ALASKA STATE LEGISLATURE
JOINT MEETING
SENATE RESOURCES STANDING COMMITTEE
SENATE FINANCE COMMITTEE
February 14, 2012
9:02 a.m.

9:02:33 AM

CALL TO ORDER

Co-Chair Stedman called the Senate Finance Committee meeting to order at 9:02 a.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 Wagoner, 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

Senator Cathy Giessel; Representative Alan Austerman; Dr. Pedro Van Meurs, President, Van Meurs Corporation, Consultant

ACTION NARRATIVE

9:02:33 AM

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

9:03:22 AM

Co-Chair Stedman discussed the meeting's agenda.

Senator Wagoner referenced the prior day's meeting, and requested clarification regarding $7.5 billion per year over current levels of investment. He wondered who should be providing that money, the producers or State of Alaska. DR. PEDRO VAN MEURS, PRESIDENT, VAN MEURS CORPORATION, CONSULTANT, stated that $7.5 billion can be easily calculated based on the difference between the decline curve and the 1 million barrels a day. He said that the calculation could determine how many new barrels needed to be produced. He stated that the new barrels needed to be derived from heavy oil, and he determined that the typical capital cost would be approximately $30 a barrel. Once one knows the total amount of capital expenditures required for the total volume over 25 years, one could arrive at the $7.5 billion. He stressed that when one makes the capital expenditures; there will be received tax and Petroleum Profits Tax (PPT) deductions. Senator Wagoner surmised that $7.5 billion was the gross amount. Mr. Van Meurs agreed. Co-Chair Stedman stated that there could be further explanation of the net amount later in the presentation.

9:06:33 AM

Mr. Van Meurs provided members with two PowerPoint presentations: Policy Options for Alaska Oil and Gas; and Addendum 2 to “Policy Options for Alaska Oil and Gas” (copies on file). He stated that Addendum 2 would address some questions from the prior day's meeting.

Mr. Van Meurs addressed slide 1 of Addendum 2, "Re-investment by major oil companies." He stated that slide 13 of the Department of Revenue (DOR) presentation indicates that major oil companies reinvested $1544 million in 2010 in capital expenditures. Comments:

- This is about $8 per barrel produced

- DOR includes capital maintenance expenditures and work overs in these capital expenditures
- It is likely that about $4 per barrel relates to these types of expenditures. These are non-discretionary. They have to be done to continue operations normally
- It seems that the remaining $4 per barrel is largely infill drilling with the goal of accelerating cash flow
- This $4 per barrel is about $1 on an after tax basis.
- It is therefore clear that the three major companies are “harvesting” at the maximum rate. During the last 5 years there was “near zero” interest in investments in new projects.

Mr. Van Meurs felt that the petroleum industry was in "harvesting mode."

Co-Chair Stedman requested an explanation of how one would receive an expenditure impact of one dollar when there was four dollars in the discretionary cost. Mr. Van Meurs replied that the four dollars discretionary capital expenditures would be a deduction for corporate income tax and Alaska's Clear and Equitable Share (ACES). He also stated that the four dollars would be eligible for the capital expenditures tax credit, so the one dollar would be the investment after taxes.

Co-Chair Stedman wondered who paid the leftover three dollars. Mr. Van Meurs replied that the State of Alaska and the federal government would contribute the three dollars through the reduction of income.

9:11:20 AM

Senator Stevens wondered if the depletion of oil would occur at a faster pace if there was an increase from 600,000 barrels a day to 1 million barrels a day. Mr. Van Meurs stressed that the maximum harvesting would be referred to as the maximum withdrawal of cash. He felt that the decline rate in Prudhoe Bay was not abnormal compared to other places in the world. He stressed that the physical decline rate of oil was technical. He pointed out that when he referred to "harvesting", he meant the "withdrawal of cash."

Senator Wagoner stated that currently, exploration was encouraged outside of the existing units on the North Slope by way of exploration credits. He wondered if there was a benefit to offering production credits. Mr. Van Meurs stated that production credits made sense. He furthered that Alaska was over-encouraging exploration, and there should be a balance between production and exploration.

