ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE
KENAI, AK
October 20, 2011
9:10 a.m.

MEMBERS PRESENT

Senator Joe Paskvan, Co-Chair
Senator Thomas Wagoner, Co-Chair
Senator Bert Stedman
Senator Lesil McGuire - via teleconference

MEMBERS ABSENT

Senator Bill Wielechowski, Vice Chair
Senator Hollis French
Senator Gary Stevens

OTHER LEGISLATORS PRESENT

Senator Cathy Giessel
Representative Mike Chenault
Representative Paul Seaton

COMMITTEE CALENDAR

Overview: Updates on Cook Inlet production
Cook Inlet Tax System
Railbelt Energy Needs
Marathon Oil

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to consider

WITNESS REGISTER

BRUCE TANGEMAN, Deputy Commissioner
Tax Division
Department of Revenue (DOR)
Juneau, AK
POSITION STATEMENT: Presented "An Overview of Cook Inlet Production Tax Structure and Incentives" to the committee.

JOE GRIFFITH, President
Alaska Railbelt Cooperative Transmission and Electric Company (ARCTEC)
Anchorage, AK
POSITION STATEMENT: Provided ARCTEC history and Railbelt energy needs perspective.

WADE HUTCHINGS, Asset Manager
Marathon Oil Company Alaska
Anchorage, AK
POSITION STATEMENT: Provided overview of Marathon's Cook Inlet production activities and development philosophy.

PAUL ABOKHAIR, Sr. Commercial Advisor
Apache Corporation
POSITION STATEMENT: Provided overview of Apache's Cook Inlet activities.

BRUCE WEB, Vice President
Escopeta Oil Company
Anchorage, AK
POSITION STATEMENT: Related Escopeta's rig transit to Alaska.

VLADIMIR KATIC, Alaska Project Manager
Escopeta Oil Company
Anchorage, AK
POSITION STATEMENT: Provided an overview of Escopeta's development activities in Cook Inlet.

ETHAN SCHUTT, Sr. Vice President
Land and Energy Development
Cook Inlet Regional Inc. (CIRI)
Anchorage, AK
POSITION STATEMENT: Provided overview of CIRI's proposed underground coal gasification (UCG) project in Cook Inlet.

PAUL THOMSEN, Director
Policy and Business Development
Ormat Technologies, Inc.
Anchorage, AK
POSITION STATEMENT: Provided overview of geothermal development and an update of Ormat's Mt. Spurr geothermal project.

RAHM ORNSTEIN, Director
Business Development
Mount Spurr project lead
Ormat Technologies, Inc.

Anchorage, AK
POSITION STATEMENT: Answered questions about Ormat's geothermal development at Mt. Spurr.

DARREN MEZNARICH, Manager
Cook Inlet Assets
ConocoPhillips Alaska, Inc.
POSITION STATEMENT: Commented on ConocoPhillips' Cook Inlet activities and its Kenai LNG facility in particular.

ACTION NARRATIVE

9:10:41 AM
CO-CHAIR THOMAS WAGONER called the Senate Resources Standing Committee meeting to order at 9:10 a.m. in Kenai. Present at the call to order were Senators Stedman, Paskvan, and Wagoner.

9:12:03 AM
CO-CHAIR WAGONER invited Mr. Tangeman from the Department of Revenue to explain the Cook Inlet tax system.

BRUCE TANGEMAN, Deputy Commissioner, Tax Division, Department of Revenue (DOR), presented "An Overview of Cook Inlet Production Tax Structure and Incentives" to the committee. He explained that Cook Inlet production tax is the lower of Alaska's Clear and Equitable Share (ACES) and the Economic Limit Factor (ELF). ELF on oil production is zero, so no production tax is paid on oil. The ELF ceiling generally limits tax on gas to an average of $0.177 per mcf. He provided a sample tax calculation on Cook Inlet gas under both ACES and ELF and reviewed the numbers for the committee (slide 3). He said the taxable gas in BTU equivalent barrels of oil is set currently in statute at a ratio of 6:1 and that result is the number at which the base rate is calculated with progressivity kicking in at over $30 a barrel.

