ALASKA STATE LEGISLATURE
JOINT MEETING
SENATE RESOURCES STANDING COMMITTEE
SENATE FINANCE COMMITTEE
February 13, 2012
1:03 p.m.

1:03:15 PM

CALL TO ORDER

Co-Chair Stedman called the Senate Finance Committee meeting to order at 1:03 p.m.

SENATE FINANCE COMMITTEE MEMBERS PRESENT

Senator Lyman Hoffman, Co-Chair
Senator Bert Stedman, Co-Chair
Senator Johnny Ellis
Senator Dennis Egan
Senator Donny Olson
Senator Joe Thomas

SENATE FINANCE COMMITTEE MEMBERS ABSENT

Senator Lesil McGuire, Vice-Chair

SENATE RESOURCE COMMITTEE MEMBERS PRESENT

Senator Joe Paskvan, Co-Chair
Senator Bill Wagner, Co-Chair
Senator Wielechowski, Vice-Chair
Senator Bert Stedman
Senator Hollis French
Senator Gary Stevens

SENATE RESOURCE COMMITTEE MEMBERS ABSENT

Senator Lesil McGuire

ALSO PRESENT

Dr. Pedro Van Meurs, President, Van Meurs Corporation, Legislative Consultant; Senator Cathy Giessel

SUMMARY

^PRESENTATION BY PEDRO VAN MEURS ON ARCTIC AND ALASKA OIL ECONOMICS: SESSION TWO

1:05:00 PM

DR. PEDRO VAN MEURS, PRESIDENT, VAN MEURS CORPORATION, LEGISLATIVE CONSULTANT, provided members with a PowerPoint presentation: Policy Options for Alaska Oil and Gas (copy on file). He observed that he would focus on Session 2 of his presentation: International Competitive Framework. He emphasized the importance of knowing the structure of competition. He stated he would evaluate competition for five groups of resources: existing light oil production, new light oil production, heavy oil and shale oil, and natural gas.

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Mr. Van Meurs looked at slide 26, existing oil production. Shallow water oil production had the largest peer group, with 125 world nations that were compared to Alaska in terms of the exporting jurisdictions and 28 oil exporters. The Arctic Report compared Alaska with other Arctic jurisdictions.

Mr. Van Meurs reviewed profitability for various jurisdictions, on slide 27. He looked at the rate of return for world competitors using a base case field of shallow water oil production. A typical field with a $20 per barrel cost was compared for rate of return and profitability for each of the world competitors. Alaska, Cook Inlet oil, which was slightly better than North Slope oil, came out favorably when compared to other exporters. Exporters with high costs, typically had costs over $15 per barrel. Lower cost jurisdictions had costs in the $10 to $15 dollar a barrel range. Jurisdictions with very low costs could typically charge higher government take than jurisdictions with high costs. Alaska was not badly positioned at number nine of 28 in profitability.

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Co-Chair Stedman observed that Cook Inlet oil production was negative in terms of revenue. Mr. Van Meurs clarified that the analysis pertained to terms not received funds. The review was based on a comparison of fiscal systems. Cook Inlet with mature fields was in a later phase.

Co-Chair Stedman observed that the comparisons were based on $80 per barrel and questioned if the comparisons would change if the per barrel price increased. Mr. Van Meurs affirmed that per barrel price changed the comparisons.

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Mr. Van Meurs, in response to a question by Senator Wielechowski, explained that Cook Inlet was used because it was a shallow water comparison. North Slope terms were compared to other Arctic jurisdictions in subsequent slides.

Mr. Van Meurs, in response to a question by Senator Wielechowski, explained why investment would occur in Qatar or Russian, which had negative rates of return. The base cost rate in the comparison was $20 per barrel. The typical cost in Qatar was $5 to $8 per barrel. Qatar was analyzed at a higher cost than would be experience.

Mr. Van Meurs reviewed the color codes used in the cost comparisons on slide 27: exporters identified in blue compared in cost with Alaska; exporters identified in yellow were lower than Alaska; and exporters identified in green were much lower than Alaska. He concluded that the government take in low cost areas were higher than in high cost areas.