Mr. Van Meurs discussed slide 3 of Addendum 2, "Investor impact of high marginal rates related to higher prices." There may be some confusion as to the impact on investors of high marginal rates related to higher prices. There is no direct impact of marginal rates on investment. Investments decisions are being made on the basis of the total average incremental Net Present Value (NPV) and Internal Rate of Return (IRR), not the marginal NPV or IRR. For instance, Pakistan has in their production sharing contracts a price cap of $100, and over $100 of all higher revenues go to the government. So the marginal rate is 100 percent. Yet, investments are taking place because the take below $100 is relatively modest and therefore the NPV and IRR are acceptable.

9:18:11 AM

Mr. Van Meurs displayed slide 4 of Addendum 2, "Investor impact of high marginal rates related to higher prices." There are two important impacts of very strong price progressivity: Strong price progressivity means that the average rates increase to higher levels under higher prices. In the case of Alaska this means that that Alaska will rapidly become less attractive than some of the main competitors with regressive systems, such as the Lower 48, Australia, Russia and Brazil. New investors will look negatively on very strong price progressivity because it removes the “upside” of the possible outcome of investments. This is a strong impediment for new investment. Even if price progressivity is less strong for new production, new investors will still evaluate how current producers are being treated by Alaska since this is an indication of the fiscal policy of the jurisdiction. For these reasons one would not recommend price progressivity that is too strong.

Co-Chair Stedman looked at slide 3, and requested an explanation of other mechanisms used when determining progressivity. Mr. Van Meurs replied that there were four

ways to determine progressivity: price, which is the tool Alaska used; profits; and costs, which is a tool that Norway uses.

Co-Chair Stedman, interrupted, and requested a definition of "uplift." Mr. Van Meurs replied that uplift meant was an extra deduction for tax purposes. He stated that it was not a credit against taxes; it was an extra deduction for taxes.

Mr. Van Meurs stated that there could also be a volume progressivity system.

Mr. Van Meurs continued to discuss slide 4. He stated that a benchmark should be determined by looking at the specific government interests.

9:24:42 AM

Mr. Van Meurs displayed slide 5 and 6 of Addendum 2, "Fiscal design criteria for Alaska." The slide indicated that, from an international perspective, a number of design criteria can be recommended in order to optimize fiscal terms for Alaska:

- Price progressivity should not be so strong that the price incentive index drops below $ 0.10. For ACES this level is reached at a price of about $ 190 per barrel
- Cost progressivity based on average blended costs should not be so strong that the cost savings index drops below $0.20. For ACES this level is reached at a price of about $180 per barrel (assuming $25 per barrel costs)
- Government take should not be uncompetitive: For Alaska it should not be higher than 75 percent. For ACES this is reached at a price level of about $90 per barrel. Exploration support: Government should not contribute more than 80 percent of the exploration costs through tax credits and tax deductions. For ACES this level is reached at $60 per barrel.
- Negative PPT: Whenever tax credits or uplifts are being provided the tax income on a consolidated basis could become negative. Sensitivity analysis should be done to ensure that negative PPT only occurs under unlikely conditions. He stated that ACES is deficient under certain high cost – low price conditions.

9:29:13 AM

Co-Chair Stedman requested a definition of "negative PPT." Mr. Van Meurs explained that the moment the government permits a significant deduction for tax purposes the government's income becomes lower. He added that if significant cost deductions were permitted, they would be deducted for PPT. He explained that PPT was a "consolidated tax" for all the oil fields in Alaska. He furthered that there could be a cross-subsidization situation or "negative PPT."

Co-Chair Hoffman wondered what the government contribution percentage would be under ACES at $120 a barrel. Mr. Van Meurs responded the government contribution would be approximately 93 or 94 percent.

Senator French wondered to what extent Alaska was over-stimulating exploration well credits. Mr. Van Meurs stated that it would depend on the number of exploration wells that were currently being drilled. He pointed out that even if there was only one exploration well, the state should not over-stimulate the one well. He stressed that there should be a balance between the development and exploration incentives. He stated that that balance does not exist in Alaska.

Co-Chair Stedman requested a further study of the credits, and implementation of the credits with the write-offs.