9:13:58 AM
SENATOR STEDMAN remarked that the values in his example are so elementary that they don't accurately reflect how the tax actually affects the state treasury, and that other issues are involved like credits and dilution for produced oil. Cook Inlet was originally ring-fenced and special credits were established to stimulate development there; a year ago they even added a "Wagoner Hail Mary." The state knows it's going in the right direction, but accurate feedback is needed in terms of the treasury.

MR. TANGEMAN said he agreed that the example is elementary, but he had to start somewhere and he was given a half hour to discuss this. He said he would get a lot more detailed in future discussions.

9:17:03 AM
SENATOR STEDMAN said it would be nice if he not only integrated the oil and gas tax structure within Cook Inlet but the Arctic tax structure as well and see how they come together - and look at successes and failures under the current tax structure and credits to consider for potential modifications.

REPRESENTATIVE CHENAULT said he had some of the same concerns as Senator Stedman and he thought the public should be able to see the tax before ACES and after ACES, when the oil tax was increased 700 percent, and consider how that change impacted investment in the state of Alaska.

9:20:05 AM
CO-CHAIR WAGONER said this hearing was to get a capsulation of what is going on in Cook Inlet. He asked Mr. Tangeman to show the disparity between the tax structure on the North Slope and the Cook Inlet where subsidization is going on. He asked what would happen if the ratio at today's prices - North Slope oil at $110 and gas at $3.78 - were used.

MR. TANGEMAN replied that a significant difference is obvious because the price of oil went up and the price of gas went down. But the statute currently says 6:1 and that is what has to be used.

CO-CHAIR WAGONER asked if he thought the ratio was significantly past 20:1 or 25:1.

MR. TANGEMAN replied "perhaps."

9:22:09 AM
MR. TANGEMAN next walked through the following production tax credits that are available to Cook Inlet explorers and producers: the qualified capital expenditure credit (AS 43.55.023(a)), the carry-forward loss credit (net operating loss credit .023(b)), the well lease expenditure credit (.023(l)), the small producer credit which is based on amount of production (.024(c)), the alternative credit for exploration (.025), the jack-up rig credit (.025(l)) and the gas storage facility credit that is taken against corporate income tax rather than production (AS 43.20.046).

9:24:11 AM
He explained that the AS 43.55.023 (a)(1) and (2) credits are for qualified capital expenditures up to 40 percent; Subsection (b) is the 25 percent carry forward annual loss credit. The 40 percent credit for well lease expenditures, for the Cook Inlet only, is under AS 43.55.023 (l)(1). It's 20 percent for north of 68 degrees latitude. AS 43.55.024 is the small producer credit for up to $12 million based on average daily production. Production is pro-rated to zero from 50 to 100 million barrels/day; the credit goes away after 100 million barrels/day; it can only be applied against tax liability and cannot be cashed in or carried forward.

9:25:18 AM
AS 43.55.025 is the alternative tax credit for oil and gas known as the exploration tax credit. Eligibility is either 40 percent outside 10 miles of an existing boundary or 30 percent if it's inside. In order to be eligible for this tax credit certain information has to be turned over to the Department of Natural Resources (DNR).

9:26:14 AM
AS 43.55.025(l) is the Cook Inlet jack-up rig credit that was enacted a few years back. It is eligible to the first three unaffiliated persons using the same jack-up rigs that drill an offshore exploration well. The credit is 100 percent, 90 percent and 80 percent for the three wells; $67.5 million is available for the three wells and there is a 50 percent repayment requirement if exploration activity turns into production.

9:27:00 AM
SENATOR STEDMAN stated that the legislature had put $67.5 million in this year's budget to be available for this credit.

CO-CHAIR WAGONER asked if it wasn't used this year, would it be reappropriated.

SENATOR STEDMAN replied no; it would roll forward for next year.