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Mr. Van Meurs looked at government take for various jurisdictions. Alaska rated 10 out of 28 jurisdictions in terms of attractiveness. Alaska was not unusually positioned internationally from a competitive point of view. Government take was based on $80 per barrel. Alaska was at 70 percent government take at $80 per barrel, which was not an unusual level of government take compared with other exporters. Nova Scotia and Canada, with costly conditions, were on the lower side of government take.

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Senator Wielechowski observed that Cook Inlet had a zero percent tax rate for oil and a 12.5 percent rate for royalty with large credits. Mr. Van Meurs explained that the government take was lower because the zero tax rate was

limited and would expire. The time frame used in his comparisons assumed a decade before production and would fall in the new regime, 2022. There would only be three years at the low tax rate.

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Mr. Van Meurs concluded that an increase to $120 a barrel would not change Alaska's relative position, despite the fact that it had a price progressive system since many other nations also had price progressive systems. For very high prices the scale goes "off the rails" but Alaska was well positioned in the $80 to $120 range from an international competitive view.

Co-Chair Stedman asked for a definition of "progressive" and "regressive". Mr. Van Meurs clarified that a progressive system in taxation meant that the total government take increased proportionally with the price; a regressive system would result in a lowering of total government take proportionally if the price increased. Alaska's system under the Alaska's Clear and Equitable Share (ACES) system was structured so that the government share went up disproportionally with increased price and the government would receive a higher benefit of the total. Many nations have progressive systems similar to Alaska's; therefore, Alaska's relative position would not change significantly with higher prices.

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Mr. Van Meurs compared Alaska's Arctic oil price under ACES to other jurisdictions. Cost in the Arctic was dependent on the existence of transportation systems. He observed that slide 30 showed jurisdictions in red that were without transportation; blue lines indicated transportation systems in place. He concluded that prices under ACES were not out of line with other jurisdictions. Arctic costs were relatively similar.

Mr. Van Meurs, in response to a question by Co-Chair Stedman, explained that assumptions were based on an international oil price of $80 per barrel, with transportation costs netted back. Trans-Alaska Pipeline System (TAPS) transportation costs were $5 per barrel of oil. Russia pipeline transportation costs were $7 per

barrel of oil. Assumptions were made for areas without transportation.

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Mr. Van Meurs discussed net present value on slide 31. Alaska compared well with Norway and Russia. Russian terms were regressive; at lower costs Russian terms would come out better than ACES. There were still quite a few low cost Russian fields in development. The negative feature for Russia was due to high costs. Alaska was not onerous at $80 a barrel.

Mr. Van Meurs observed that the relationships between Arctic nations would remain stable at $120 per barrel of oil, except that Russia would improve significantly due to its regressive system.

Co-Chair Stedman asked how prospectivity would be dealt with in the basin's; and questioned if Greenland's basin was as rich as Alaska's.

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Mr. Van Meurs discussed attractiveness from a geological point of view. He referred to slide 32. Greenland had a low government take and was offering favorable terms since oil had not been discovered. Canadian federal lands had good prospectivity but had not constructed a large scale transportation system; consequently, the Canadian government had to offer relatively attractive terms. The Alaskan Chukcki Sea had good prospectivity (geology) and good government take levels. He spoke to other jurisdictions and observed that Iceland had near zero prospectivity. Russia's Krasnoyarsk area had been discovered during communist times and was already in production. He observed that opportunities were present in the Bering Sea since Norway had concluded agreements with Russia. Russia offered 2010 export duty region terms on many smaller fields, which lowered government take.

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Co-Chair Stedman asked Mr. Van Meurs to address the issue of over 100 percent government take. Mr. Van Meurs explained that if a system was not economic at a particular price and cost, then the government take showed up as over

100 percent. Government take in Russia would be at 80 percent with a $120 per barrel price and $15 per barrel cost. Russian government take was very sensitive to cost and price assumptions.

