovereigns in figuring out what to do with the gas they have or how to get gas that they need.

JANAK MAYER, Partner, enalytica, noted that this is his fourth year as consultant to the legislature regarding oil and gas taxation issues, and Senate Bill 138 and the Alaska LNG Project. He said his background is in project economics, finance

evaluation, and the impact on those issues from things such as fiscal terms. He explained that enalytica was requested to provide members with a reminder, overview, and update about Senate Bill 138 and the Alaska LNG Project and what needs to be done to make this project actually happen. He pointed out that enalytica is an independent, outside advisor on this project; it is not part of the negotiating team which has the formidable task of developing and negotiating the various agreements and understanding the information before the state can reach the point where the project can progress to its next milestone.

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MR. MAYER reviewed the Alaska LNG Project's timeline [slide 2], explaining that any major LNG project needs to move through a timeline of these same activities. The Alaska project must move through three big stage-gated phases between now and the middle of the next decade when, all going well, an LNG project might come on line. Currently, the project is in the pre-front end engineering and design (Pre-FEED) stage, where the fundamental, detailed, conceptual engineering design work is being done to determine pipeline routing, the exact technologies that will be used, and how everything from gas treatment on the North Slope, to the pipeline, and to liquefaction will work. All the precise conceptual details are being laid out to start to understand what this project is, how it is going to work, and to narrow down the range of cost estimates and whether it is an economically viable project for all the different partners in a wide range of circumstances. If the work in Pre-FEED determines that it is worth spending the money to move forward, the next stage-gate will be FEED. In FEED every last miniscule detail of engineering design is developed, such as specification of every last flange valve. These precise details are then sent out to engineering, procurement, and construction (EPC) contractors for bids to actually construct the project. A final investment decision (FID) will be made by all the partners to commit the dollars to make this happen. The project is then constructed over the next several years and eventually comes on line.

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MR. MAYER pointed out that in addition to the engineering, a vast range of other processes must happen at the same time to move from stage-gate to stage-gate. For example, during Pre-FEED the process of initial marketing discussions will occur with potential LNG buyers. These discussions will be carried out by the partner companies and, under the structure of Senate

Bill 138, by the state. These discussions ideally will lead toward eventual signings of high-level nonbinding agreements, such as memoranda of understanding (MOU) and Heads of Agreement (HOA) to set out initial pathways of how the companies and the state might dispose of their share of LNG. Once in FEED, those will become more concrete agreements, maybe even some firm binding sales and purchase agreements, particularly to the extent that that is required to achieve sufficient financing to enable a final investment decision to occur. After construction there may be some additional sale and purchase agreements for any LNG that was not firmly contracted by buyers prior. Ideally, however, a lot of the sale and purchase agreements would come before final investment decision is taken.

1:58:31 PM

MR. MAYER discussed the financing process, stating there would be initial talks to understand the range of possible financing structures, whether that be one financial structure for all the partners or different financial structures for different partners, and how all of that can work. Once in FEED, more specific financing terms would be defined and loans and securities would be signed. Most of the financing for the project will be achieved, in place, and signed, by the time the final investment decision comes. At some point at the very end there will be a room full of vast stacks of paper that include LNG sales and purchase agreements, financing, and so forth, and all the parties will be walking around those tables signing those documents. That said, additional financing may still be needed by some parties during the construction phase. As each of these stages progresses, the overall level of risk in the project steadily comes down, and the further the project has progressed the cheaper financing tends to be. Once the project is on line there may, for the same reason, be refinancing of some of the debt that was taken on earlier.

2:00:18 PM

MR. MAYER reviewed the project structure and ownership process, noting that the initial structure is being defined under the current Pre-FEED stage. However, he noted, project structure and who are the equity participants can change dramatically over the course of the Pre-FEED, FEED, and construction stages. Partners may come and go. Some may decide they do not have the appetite for the project and some of the LNG purchasers may decide to purchase some share of the equity.