MR. TANGEMAN said AS 43.20.046 is the Cook Inlet tax storage credit that is applicable against the state's corporate income tax. It's equal to $1.50 per million cubic feet (mmcf) for working gas storage capacity up to the lesser of either $15 million or 25 percent of start-up costs. The facility must have working gas storage capacity of at least 500 million cubic feet and a withdrawal capacity of 10 million cubic feet per day.

9:29:46 AM
SENATOR STEDMAN asked for a rundown on the royalties. He didn't want folks to get the impression that zero revenue is coming into the treasury from the Cook Inlet Basin.

9:30:16 AM
MR. TANGEMAN replied that the royalty is handled by the DNR, and it is set at 12.5 percent.

9:31:30 AM
REPRESENTATIVE SEATON asked him to explain the corporate income tax on gas storage.

MR. TANGEMAN responded that credit is for the owner/operator of the storage facility itself and it would go against their corporate income tax.

9:33:42 AM
At ease from 9:33 to 9:34 a.m.

9:34:37 AM
CO-CHAIR WAGONER invited Mr. Griffith to review Railbelt energy needs for the committee.

JOE GRIFFITH, President, Alaska Railbelt Cooperative Transmission and Electric Company (ARCTEC), said the cooperative was created about a year ago on the ashes of the Greater Railbelt Energy and Transmission Corporation (GRETC) bill that didn't go anywhere. Five of the six Railbelt utilities got together and created a Railbelt Generation and Transmission Cooperative and called it ARCTEC. ARCTEC received a $56 million grant from the legislature for which they are very thankful.

MR. GRIFFITH said ARCTEC has a plan that can easily be called the Railbelt Energy Plan; it's a derivative of the Railbelt Integrated Resource Plan that the Alaska Energy Authority (AEA) started three or four years ago. About five years of effort went into earlier versions.

He explained that the Southcentral Power Project is a Chugach Electric and ML&P partnership; it is being built at the Chugach headquarters site. The Eklutna Generation Station Project is the Matanuska Electric (170 mgw) Plant to be built at the Eklutna site, the old power house site for the original Eklutna hydroelectric project. Battle Creek is near Bradley Lake and the intent is to divert 30,000 mgw hours-worth of additional water

into Bradley Lake. It hasn't received a full go-ahead as yet, but money has been placed on it and people are working today. The good news is that no one has found any fish in the area that affects the diversion. It's probably a $30 million project and $3 million to $5 million has gone into it so far.

He said there are several transmission projects but the whole transmission system is very confusing so he wouldn't go into great detail. Two transmission lines run from Fairbanks to Healy; one was funded by AEA and the second one has been there "an eternity" and was built to provide a path to get the 25 mgw of the Healy coal site up to Fairbanks. The Alaska Intertie runs from Healy to Teeland; the portion from Teeland to Willow belongs to NEA and is under lease to AEA (this is one of their two large successes - Bradley Lake is the other one).

9:39:38 AM
In the Railbelt, the geothermal project is proceeding with one additional well. Fire Island, 17 mgw of wind power, just went before the Regulatory Commission of Alaska (RCA); Chugach has agreed to take that power with Matanuska Electric taking 15 percent. The price is not finalized, but it looks like it's in the $90 to $95 mgw/hour range. The Eklutna generation site is Matanuska's project about six miles down the road from the existing Eklutna hydro. South Anchorage is a Chugach and ML&P joint effort. There are several Interties that come from Beluga around the Inlet; one that crosses the Inlet to Elmendorf Air Force Base and one that comes from Bradley Lake up across to Homer up to Nikiski over to Quartz Creek and all the way back into Anchorage. It's a weak system, Mr. Griffith emphasized, but a very important one, because they are the means by which power gets delivered to the people of Southcentral Alaska.

MR. GRIFFITH said the $56-million appropriation from last year is a major factor in upgrading the system. They are going to upgrade from Nikiski to Quartz Creek and from Quartz Creek up to the University segment. Another project is the Cook Inlet Gas Guttering System (CIGGS) remodel that changed a fitting between Nikiski and Tyonek so gas could be moved in either direction. It will require some compression and the compressors are not in yet, so it's not fully usable now. Unfortunately, he said, the major delivery to Anchorage comes from the 20 inch line from Beluga up to Palmer and around the corner and back down to ML&P plant 2. The bulk of the state's population is on that 20 inch line.