Senator Egan asked if the anticipated million barrels a day oil production level would include Chukcki oil. Mr. Van Meurs explained that his reference to one million barrel a day production relied on available Alaskan resources. The Chukchi Sea alone could produce half a million barrels of oil a day, but it was not clear if the oil would go through TAPS. Discoveries in the Beaufort Sea could go through TAPS. The objective of the governor was to increase production, not to get more oil through the line.

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Senator Wielechowski questioned how government take was calculated. He observed that the Shell Oil Company paid $3 billion in signature bonus costs when the leases were bought in the Chukcki and Beaufort Seas. The Great Bear oil company paid $8 or $9 million when it acquired 500,000 acres. Studies that factor in signature bonus costs show the Chukcki and Beaufort Outer Continental Shelf (OCS) government take would spike to 77 percent. Mr. Van Meurs did not necessarily agree. He emphasized that the bonus was dependent on size of the anticipated discovery. The $3 million bonus would be immaterial in overall government take in compared to the size of oil field.

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Co-Chair Stedman asked for clarification on upfront bonus costs versus the net present value calculation. Mr. Van Meurs explained that assumptions about bonuses were included in government take since it was a payment to government. Government take came out at the first day of cash flow, so a 10 percent net value discount was important, as front ended bonuses weighed heavily. Bonuses were not as significant in the undiscounted government take.

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Mr. Van Meurs concluded that ACES was tougher than a number of other jurisdictions. Alaska was positioned well even among Arctic jurisdictions.

Mr. Van Meurs reviewed slide 33 and observed that Alaska compared well to other jurisdictions in front-end loading. Investors considered when a government takes its payment. Governments that can wait have a positive impact (back ended system); taking government share upfront has negative impact on profitability (front-ended). Discounted and undiscounted government take comparisons showed the relative degree that governments take their revenues early in terms of value. Low numbers signify that governments were beneficial in terms of their take. Governments with high numbers on slide 33 were not beneficial to investors in terms of government take. Alaska was the most favorable of the Arctic jurisdictions due to tax credits that provide early benefits. Russia required export duties from the start; much like paying a royalty. Alaska had a favorable distribution on a worldwide basis.

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Mr. Van Meurs discussed slide 34 and noted the importance of incentives given by government in terms of exploration; how much governments shared in exploration in terms of tax deductions. A government that losses, in the case of a dry hole, shares in the geologic risk. Alaska was the best jurisdiction in the world along with South Africa in terms of sharing geological risk.

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Co-Chair Stedman asked how basins would be ranked for geographical risk outside of the tax code. Mr. Van Meurs clarified that it was difficult to give a single geological risk number for the entire North Slope; some areas were relatively high, others were not. He assumed that one out of five exploration wells would be discovered, which was generous for some jurisdictions. Only Iceland was considered a high risk. The government of Alaska participated in geological risk to an unusual rate.

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Senator Thomas asked how Alaska stacked up against North Dakota and Texas. He also questioned if the state would be a high risk sharing government without exploration credits. Mr. Van Meurs clarified that the risk factor was tied to the high tax credit. North Dakota did not have tax credits.

Alaska was the most favorable in the United States and one of top two in the world.

Senator Paskvan observed that Alaska had a net system as opposed to a gross system and questioned if deduction of operating and capital expenses indicated government risk sharing. Mr. Van Meurs clarified that he was referring to geological risk sharing not economic risk sharing. The concept of ACES was to share in economic risk. He concluded that economic risk sharing was embedded in ACES, but that there was extremely high geologic risk sharing.

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Senator Thomas asked for comparisons of overall economic risk. Mr. Van Meurs did not have economic or political risk charts in his study. He observed that in a profit sharing system, in general, the government observes more risk than in a plain royalty system.

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Mr. Van Meurs concluded that the government take of about 70 to 75 percent for Alaska was reasonable compared to the other exporters for existing operations. He felt that 65 percent for existing production gave away too much; 70 to 75 percent was well in the international competitive scale for existing production. He observed that SB 192 retained significant revenues on existing production in the 74 to 76 percent government take range, but did not think it was necessarily a serious bill in terms of economic concessions since there was no cap. He concluded Alaska also offered a favorable time distribution of the government take and very favorable sharing of geological risk at the 70 to 75 percent range.