MR. MAYER outlined the investment process, reporting that the publically-stated estimate for the project's [construction] is $45-$65 billion. Between now and when construction begins, $400-$500 million will be spent through Pre-FEED and $1.5-$2 billion will be spent to get through FEED. The state's share through Pre-FEED is about $50 million with TransCanada's participation, and closer to $125 million without TransCanada's participation. Through FEED, the state's share is about $200 million if TransCanada remains, and about $500 million if the state decides to carry its full share through all portions of the infrastructure, including the gas treatment, processing, and the pipeline as laid out under the agreements of last year. During the construction phase, the state will need to cover its share of cash contribution, the amount of which will depend upon whether the state's share is 25 percent of everything or 25 percent of only the liquefaction. Depending upon the structural considerations, such as the involvement of TransCanada, the state's share will be between $6 and $15 billion.

2:02:57 PM

MR. MAYER turned to slide 3, stating that the agenda to go from Pre-FEED to FEED is formidable. Many things must come together before, in enalytica's view, the state can achieve the needed level of comfort for making the decisions that eventually lead to signing of agreements and binding commitments that move the project to FEED. The things needing to happen [over the next 12-18 months] fall into five categories: technical, commercial, organizational, fiscal, and regulatory. He said he and Mr. Tsafos will discuss what will likely be the big issues and difficulties in each of the categories and will address the questions of how the state will handle domestic gas and the marketing of its LNG. He drew attention to two papers prepared by enalytica, one entitled, "MARKETING ALASKA'S GAS FROM AK LNG: KEY ISSUES" and one entitled, "HOW LNG AFFECTS LOCAL MARKETS? LESSONS FOR ALASKA FROM WESTERN AUSTRALIA".

MR. MAYER said that much of the technical category is the domain of the project team, managed by Mr. Steve Butt. The team is working on a vast range of technical issues that include purchasing land, precise details of pipeline routing, and specific engineering decisions. This work is being done with the focus of driving down costs overall and driving down the uncertainty around those costs so that the range of $45-$65 billion can be substantially narrowed to provide an understanding of what this project looks like and how feasible it really is.

2:06:06 PM

MR. MAYER addressed the commercial category, stating that much hard work will be required from the state - the administration's team - on negotiating a range of agreements with the companies. Those include domestic gas, such as how supply for the market is going to occur and whose responsibility that will be; for example, whether it will be a requirement only for the state and its share of gas or, more realistically he suggested, a requirement that is shared between all of the partners and how is that responsibility met and shared and how is domestic gas priced. All of these will need to be negotiated in some degree of detail. It may be something that interacts with, and is included in, the fiscal agreements that need to be reached and that will ultimately provide some degree of stability and certainty for the companies as to what the long-term fiscal structure is going to look like and how the state proposes to guarantee that structure not changing over time.

2:07:31 PM

MR. MAYER continued discussing the commercial category, noting that the question of off-take and balancing is particularly crucial. A benefit of this structure is that it is one project overall, but in many ways four projects within a project. Each of the four partners has its own share of the gas with a corresponding 25 percent share, assuming the state decides to take its royalty and taxation entitlement as gas rather than cash, thereby becoming an aligned equal partner with a roughly 25 percent equity stake in the infrastructure investment and 25 percent of the gas passing through that. Crucial to think about is that the other three partners also have a working interest in the upstream and two of them have operatorship of at least one of the fields involved. The state has no working interest in the upstream fields and, in particular, the state and one of the companies do not have operatorship of either of the principle upstream fields that will supply the project. If the state takes its royalty and tax entitlements as gas it will at some point be incurring firm binding commitments to deliver LNG to counter-parties downstream, such as utilities. So, it will be crucial to the state managing its own risk to ensure that it knows exactly what it is getting at the wellhead or at the gas treatment plant in terms of gas being delivered and how that relationship with the working-interest owners and the field operators is going to work. For example, if there is underproduction in one month, what does that mean for the

state's share of LNG, how is it ensured that the state is made whole, and, in particular, how is it ensured that the state can meet its binding commitments? These negotiations and analysis by the administration will be difficult to do and to understand whether the state's potential liabilities to others can be met and that the risk of taking royalty and tax as gas can be adequately managed.