He said that Golden Valley is doing 25 megawatt wind power project at Eva Creek and is considering importing North Slope LNG to Fairbanks by truck. That will be a difficult project, but it will deliver energy at less than what Golden Valley is paying today and the price of energy in Fairbanks is a problem for everybody.

MR. GRIFFITH said everyone believes LNG importation will happen, because Alaska can't get its resources on line, barring some really good production out of Cook Inlet, in time to solve the utilities' gas problem.

9:43:53 AM
He related that Watana hydro on the Susitna River about 125 miles upriver from Talkeetna is a facility AEA is working on. ARCTEC is supporting it, but does not have an active role other than going to the meetings and providing advice. Just yesterday, AEA finally got around to asking how much the utilities would require out of Watana when and if it is produced and ARCTEC will be providing that answer soon.

The Intertie Management Committee is the group that is defining the operation of the Interties. It will be in place within 60 days and will replace the old Intertie Operating Committee that operated the Alaska Intertie from Douglas/Teeland up to Healy. Most of the work on it has been done and it awaits approval by the Alaska Industrial Development and Export Authority (AIDEA) board. He didn't see any difficulty at this time.

MR. GRIFFITH said he meets with the AEA's project people periodically and talks about what is under way and how the energy situation can be improved. A Bradley Lake Project Management Committee, made up of the managers of the utilities, has been in place since Bradley Lake was born and it has worked well.

9:46:06 AM
REPRESENTATIVE CHENAULT asked who owns the Interties.

MR. GRIFFITH replied that the State of Alaska owns Healy to Douglas, NEA owns Teeland to Douglas, Chugach owns University to Quartz Creek (under the Bradley Lake agreement), Homer owns Quartz Creek all the way to Bradley Lake except the portion that was built with Bradley Lake money (under an agreement). As long as Bradley Lake is there Homer has to move the power over, a real benefit to Homer, because no matter what they do they get energized.

He said that the Alaska Intertie Agreement is the current agreement under which the utilities operate the Interties, and while some don't think that is a big problem, it really is. It's a coordination issue to ensure that, first, the most efficient energy is on line at all times and, second, that you have all the reserves you need, because a blip anywhere on the system can cause the whole system to break down. That last happened in 1989 and it took five days to put back together.

He related that they work together on legislative efforts that will be brought to the legislature through AEA next year and he forewarned them that they will see an awful lot of Intertie requests, because that is one of the weakest portions of the system today.

He said ARCTEC is working with a number of independent gas explorers and has talked to everyone on Cook Inlet and that Enstar is building the Cook Inlet Natural Gas Storage Alaska facility (CINGSA). ARCTEC is also working on LNG importation and jointly on crisis plans and exercises. Everyone believes this will be the most difficult year to face, because CINGSA isn't on line and the gas supply with the LNG plant shut down will be less. When a cold snap comes "it will take some tight management to get us through that."

9:49:49 AM
MR. GRIFFITH stated that Cook Inlet exploration is their alternative fuel and if AGIA goes forward, a spur line off of Delta Junction or Glennallen is pretty much a given. A bullet line is being pushed by the ASAP folks; LNG importation is being looked at as well as propane. In fact, he has asked the producers of the engines he will put in the Eklutna site to run some tests on burning of propane - first, because it's a wonderful backup and, secondly, because he can buy it cheaper than he can buy diesel fuel. The last resort is burning diesel, and any of the plants that have a supply and the fuel nozzles fixed can burn diesel. ML&P plant 2 has a dual fuel capacity and the Eklutna gas generation site will also have dual fuel capabilities.

9:50:08 AM
He said that gas is exceptionally important to members - he always says that heat and light are not optional in Alaska - and the electrics have to protect the gas system, because they are the ones who can shut people off and reduce the demand. The gas deliverers have little capability to do that and the worst thing

that can happen is to let the gas system decline to the point that it fills up with air and the pilot lights go out; it takes months to repair. For a serious gas shortfall they would plan to do rolling blackouts.