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Mr. Van Meurs reviewed new production as demonstrated on slide 37. He observed that Alaska light oil production was rapidly declining (5 percent per year). Internationally, there were not many jurisdictions in declining production mode; examples were Alberta, Gabon, Trinidad and Tobago. Both Gabon and Trinidad applied a 12 percent drop to new blocks in order to attract new investment in an effort to offset declining production. Terms and conditions on old blocks remain unchanged.

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Mr. Van Meurs concluded that Gabon, Trinidad and Tobago were three jurisdictions with declining conventional oil production. There were not many in the "peer group" for Alaska that would be exporting jurisdictions with a declining conventional oil production.

Senator Paskvan observed that the administration indicated that the anticipated decline [in production] from 2010 to 2020 would be 2.1 percent. Mr. Van Meurs clarified that his calculations of five percent decline were taken from published charts used as background information from the governor for HB 110, which seemed reasonable.

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Mr. Van Meurs observed that Canada had moved in another direction from the United States and competed differently than Gabon, Trinidad and Tobago in their fiscal system. Canada designed royalties on formulas with a system for a wide range of economic conditions. Royalties were higher when economics were more profitable; royalties were lower in less profitable situations. Canada competes through the structure of government take, not the level.

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Mr. Van Meurs noted that slide 41 demonstrated government take on small high cost wells ($50 per barrel of oil cost and 10,000 barrels cumulative) to a rich well ($20 per barrel of oil cost and 1,000,000 barrels cumulative). The Texas well had government take over 100 percent. Alberta stayed almost flat and went up with the more profitable field. He concluded that when there was new oil under higher costs (Alberta) the system automatically adjusted to the new situation, which is why there is so much drilling in Alberta, as both high and lower cost wells are profitable.

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Mr. Van Meurs reviewed slide 42, which demonstrated typical government take on oil wells in North America. Canada was more attractive than the United States due to improved

Canadian terms over the past 15 years. Canadian terms reflect that it had declining oil production.

Senator Wielechowski asked if private land owner take was included in the government take for Texas and Louisiana. Mr. Van Meurs affirmed and observed that it was not uncommon to pay 25 to 30 percent for government take in those jurisdictions.

Senator French queried how many private contracts were reviewed for an average. Mr. Van Meurs explained that contacts in Texas and Louisiana provided an average.

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Senator French wondered if slide 42 could be applied to slide 32. Mr. Van Meurs pointed out that North American wells had a different price structure than Arctic fields. He stated that the chart was based on a specific cash flow. He stressed that wells and fields were taxed differently.

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Co-Chair Stedman concluded that the North Dakota, Bakken Horizon oil well at 50 percent (government take) was not a direct correlation on Alaska's light oil at 70 to 75 percent. Mr. Van Meurs responded that Alaska was compared with world exporters. He added that a special shale oil comparison would be made later in the presentation.

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Mr. Van Meurs noted that Canada had become more attractive. In 1997, the typical tax rate in Canada was 45 percent; since then both federal and provincial governments had substantially lowered the tax rate to 25 percent. Canadian provinces promoted progressivity in royalty formulas to encourage companies to move into higher cost resources. The federal and Alaskan government takes in the United States stayed the same. Canada had pulled ahead of the United States in terms of investors.

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Mr. Van Meurs concluded that a 10 percent drop in government take for new production was reasonable when compared to jurisdictions facing a declining production. He

concluded that the 60 to 65 percent government take for more costly "new" light oil resources as proposed in HB 110 and HB 17 was a reasonable level from an international perspective.

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Mr. Van Meurs spoke to heavy oil. He observed that Alaska was well endowed with heavy oil resources in two groups:

- Heavy Oil: 15 – 22 degrees API; and
- Ultra-heavy Oil or Bitumen: 8 – 15 degrees API.