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MR. MAYER further noted that the state has already been going to destination markets, such as Japan and China, to meet with companies that would be interested in purchasing the state's share of LNG. If the state is comfortable taking its tax and royalty in-kind, decisions will need to be made about how the state proposes to market its LNG. For example, whether to do that primarily through the established producers or through the state building its own capacity. In terms of financing, the state must determine how to come up with the capital for its $6-$15 billion commitment. This was difficult to contemplate last year and now even more so in the current fiscal environment. There are many ways the state can go about this serious issue. For example, whether the state continues having TransCanada take its share in the gas treatment plant (GTP) and pipeline and signs a firm transportation services agreement with TransCanada to do that, or the state instead finances that additional share and arranges the financing options.

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MR. MAYER turned to the organization category, pointing out that this includes the joint-venture agreements and all of the governance agreements that organize how this structure works - who has right of veto over what decisions, what is an obligation for whom. Those will need to be in place further down the line but there is going to be an entire process, in particular probably a Heads of Agreement, that specifies all of these in detail as to where it is thought that the project is heading in terms of structure and how things will work. If the state is comfortable that it can manage the risks involved in taking royalty and tax entitlement in-kind as gas, modifications to the leases of the fields involved will be needed to enable the off-take and balancing. For particular leases, things like net profit share would need to be taken out to actually enable that royalty-in-kind structure to function in practice.

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MR. MAYER, regarding the fiscal category, reiterated that it will be a daunting task to really understand what is needed to get this project off the ground in terms of fiscal stabilization. A degree of comfort that terms are not going to change is needed to commit the $45-$65 billion of capital at the end to make this happen. Also needed is how to implement that, given restrictions in the Alaska constitution on making binding commitments on future legislatures. Much thought has already been given to the wide range of ways in which that particular hurdle can be overcome, but much further thought on structures through which that can occur is still needed. There will be difficult negotiations between the state and the companies on what the state thinks is reasonable and what the companies think they require, and how those two things can meet in the middle.

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MR. MAYER advised that the regulatory category will be at play all the while that the other categories are ongoing. There are the questions of the Department of Energy and export permitting, and the Federal Energy Regulatory Commission (FERC) and its environmental and other permitting processes, all of which will interact with such things as route, location, and local communities. The FERC process will develop an understanding of what the specific project impacts will be on the different communities, and a negotiation process will occur around how project impact payments should be structured and made.

MR. MAYER, returned to discussion of the fiscal category, stating that community property taxes can impact the project. Property tax as currently structured is quite harmful to the project economics upfront and provides uncertainty due to past property tax battles. The municipal advisory group has been looking at how property taxes for this project might be structured. Further refinement work needs to be done, such as whether it be a payment in lieu of taxes or some other structure that will provide adequate revenue for both the state and municipalities, certainty for both parties, and a workable structure that enables the project economics to work.

MR. MAYER pointed out that all of the aforementioned must happen over the next 12 months just to get to Pre-FEED. He urged committee members to think about the impact of all of these issues on things that fundamentally matter to the legislature. He further urged members to think about all of these things as representing agreements that will be coming back to committees

and the legislature as a whole for approval. Legislators need to be involved and understand what the administration is doing in the negotiating so that legislators have a level of comfort when those agreements do come back and the issues involved and the tradeoffs involved are well understood.

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REPRESENTATIVE HAWKER agreed the task ahead is daunting. He requested advice as to which things on the aforementioned list should be priorities for legislator's to consider this session.

MR. TSAFOS replied that he will first state what he thinks legislators do not need to worry about - not because they are unimportant but because there are established processes or someone else is doing the work. Legislators do not need to worry about the technical side because it is driven by the companies with the support of the administration. There are some broad strategic questions that have a technical implication; for example, the answer to the strategic question of which communities get gas has a technical implication because it tells where to put the pipe and the compression. Legislators also do not need to worry about the regulatory category because it has established processes - the Department of Energy for export approvals and FERC for the permitting process.