Senator Wielechowski referred to the prior day's meeting, and the topic of heavy oil exploration and development. He queried the point where there would be a zero PPT. Mr. Van Meurs stressed that a government take-away of 45 percent could not be achieved while maintaining PPT, and 55 percent was also very difficult. He explained that 60 percent could be achieved with a viable PPT, with certain precautionary measures. He furthered that if investors would not invest in heavy oil, there would be no other option but to remove the royalties.

9:35:48 AM

Senator Thomas looked at slide 2 of Addendum 2, and wondered what credits or deductions would be applied to the remaining $4 of the original $8 represented. Mr. Van Meurs

responded that the $4 was largely maintenance capital. He furthered that if the maintenance money was used for the replacement of facilities, the tax credits would equally apply to the replacement of facilities and original facilities. Therefore, there would be approximately a $1 net investment. He stressed that there would be a substantial tax reduction for the state on that first $4. Senator Thomas estimated that the State's take-away would be approximately 75 percent. Mr. Van Meurs agreed.

Co-Chair Stedman stated that the Addendum 2 was complete, and the committee would now address the Section 3 of the PowerPoint presentation, "Proposed terms for existing and new light oil."

Mr. Van Meurs discussed slide 57, "Overall framework for a new PPT." A new PPT should preferably be structured in such a manner that it deals with the following important issues: The current ACES system has serious deficiencies. A new PPT should remove those serious deficiencies; a new “architecture” for the PPT needs to be created to permit a greater variety of terms for the different oil and gas resources; and the system should be made simpler.

9:38:44 AM

Mr. Van Meurs displayed slide 58, "Overall framework for a new PPT." A new PPT should preferably be structured in such a manner that it deals with the following important issues:

- The current ACES system has serious deficiencies. A new PPT should remove these problems.
- A new “architecture” for the PPT needs to be created to permit a greater variety of terms for the different oil and gas resources.
- The system should be made simpler. He stated that an important other issue is complexity. The production tax is far too complex - The current complexity of the production tax is a strong disincentive for investment. It can be strongly recommended to review the tax to see what changes can be made to reduce complexity.

Mr. Van Meurs shared a personal experience regarding Repsol and their investment strategies and motivations.

9:43:38 AM

Senator French expressed concern with the idea of having seven different tax schemes for existing light oil, new light oil, heavy oil, ultra heavy oil, shale oil, etc. He felt there was a contradiction between the need for a simpler system and the request for seven tax schemes. Mr. Van Meurs responded that the seven different classes were very easy to understand.

Mr. Van Meurs looked at slide 60, "Deficiencies in the current ACES system." The current ACES system has five main deficiencies: PPT tax rates up to 75 percent in addition to 41 percent corporate income tax are too high to stimulate efficiency in operations. The price based sliding scales and result in a situation where under high prices the producer is actually better off with a lower price. The excessive tax credits result in a situation where Alaska may pay all of the costs of a well. The BOE concept results in a situation where new gas production could lead to massive losses of oil based revenues. Under marginal circumstances the ACES system actually creates a negative PPT, in other words the government will lose PPT on certain fields.

9:47:03 AM

Mr. Van Meurs discussed slide 61, "Deficiencies: Excessive Tax rates." The combination of the maximum ACES rate of 75 percent and the normal corporate income tax rate (state and federal) of 41 percent creates a combined tax rate of 85.25 percent under high prices. Such an excessive tax rate reduces significantly the incentive for companies to be efficient because they can only keep $0.1475 of every dollar saved. This means the cost savings index is only 14.75 percent. This is well below the cost savings index of most countries. Usually, it is recommended to have a cost savings index well over 20 percent. It should be noted that the combined tax rate of 85.25 percent is in addition to the regular royalties.

Mr. Van Meurs displayed slide 62, "Deficiencies: Excessive price progressivity." For ACES, at high prices, the combined tax rate becomes so high that there is the price incentive performance becomes very weak by international standards. This leads to lack of interest in achieving the highest prices on an arm's length basis and strong incentives to try to “transfer price”.

Mr. Van Meurs discussed slide 63, "Deficiencies: Excessive exploration support." Existing producers under ACES are entitled to the 40 percent tax credit as well as all normal deductions of the exploration expenditures. This means that at $111 per barrel, Alaska contributes 90 percent of the exploration costs. At $245 per barrel Alaska contributes 100 percent.