The ultra-heavy oil (8 to 15 degrees API) could not be transported by pipeline or marine tanker and needed to be produced with special production methods. Heavy oil (15 to 22 degrees API) could typically be produced with conventional production methods, since oil flows to the wells. The oil could also be transported by pipeline and marine tankers.

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Mr. Van Meurs observed that Alaska has significant heavy oil in the 15 – 22 degrees API: West Sak, Schrader Bluff, Orion, Polaris, Nikaitchuq. Ultra Heavy Oil in the 10 to 15 degrees API was also in Alaska in large volume in the Ugnu deposits. Separate fiscal terms were required for the two groups.

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Mr. Van Meurs noted that heavy oil compared in North America to Alberta oil sands, at 43 to 55 percent government take depending on the oil price. In order to compete, the government take for ultra-heavy oil in Alaska had to be similar to Alberta. Alberta also had price progressivity. At $120 per dollar a barrel government take would be closer to 55 percent; and at $60 per dollar a barrel government take would be closer to 43 percent. Alberta was an immense economic investment opportunity with 500 billion of recoverable oil.

Co-Chair Stedman addressed the $500 billion barrels of oil in Alberta. Mr. Van Meurs stressed that there were 1,400 billion in-place barrels of reserves in the Alberta oil

sands. Current special steam injection technology was expected to recover 30 to 40 percent of in-place oil.

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Co-Chair Stedman queried the number of recoverable barrels in Alaska. Mr. Van Meurs replied that there were 5 billion barrels of recoverable oil in Alaska. He pointed out the level of competition with Canada with 500 billion barrels, which were comparable to the heavier oil in Alaska. Alaska was fortunate that $4 billion of the $5 billion was lighter, better quality oil.

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Senator Wielechowski queried the cost per barrel of oil in Canada and Alaska. Mr. Van Meurs replied that the operating and capital cost per barrel was approximately $30 per barrel of oil. He observed that $60 to $70 per barrel of oil was needed to be economic. He estimated that the cost per barrel in Alaska would be comparable but slightly more expensive with Arctic conditions. He stressed that there were unique problems related to the process and development in Alaska.

Senator Wielechowski asked the net present value rate of return for Canadian heavy oil versus Alaskan heavy oil. He questioned if government take, net present value, or internal rate of return should be considered in comparison to Canada. Mr. Van Meurs noted that his on shore studies, which were not yet published, would address the issue. He noted that investors look at all the criteria; all needed to be attractive.

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Mr. Van Meurs concluded that heavy oil in Alaska was better quality and could handle a higher government take 55 to 60 percent. Ultra heavy Oil had to compete with Alberta and should have lower government take.

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Mr. Van Meurs cautioned, that at that time, it was not known whether shale oil production would be possible in Alaska. There were large oil shale deposits at around 10,000 feet deep. Companies would have to create reservoirs

to produce the oil by "fracking" to make the oil flow to the well. The problem with shale oil was that different reservoirs had different fracking characteristics. Pilot projects would be required to identify whether reservoir characteristics were of a nature that would permit fracking and would result in a sufficient flow of oil to make shale oil economic. He stressed the importance for Alaska to identify, through pilot projects, whether shale oil was economic. Shale oil would likely be light oil.

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Senator French referred to development of fracking technology. Mr. Van Meurs acknowledged that fracking technology had improved but stressed that some rocks were not frackable. Clay would not fracture. He noted that it was difficult to predict whether shale would be frackable without pilot projects. Fortunately, much of Alaska's shale oil shale was located along the highway to Prudhoe Bay. He stressed that sufficient fiscal encouragement would need to be given due to the additional cost of pilot tests.

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Mr. Van Meurs reviewed slide 51, North American Wells. He observed that government take for shale oil in the United States was approximately 60 percent across all lands. Canada was the most attractive (40 percent). Shale oil would be more expensive in Alaska than in North Dakota or Wyoming due to difficult conditions and depth of reservoirs. He concluded that Alaska would need to offer governments take of under 60 percent.

Mr. Van Meurs, in response to a question by, Co-Chair Stedman, reiterated that the analysis used $80 per barrel of oil. The government take would drop slightly at $120 per barrel of oil due to regressive fiscal systems.