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MR. TSAFOS continued, saying he sees legislators playing a significant role in the [commercial, organizational, and fiscal categories]. Regarding fiscal stabilization or property tax, the legislature would clearly play a role as to what it is willing to live with, thinks is fair, thinks appropriate, and represents the state's interest. Regarding the organizational category, he said a real question for the state is how this governance is going to work. In particular, the legislature's role should be to determine what things are veto areas, what are the things the legislature wants to ensure will go ahead unless a, b, or c has been approved. Those things are going to be codified in governance agreements, so the more legislators can think about it and say "I want to make sure that this governance agreement gives us this right to have a veto or to have a say, those are things that will help … the administration negotiating." Regarding the commercial category, Mr. Tsafos said he thinks of these things as preparing the groundwork for future decisions. For off-take of gas, selling gas to Japan, and financing, the legislature will not have too much on its

plate over the next 6-12 months. However, these are areas where legislators can have a very constructive conversation to understand the boundaries, the trade-offs, and where the legislature would like to go, and then give input to the administration to make sure it negotiates things that could pass the legislature. That is partly why enalytica wrote the aforementioned papers on domestic gas and LNG marketing. Those are areas where legislators ultimately have to think about very broad questions, such as how much risk to take as a state, what kind of volatility the legislature is willing to live with, and, on the financing side, how much the legislature is willing to put the state's credit at risk for this project. Those are big strategic questions, but the legislature will not have very concrete things to decide over the next 12-18 months. Legislators will have to think about some very broad directional questions and enalytica is hoping to work with legislators on those. However, for fiscal and property, legislators may have some more concrete things to get at.

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MR. MAYER added that, overall, the financing considerations are broad; they are not about specific loans, tranches, or financial instruments. However, one crucial decision that the legislature needs to make over the next 12 months will profoundly impact financing and structure of the project, and that is the role of TransCanada moving forward. At the moment TransCanada is the partner taking the state's 25 percent shareholding in the gas treatment plant and the pipeline. As such, TransCanada is the entity fronting all of the capital that the state would otherwise have to front to enable the Pre-FEED work to continue. In October 2015 the state will have to decide whether it is ready to sign a firm transportation services agreement with TransCanada; once signed, that is set in place. There are strengths and weaknesses to having TransCanada in that arrangement. Benefits include having a very experienced pipeline player, having an independent pipeline operator in the mix that is expansion oriented and has a different set of incentives to the other companies involved in the project, and that is potentially aligned with the state's interest on certain areas. In particular, those are benefits if TransCanada can eventually be the operator of the gas treatment plant and the pipeline. Whether TransCanada would or would not be the operator is part of the ongoing negotiations that need to occur.

MR. MAYER, regarding cost, noted there is also the question of how much debt and other forms of capital the state can raise for

its total share of this project. What would be the state's cost without TransCanada? There is a wide range of permutations for that: how much the state tries to finance through recurrent revenue; how much the state tries to use the assets of revenue streams associated with the permanent fund; when the state issues debt, how much is its own direct obligations; and how much the state can rely on limited or non-recourse financing. Each of those different sorts of finance has a cost. Much work needs to be done to understand all of those variables and what the difference in cost would be with and without TransCanada's involvement in those financing options.

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REPRESENTATIVE HAWKER said it caught his ear when it was stated that the legislature really does not have any decisions to make for 12-18 months. He said he therefore appreciated Mr. Mayer clarifying that in accordance with Senate Bill 138, the legislature is anticipating a special legislative session later in 2015 to approach some of these questions that are raised.

MR. MAYER replied that this is a very, very ambitious timeline, but ideally there will be legislative session later in 2015 in which that and all of these agreements, or a large number of them, would be coming back to the legislature for approval.

REPRESENTATIVE HAWKER noted there was quite a list of agreements last year that the legislature anticipates seeing at the end of 2015.

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REPRESENTATIVE SEATON, regarding TransCanada's involvement, posed a scenario in which the state does not buy part of that back. He inquired whether any consideration is being given to a prohibition of TransCanada selling its part to the producers so that the state does not get into the same alignment problem it has with the Trans-Alaska Pipeline System (TAPS).