Senator French stressed that existing producers were not exploring new fields. Mr. Van Meurs understood, and added that current producers were in "extreme harvesting mode." He agreed that the existing producers were not focused on exploration. He felt that, from a design perspective, it did not matter that there was not much exploration. He explained that companies were needed to explore, produce, and act as normal companies. He felt that there needed to be a system that was rational and does not over-stimulate exploration versus development.

9:50:07 AM

Senator French stressed that existing producers could take advantage of the enormous subsidization of their exploration programs, but the producers were not. He wondered how that could be explained. Mr. Van Meurs responded that since there was no attraction for development, there was no incentive to initially explore. He stressed that if investment opportunities elsewhere were more attractive than Alaska, then the major oil companies do not feel the need to spend money on exploration. He remarked that the exploration credit was more attractive for smaller oil companies.

Mr. Van Meurs discussed slide 64, "Deficiencies: Nonsensical cross subsidization of gas." The BOE concept would result in massive government revenue losses on incremental oil production also gas would be developed. This does not make any sense. It is clear that Alaska would not accept such unnecessary losses. This in turn impedes gas project development.

9:54:43 AM

Co-Chair Stedman pointed out that DOR was expected to present the estimated numeric of the current dilution issue. He estimated that they would estimate approximately

$80 million per year, without a sale on gas. Mr. Van Meurs reiterated that he could not verify the numbers. Although, he stated that if there was a small amount of gas production on the North Slope, there would be a negative BOE-depending on the very low value that could be attributed to the gas. He stressed that a small amount of gas production contributes to significant losses. Co-Chair Hoffman felt that the slide should be titled "Decoupling." Mr. Van Meurs felt that the system did not need to be decoupled. Co-Chair Stedman felt that there were several methods to determine a solution.

9:58:28 AM

Mr. Van Meurs discussed slide 65, "Deficiencies: Negative PPT." By definition, for a marginal project the total negative ACES cash flow to government as a result of tax credits and tax deductions becomes almost identical to the positive cash flow. In other words, the net government receipts are low or even negative.

Mr. Van Meurs looked at slide 66, "Deficiencies: Negative PPT." With the existence of a tax credit, there are always economic conditions under which the government may lose more in credits and deductions than it receives in income. However, this effect should be minimized in the fiscal design. This is not done under ACES.

Mr. Van Meurs looked at slide 67, "Proposals for light oil." Proposals for light oil production will be discussed first, based on this discussion the variation for other resources can be introduced. He stressed that HB 110 had been introduced modify ACES.

Mr. Van Meurs discussed slide 68, "Proposals for light oil: HB110, Analysis: PPT rates." The bracketing procedure creates a significant lowering of the average PPT rates. The HB 110 N rates apply only for 7 years from the start of production for new production.

Co-Chair Stedman queried the difference between the market value of oil and the production tax value of oil. Mr. Van Meurs replied with slide 69.

Mr. Van Meurs pointed out slide 69, "Proposals for light oil: HB110, Analysis: Government take." At $100 per barrel, the government take from ACES would be 76.4 percent, HB 110

(Existing) would be 67.6 percent and HB 110 (New) would be 64.9 percent. He stressed that the proposal for existing production would be a significant drop in the government take.

Co-Chair Stedman surmised that Mr. Van Meurs recommended the undiscounted government take number top out at 75 percent. Mr. Van Meurs stated that there is no problem approaching 75 percent, but he would not recommend more than 75 percent. Co-Chair Stedman wondered if the bottom recommendation would be 70 percent. Mr. Van Meurs did not think it was unreasonable for new production to be 60 to 65 percent government take.

10:04:59 AM

Mr. Van Meurs, in response to a question by Senator Wielechowski, explained that the fiscal health situation should be subjected to different tests. He stressed that the degree of price progressivity and the average level of government take were two independent recommendations.