Senator Wagner asked how the calculations were derived. Mr. Van Meurs explained that they utilized contact with federal, state and private land managers to ascertain details of the terms. The fiscal terms for each jurisdiction were available in North American study.

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Senator Wielechowski questioned why undiscounted government take was used and asked if it was realistic. He asked if Alaska's discounted rate would be higher or lower [than other jurisdictions]. Mr. Van Meurs explained that his study used 10 percent discounted government take as well as undiscounted government take. Governments liked to compare on undiscounted government take because of long term cash flow. He stated that he would use a five percent government take rate for Alaska. Undiscounted government take was used for ease of comparison.

Senator Wielechowski asked if a discounted rate would be more appropriate with the credits offered by Alaska. There were large upfront costs to the state for exploration and development. Mr. Van Meurs affirmed and looked at slide 33, which showed that Alaska was the most favorable when compared for distribution of government take. He concluded that Alaska was looking at a government take of 45 to 55 percent in order to attract long term investment to Alaska (assuming the pilot tests demonstrate that shale oil was economical). He emphasized Alaska might have significant shale oil potential and emphasized the need to define and encourage large scale project testing and the immense importance to the state of Alaska to set terms.

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Mr. Van Meurs spoke to natural gas. The Pacific market was very competitive. Current major new LNG suppliers in the Pacific LNG market were Australia and Papua New Guinea. Government take was typically in the 45 to 52 percent range. He stressed that offshore and onshore conventional gas production in China was also significant. China had 1300 trillion cubic feet (Tcf) of coal bed methane gas and 1100 Tcf of shale gas and one-third of the unconventional gas resources in the world. China was actively developing resources with international companies. He emphasized that China might be an exporter not importer of gas. He cautioned not to rely on China as an importer. China's government take was unusually low at 42 percent for dry gas. China was purchasing companies experienced in shale oil development and training on an enormous scale. China also had the financial resources to develop the resource. He concluded that China was aggressively developing its large resources. There were some problems with Chinese production sharing contracts and bottlenecks with training.

He reiterated that Alaska should not count on China as an import nation in ten years.

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Mr. Van Meurs reviewed slide 54, Arctic Gas. The most interesting country on the chart was Russia with the Yamal Peninsula LNG project. The Yamal Peninsula project was similar to Prudhoe Bay with 40 Tcf of gas. Most of the shores were surrounded by six feet of packed ice and had shallow dredging. Russian government take for gas was 24 percent, the lowest in the world. The Russian company Novatek, with the help of the French company Total, planned to build ice breakers and LNG tankers to ship year around into Asian markets. In eight years, Russian tankers were anticipated to be through the Bering Straight to establish year around transportation across Arctic paid with by LNG.

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Mr. Van Meurs concluded Alaska would have to offer governments take in the range of 45 to 55 percent in order to be competitive for the production of gas; Prudhoe Bay might be slightly higher.

Mr. Van Meurs summarized that in order to be competitive; Alaska needed to develop a fiscal system that offered the following government takes for the various resources:

- Existing light oil production: 70 – 75 percent
- New light oil production: 60 – 65 percent
- Heavy Oil: 55 – 60 percent
- Ultra Heavy Oil: 45 – 55 percent
- Shale Oil: 45 – 55 percent
- Natural Gas – new gas fields: 45 – 55 percent
- Natural Gas – Prudhoe Bay: 55 – 60 percent

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Senator Paskvan referred to slide 37. He observed that the Department of Natural Resources forecasted an average decline rate at 2.1 percent from FY 10 - FY 20 in a letter dated 3/22/2012. Mr. Van Meurs had no opinion.

Senator Wagner returned to slide 39 and asked why Gabon, Trinidad and Tobago had recently reduced their terms on

government take by 12 percentage points. Mr. Van Meurs explained that there was an attempt to attract new investors. There were no investors prior to the drop in terms.

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ADJOURNMENT

2:29:25 PM

The meeting was adjourned at 2:29 PM.