MR. MAYER, regarding the decision point ahead, clarified that there are two questions. The initial question is whether the state signs a firm transportation services agreement so that from FEED onward TransCanada is or is not in the mix. If TransCanada is in the mix, the second question is whether TransCanada carries the full 25 percent or the state backs into 40 percent of that share. If the state does not sign a firm transportation services agreement, it simply carries its share

onward. If the state does sign a firm transportation services agreement, but does not back into that 40 percent of the 25 percent share, it seems to him that what restrictions do or do not exist on TransCanada for whether other parties could be involved in TransCanada's share of that infrastructure will depend in large part on the details of that agreement. The precise binding contractual relationship between the state and TransCanada could be specified either in that agreement or in the series of agreements that will go with it.

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REPRESENTATIVE TARR inquired whether "governance agreements" are the suite of agreements that being talked about for this fall.

MR. MAYER replied that the agreements of this fall will cover a wide range. Many of the things seen under commercial, fiscal, and organizational are on the timeline to be negotiated by later this year - some in preliminary form and some in final form,.

REPRESENTATIVE TARR asked whether enalytica is generically referring to those as governance agreements.

MR. TSAFOS responded that governance agreements are anything that relates to the relationship between the different parties - agreements that codify the relationship, rights, and obligations that one party has to the other, such as joint-venture agreements or firm transportations services agreements.

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REPRESENTATIVE JOSEPHSON understood that if the state does not sign a firm transportation services agreement [with TransCanada] then the state will have its full equity share, unless there is some other new contracted party.

MR. MAYER answered correct.

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MR. TSAFOS drew attention to slide 4, stating that enalytica is trying to "plant some seeds" in members' heads in terms of how to think about some of the questions before the legislature. He clarified that enalytica is presenting the issues that will have to be grappled with and how to start thinking about them, not coming before the committee with answers or suggestions. Addressing the issue of marketing LNG, he reminded members that

under Senate Bill 138 the state can take possession of the gas and be responsible for disposal of this gas. He explained that the next three slides, along with enalytica's accompanying paper ["MARKETING ALASKA'S GAS FROM AK LNG: KEY ISSUES"], lay out some ideas in how to start thinking about marketing and how to think about the best way to protect the state's interest.

2:34:01 PM

MR. TSAFOS stated that slide 4 summarizes six parameters for the sale of LNG using seven or eight recent projects from around the world, the details of which are outlined in enalytica's accompanying paper. Regarding the parameter of how much gas to sell before taking final investment decision - going to construction - he said all the projects included in the summary sold at least 70 percent of their gas before going to construction, many of them selling 100 percent. Standard practice is that a project does not go to construction without pre-selling a large share of the gas. Regarding the parameter of counter-parties, the average was 2.9 buyers per project, but the range was from 1 to 6 buyers. Some smaller projects had just one buyer and others of similar size to the Alaska LNG Project had six buyers. Because each partner in the Alaska LNG Project is going to be selling its gas separately, that automatically creates more buyers. Regarding the parameter of price exposure, he noted that many of the Lower 48 projects are linked to Henry Hub, the gas price in the U.S., while projects outside the U.S. are mostly still linked to oil. Regarding the parameter of contract size, Mr. Tsafos related that this varied from 1 million tons [per annum] to over 4 million. With the Alaska LNG Project at 16-18 million tons and the state having 25 percent of that, the state is looking at selling 4-5 million tons. The state could probably contract to sell that amount to just one company as that is a size of contract seen elsewhere, but the state could also easily sell to three or four companies. Regarding the parameter of transfer point, the question is whether to sell this gas at Nikiski or to get into the shipping. Broadly speaking, there is no clear trend between who does the shipping - the buyer or the seller. The point is that if the state wants to get into the shipping it probably can, but, if not, no one will hold the state responsible or penalize it. Regarding the parameter of equity partnership, about one-third of the buyers had ownership in the project - either because the project developers sold gas to themselves or because a buyer coming to the project to buy gas also wanted a piece of the ownership. Thus, there are some basic trends but also a lot of

wiggle room. Legislators do not have to think about a "cookie-cutter approach", they can develop a path that works for Alaska.

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REPRESENTATIVE JOHNSON recalled Larry Persily's statement before the committee [on 1/23/15] about shorter contracts, such as five years. He surmised this will make it harder for financing and inquired how it will play into the Alaska LNG Project.