Mr. Van Meurs discussed slide 70, "HB 110: Existing Production." he observed that HB 110 proposal was complex and based on "bracketing". He stated that bracketing meant that the final average rate was based on the weighted average of all the brackets, which means the rate will never be 50 percent. He displayed this example:

< $30.00: 25.0 percent
< $42.50: 27.5 percent
< $55.00: 32.5 percent
< $67.50: 37.5 percent
< $80.00: 42.5 percent
< $92.50: 47.5 percent
> $92.50: 50.0 percent

Mr. Van Meurs displayed slide 71, "HB 110: New production." For new production, the rates will be lowered by 10 percent for the first 7 years of production. This means that new production has to be “ring fenced”. All production and all revenues and costs will have to be allocated to “existing” and to “new” production. He stressed that this is complex from an administrative point of view.

10:08:18 AM

Mr. Van Meurs discussed slide 72, "Deficiencies in HB 110." HB 110 deals with only two of the deficiencies of ACES:

- PPT tax rates up to 75 percent in addition to 41 percent corporate income tax are too high to stimulate efficiency in operations.
- The price based sliding scales and result in a situation where under high prices the producer is actually better off with a lower price.
- The excessive tax credits result in a situation where Alaska may pay all of the costs of a well.
- The BOE concept results in a situation where new gas production could lead to massive losses of oil based revenues.
- Under marginal circumstances the ACES system actually creates a negative PPT, in other words the government will lose PPT on certain fields. House Bill 110 deals with excessive price rate and progressivity

Mr. Van Meurs discussed slide 73, "Deficiencies in HB 110" In addition, HB 110 creates an entirely new problem. Specifying different tax rates for Existing and New Production requires tax payers to submit different tax returns for these two classes of production. This is called ring fencing. This in turn means that all revenues and costs need to be allocated to “existing” and “new”. This is complex to administer and could lead to significant revenue losses for the State. He explained that HB 110 does not specify how this process would have to take place, so HB 110 is not a viable alternative to ACES.

Mr. Van Meurs presented slide 74, "BOE complications." An important drawback of ACES is the BOE problem. This means that in case major oil companies would propose a new Alaska LNG export project to the Pacific, the entire fiscal system has to be revised again. This is an unnecessary obstacle to the introduction of a new gas project. It is therefore essential that in any revision of ACES this problem is also dealt with in advance. This would permit to add gas terms to the package later (or immediately) without having to change oil terms again. ACES does not resolve the BOE problem. A gas project would have to be started all over again.

Mr. Van Meurs displayed slide 75, "PVM Proposal: Existing and New Production." The PVM Proposal is going further than

merely creating new levels of government take for existing and new production. The proposal also creates a new “architecture” to which terms for heavy oil, shale oil and natural gas can be easily added, and the proposal resolves all the deficiencies associated with ACES.

Mr. Van Meurs discussed slide 76. He explained that HB 110 for New Production is equal to a much simpler concept, which is:

- 25 percent flat PPT
- 20 percent tax credit, plus a
- 2.25 percent severance feature

The severance tax feature is no different from the way the severance tax used to be calculated in Alaska. The severance tax is a percentage of the value of the gross production less the royalty. He provided the example: royalty of 12.5 percent and an oil price of $ 100, a 2.25 percent severance feature would be equal to: 2.25 percent * 87.5 percent * $ 100 = $ 1.96875 per barrel.

10:15:15 AM

Mr. Van Meurs discussed slide 77, "PVM Proposal for New Production." In order to make the severance feature match the government take of HB 110 for new production, the following price sensitive sliding scale is proposed:

- The sliding scale starts at an oil price of $60 per barrel
- Between an oil price of $60 and $180 per barrel, the severance feature would increase with 0.05 percent per dollar increase, reaching a value of 6 percent at $ 180 per barrel
- Thereafter, the sliding scale would increase 0.1 percent in order to reach a maximum of 15 percent at $270 per barrel.

Mr. Van Meurs looked at slide 78, "New 'architecture'." The PVM Proposal creates a new “architecture” which is not BOE based. The severance feature is simply gross revenue based for oil (after the royalty) and therefore it does not apply to gas. As a result PPT revenues from oil remain the same if also gas is produced. This solves a major deficiency of ACES. Also excessive exploration support is eliminated

because it is proposed to limit tax credits to 20 percent and not increase tax credits to 40 percent for certain exploration expenditures, and by creating a maximum PPT tax rate of 25 percent and corporate income tax rate of 41.1 percent, for a total maximum of 55.75 percent.