MR. TSAFOS replied he thinks shorter contracts are a clear trend for projects that are under operation and for companies that have a big portfolio, companies like BP or Exxon that have gas from five or six different places. For new projects there is still a preference for long-term contracts. So, the trend is there but it is not for new developments.

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MR. TSAFOS, responding to Representative Seaton, clarified that slide 4 is a sample of seven or eight LNG projects in the world and is for the entire project. For example, it includes the entire Sabine Pass Liquefaction Project in the Lower 48, which had four counter-parties that it sold gas to. So, in some ways the summary applies to the entire Alaska LNG Project, not to just the Alaska share of the project.

REPRESENTATIVE SEATON, regarding pre-sale of between 70 and 100 percent of the gas, asked when the amount of gas available will be known from the Alaska Oil and Gas Conservation Commission (AOGCC). He asked whether enalytica's assumption is that the pipeline will be full at the start of the Alaska LNG Project.

MR. TSAFOS answered that he cannot comment specifically on the AOGCC question, but the overarching presumption is that the project will get approval to get to full capacity pretty quickly. He said he does not think anyone has the intention of building a $45-$65 billion piece of equipment and not utilize it, so one of the assumptions is that this can be done with permission that it is not going to hurt oil recovery. With the project having three trains, there may be 6-18 months between trains and therefore a staging in terms of construction. Once things come on line the interest is generally to get to 100 percent as quickly as possible.

REPRESENTATIVE SEATON inquired how much additional gas must be found on the North Slope to support that production over time.

He noted that some North Slope fields are currently having to import natural gas from other fields and inquired whether there are other North Slope competing uses that could affect the gas that is available and therefore the wellhead price that the project is being built on.

MR. TSAFOS replied that the overarching assumption is that there is sufficient gas between Prudhoe Bay and Point Thomson to underwrite 20-some years of production, and then there is either expansion or the discovery of new resources to backfill as these two projects run out of gas.

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MR. TSAFOS moved to slide 5, stating that after distilling the experience of other countries enalytica has come up with four principles to guide the state's marketing efforts. The first principle is to think about performance over time. When getting into a 25-30 year deal, the wisdom of decisions cannot be judged on a day-to-basis. It is a volatile market with prices going up and down - the best price today may not be the best price later. Legislators need to think about what is going to serve the interests of the state over a long-term period. The second principle is to focus on risk, not necessarily the highest price. For example, it is easy to feel short-changed if Alaska is selling its gas for $11 while someone somewhere else is selling gas for $12. The LNG market is so fragmented that it is always hard to know what the highest price is and prices can reflect different conditions, different times, and different terms. The idea is not necessarily trying to maximize price, but rather trying to limit volatility, trying to manage risk.

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MR. TSAFOS addressed the third principle by noting there was discussion during consideration of Senate Bill 138 about whether to have the producers sell the state's gas. He said enalytica thinks that is a legitimate option for the state and something legislators should think about. He cautioned, however, that if the state sells its gas through the producers, the state is basically adopting the producers' risk profile. While the producers are experienced, they may do things that the state would not because they are willing to take on risk that the state is not willing to take. So, it important to think about what the state's risk appetite is, and ask the producers whether they are willing to meet that risk profile rather than just outsourcing and adopting the producers' risk profile. The

producers have operations around the world and different exposure around the world; therefore they may be willing to take risk that the state may not be willing to take.

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MR. TSAFOS emphasized the importance of the fourth principle, building in-house expertise, and said it is combined with the third principle. In looking at sovereigns around the world, enalytica found that those that outsourced the knowledge to oil companies came to regret it. Deep knowledge and understanding of the market is crucial, especially when faced with renegotiations or events like Japan's Fukushima Daiichi nuclear crisis, because these events impact the bottom line. This can only be done by staffing up. The ability to understand the state's risk profile, as well as to sell gas in a way that meets the state's risk appetite, is going to be dependent on having people that know how to do that.

2:47:09 PM

REPRESENTATIVE JOSEPHSON observed the statement on slide 5, "the highest price could mean being priced out of a market and having LNG unsold". He surmised that would only be true in the case of a spot sale because if 100 percent of the gas is committed then someone is buying the gas and so there would be no unsold gas.

MR. TSAFOS said the answer is "yes and no". It is yes in the broad sense that the state will have pre-sold its LNG, but usually LNG contracts have wiggle room. For example, a contract might be for 1 million tons, but there may be a take-or-pay liability so that the buyer only needs to buy 800,000 tons on a firm basis. If the state has very expensive gas, people are going to try to bring the state as low as they have to and may not go all the way up to their contractual obligation. This was seen with "Kenai", which was selling gas into Japan for a long time. Then, towards the later part of the project, 2009, there was a renegotiation and Kenai went from some of the most competitive gas in Japan to some of the most expensive gas in Japan. But, when it came for renewal, the Japanese were not so keen. So, there are some tradeoffs.

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REPRESENTATIVE HERRON offered his appreciation for the four principles, saying he completely understands enalytica's advice on the fourth. Regarding the third principle, he asked whether

risk tolerance could be negotiated between the state and the producers so that it is to the state's tolerance.

MR. TSAFOS confirmed this could be negotiated, but said it gets tricky. For example, the state selling its gas through Exxon at the risk profile the state wants is sort of different than Exxon selling this gas on the state's behalf. Down the road the state might feel that Exxon is taking this gas and making a huge markup on it, creating some displeasure. So, while it is possible, it would not necessarily be that the producer is selling the gas on the state's behalf, the state is just deciding to sell it to the producer. However, quite a few times enalytica has seen some risks to that arrangement down the line. There are multiple transactions between the time the gas leaves the field and ends up at the consumer, and there are some times when there are huge markups, and that usually leads to a lot of tension and leads to calls for renegotiation arbitration. So, there are some cautions that he would put to his statement. It is absolutely right that just the same way that the state can go to a Japanese buyer and say this is the risk tolerance that it has, ExxonMobil and Conoco could give the state the same terms possibly.

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REPRESENTATIVE TARR said she wants to ensure that this discussion is specific to the final version of Senate Bill 138 on this point. She recalled that [the committee] approached it from the angle that if [the state] entered into that kind of commercial agreement for [producers] to sell the state's gas, that the [producers] would have to sell the state's gas at a price as least as good as [the producers] were selling their own gas. While later amended by the House Finance Committee, the intent of that language was still in the bill. However, she pointed out, the committee did not look at it from the risk profile perspective. She asked how this third principle can be addressed given the language used in Senate Bill 138.

MR. TSAFOS replied that Representative Tarr is correct and said the idea of a different risk profile is something that enalytica tried to highlight last session as well. He said he thinks that that language speaks specifically to selling the gas on the state's behalf rather than selling the gas to the producers. It will be interesting to see if there is any meaningful distinction between those two things because the state can really just say it is selling the gas to the producers and the producers can do whatever they want with it, which is slightly

different than saying "here is an amount of gas that you have to sell on the same terms". He said he thinks the aforementioned language was used in the legislative intent and it must be respected and used for guidance in this process. Enalytica is trying to push members to the next stages of that. At some point there will be terms and the question is how do legislators judge them and those are the kind of principles that could help legislators judge the terms.

2:52:40 PM

MR. TSAFOS turned to slide 6 entitled, "WHAT LEVERS DOES THE STATE HAVE?" He pointed out that in regard to what he said about risk profile, these are the tools at the state's disposal. He urged members to read enalytica's accompanying paper.

MR. TSAFOS noted that in regard to financing [slides 9-10], there is not yet much new information and therefore a lot of the financing part is the same conversation as last session.

MR. TSAFOS addressed slides 7-8, stating that when there is LNG export, the question is what happens to a local market. This is a legitimate question that is being asked by Alaskans, the Lower 48, and other jurisdictions as well. Rather than doing modeling, enalytica decided to study a similar project to see what happened. Western Australia had so many similarities with what Alaska is going to experience that enalytica wrote a paper on it ["HOW LNG AFFECTS LOCAL MARKETS? LESSONS FOR ALASKA FROM WESTERN AUSTRALIA"]. Drawing attention to slide 7, he said five things are striking about Western Australia. Some are counterintuitive and changed his own understanding of the link between exports and domestic markets.