Mr. Van Meurs displayed slide 79, "PVM Proposal for New Production." The PVM proposal results in almost exactly the same government take as HB 110 for new production for the entire price range from $60 to $160.

Senator Wielechowski wondered if the proposals would apply to heavy oils within the legacy fields Mr. Van Meurs replied that he would later present his modifications for existing, heavy oil, and gas.

Mr. Van Meurs addressed slide 80, "PVM Proposal for New Production." The main advantages of the PVM Proposal are:

- Much easier to administer
- Can be consolidated with existing production, so no need for ring fencing an “architecture” which permits other resources to be added to the fiscal terms No excessive tax rates, in fact a combined rate of 55.75 percent.
- No excessive price progressivity
- No excessive exploration support
- No nonsensical cross subsidization of gas based on BOE values
- Reduced negative PPT characteristics

Senator French wondered if there would be an explanation for how to avoid ring-fencing by using a decline curve method. Mr. Van Meurs stated that he would show that in a later slide.

10:20:16 AM

Mr. Van Meurs discussed slide 81, "Alternative Proposal for Existing Production." He stated that it is now easy to add a proposal for existing production. Terms for existing production could be close to the current government take levels of ACES. It is not necessary to give up significant revenues. Existing production terms could also be based on:

- A flat 25 percent PPT

- 20 percent tax credits
- A severance feature starting a $60 with 0.2 percent increases per dollar increase in price up to $130 per barrel and from there 0.1 percent up to a maximum of 20 percent

Mr. Van Meurs displayed slide 82, "All Proposals for Existing and New Production." The PVM Proposal for existing production would be result in a much higher government take than HB 110 for existing production. The PVM proposal for new production is about equal to HB 110 for new production.

Mr. Van Meurs discussed the Department of Revenue's ACES Tax Report from 2011. He pointed out that the long-term forecast, and remarked that if there was no accounting for extra layers of oil, then the decline would be 5 percent per year. He stressed that there were about 625,000 barrels per day. He noted that there were significant decline forecasts. He stressed that DOR only considered new production when determining forecasts. He felt that there were discrepancies based on all production versus existing production.

Mr. Van Meurs looked at slides 83 and 84, "Old and New Production." He stated that HB 110 does not determine how to distinguish between new oil and existing oil. It is proposed to use the following methods:

1. Decline curve method. With the decline curve method Alaska would establish the average production for each company in 2011. An exponential decline curve would be established per company. For instance one could use 6 percent per year for all companies for light production. Any production over the decline curve per company would qualify as “new”. The main advantage of the method is that is goes to the essence of the problem in Alaska. It also strongly stimulates investment by new companies. It is easy to administer. The main disadvantage is that existing companies may be rather differently affected. Therefore, this method needs to be complemented with other options.

2. New non-producing lease method. Another simple method is to consider “new” production, as production from leases which were not in production prior to December 31, 2011. The main advantage of the method is that it is easy to administer and is a well-established international

practice. It would encourage new investment in new leases with fields which maybe more expensive.

3. New approved program method. In principle it is possible for existing producers to make specific comprehensive proposals to the Alaska Government for new investments that will increase production from existing fields. This would relate to programs that would be in excess of ongoing investments.

10:29:08 AM

Mr. Van Meurs displayed slide 85, "Old and New Production." These programs could include:

- The drilling of new more expensive deeper or shallower reservoirs,
- Enhanced recovery projects
- Horizontal well drilling projects in thin reservoirs,
- Extensive new infill drilling beyond current rates, or
- Any application of new technology

He stated that DNR would establish the base line production above which production would be considered “new” on a year by year basis, based on reservoir and other studies.

Senator Wielechowski wondered what the state's fiscal impact would be from Mr. Van Meur's proposal over the next five years. Mr. Van Meurs replied that compared to HB 110, his proposal would allow for significant retention of revenue. Although, compared to ACES, some revenue would be lost.

Senator Wagoner looked at slide 56, and wondered if there was any reason why there was not a combination of the resources of the same percentage levels. Mr. Van Meurs replied that he would later explain his different conclusions for gas, heavy oil, and shale oil.

Co-Chair Stedman discussed housekeeping.

ADJOURNMENT

10:34:17 AM

The meeting was adjourned at 10:34 AM.