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MR. TSAFOS continued, stating the first finding is that there is no set link between exports and domestic prices, as illustrated by the top right graph. Second, just because there are exports does not mean people are going to abandon the domestic market. As seen in Alaska's own Cook Inlet, an export facility has not meant that companies are uninterested in exploring and producing gas for the local market; this same thing is seen in Australia. Third, Western Australia has a reservation policy that basically forces LNG projects to commit a certain amount of gas to the local market. That effort to commit gas to local market crashed the market, as depicted in the bottom right graph. The Northwest Shelf LNG project came on line in 1989, but had a

domestic stage that came on line in 1984. When it started producing, Northwest Shelf had almost 100 percent of the market for about a decade because the state committed them to supply so much gas to local market that there was no room for anyone else to come in and it took a while for that overhang to work through the system. This is a lesson that applies to Alaska. Fourth, the reservation policy definitely makes LNG projects pay attention to the local market. In the natural scheme of things an LNG exporter is not inclined to supply the local market; an exporter does that because of its obligation to the state, the citizenry, and having a license to operate, so there is definitely a role for policy to come in and think about how to address the local market. Fifth, Western Australia found that having a domestic reservation policy is not enough to create a well-functioning market. Work must still be done on regulation to create transparency and competition. The question is not "How do I keep this gas at home?" Rather, it is "How do I regulate this market that now includes a really big supplier that does LNG?"

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REPRESENTATIVE JOHNSON pointed out that Alaska's constitution says to maximize the resources for all citizens. That is interpreted such that if gas is sold for $10 offshore it is sold for $10 onshore in terms of some of the state's royalties with refiners and so forth. There may be the ability to back out transportation, but other than that the basic number has to be the same. He inquired whether Australia has anything similar to this or could give away the gas locally if it wanted to.

MR. TSAFOS responded that Australia does not. Australia allows buyers and sellers to agree to whatever they can meet in the marketplace and agree to. This is why there has been a range of prices, with prices going up again in recent years as markets have become tighter. So, there is no overarching guideline that drives the direction of gas pricing.

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MR. TSAFOS moved to slide 8, addressing the question of how to apply Western Australia's experience to Alaska. He said many of these things also ring true to Alaska. Alaska's experience shows that domestic prices have sometimes correlated with exports and other times not, in large part driven by whether the Regulatory Commission of Alaska (RCA) says that the domestic price should be linked to oil or Henry Hub. Pricing in the Cook

Inlet is driven by local market forces, not what is happening in Japan. Western Australia experienced this as well; it is driven by supply/demand in Western Australia, not by supply/demand in Japan. However, the fact that LNG can be exported does have an impact because it is a source of demand, but it does not automatically mean that that is really what drives the price. Lastly, as seen with Hilcorp, just because Alaska has exports does not mean that companies will be uninterested in coming [to Alaska] to explore and produce gas for the local market.

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MR. TSAFOS advised there are two takeaways from that for the path forward. First, it is very tempting to make sure that every single bit of local demand is met by the Alaska LNG Project. However, the unintended consequences of that must be looked at, one of which is that no one will have an interest, or the ability, to develop smaller deposits of gas because all of the market will have been taken, as shown in Western Australia. Second, as seen in Western Australia, rather than how will Alaska LNG meet demand, the question is how to bring affordable energy to all Alaskans given that there is Alaska LNG. What are the regulatory and policy toolkits that should be employed given there is Alaska LNG? Part of last year's discussion was about putting some of the royalty into a fund for all Alaskans. Those are the kind of things that can drive that conversation. Rather than asking how to regulate Alaska LNG, instead ask how to make this system work given that Alaska LNG is there. Those are the broad, strategic, high level directional questions that enalytica is submitting to members, with the understanding that the conversation is just getting started. While everyone knows where the overall objective is, the nuances of how to get there are what enalytica has presented today.

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ADJOURNMENT

There being no further business before the committee, the House Resources Standing Committee meeting was adjourned at 3:02 p.m.