MR. GRIFFITH said that electricity greases the economy and he related how in one of the big outages last year the MTA system went down because the generators at the various sites ran out of gas, and people became really incensed that they couldn't communicate with anybody. Electricity is important and it's important to the gas system. So, first priority has to be the gas system and they always like more supply if they can get it.

Unfortunately the ASAP line will not come in time to solve the immediate problem, so something has to be done soon and Enstar has taken a step. If reliable, Cook Inlet supply can be accomplished and that would be wonderful. But in the meantime quick permitting is needed as well as incentives for drilling. And he didn't see any way out of importing LNG. He provided a comparison of Cook Inlet retail energy prices and reviewed those figures (slide 7).

9:53:43 AM
He didn't touch on any of the bigger Southeast energy issues saying they have good interties and hydro facilities. Other folks in the Bush have their own problems and challenges.

CO-CHAIR PASKVAN asked if LNG imports from the North Slope in the comparison are intended to be tanker transport.

MR. GRIFFITH replied no; Golden Valley was looking at using 40 trucks per day.

CO-CHAIR WAGONER introduced several people in the audience: Harold Heinze, Alaska Natural Gas Development Authority (ANGDA); Brad Janorschke, Homer Electric; Joe Gallagher, Homer Electric; Dan [indisc.] ExxonMobil; David Hall, [indisc.] and Jeff Logan, lobbyist.

10:29:43 AM
Recess from 9:56 to 10:30 a.m.

10:29:43 AM
CO-CHAIR WAGONER called the meeting back to order and mentioned a two-page handout from Harold Heinze, ANGDA CEO, and that he wouldn't do a presentation.

WADE HUTCHINGS, Asset Manager, Marathon Oil Company's Alaska Business, said Marathon has a rich company history and a rich history of exploring for and producing gas in Alaska. The company recently completed a major corporate transformation where they spun off their entire refining, marketing and transportation business into a stand-alone company now known as Marathon Petroleum Corporation. The remaining entity, Marathon Oil Corporation, is now an independent oil and gas exploration and production company still headquartered in Houston, Texas, with worldwide operations. They have a new logo and competitors, but have the same enduring commitments to safe, clean and responsible operations.

10:32:15 AM
He said there have been several very positive changes in the oil and gas investment environment in the Cook Inlet. The first are Cook Inlet tax reforms and then the several process improvements at the RCA. The tax reforms have allowed Marathon to make its projects more competitive on a global scale and to continue to access investment knowledge for the corporation. They compete for capital within their own company with projects all over the world.

MR. HUTCHINGS said the process improvements within the RCA have created much better stakeholder alignment and timeliness of decisions, which has been critical in helping Marathon plan its business better. Most of these changes have come directly from legislation or via legislative support and he thanked them for the work they had done to make the changes. He also noted they were pleased to see recognition within the DNR of the continued need for streamlining of the regulatory process, because a predictable and transparent regulatory and fiscal regime is critical in continuing to attract investment dollars to the state and to Cook Inlet.

He said that Marathon has frequently said they see a Cook Inlet supply/demand cross-over point sometime in the next two to three years. Certainly increased exploration, development and storage capacity can potentially offset that balance for several years, but a focus on assuring sufficient supplies of natural gas both internal and external for the Basin is a necessary and responsible approach.

Marathon's base business in the Cook Inlet remains strong and they remain committed to investing there Mr. Hutchings said. In 2010 they averaged gas sales of $104 mmcf/day, which represents roughly 34 percent of total Cook Inlet gas sales.

10:35:11 AM
The primary objective of their Alaska business is meeting the contractual gas sales commitments to their company. Their other primary objectives are operating in a safe, clean and responsible manner and ensuring that their assets produce competitive returns. Meeting their current and anticipated future contractual commitments requires investment on their part in maintenance and new equipment to keep wells and fields producing reliably, particularly during the winter months' peak demand.

Given the supply/demand balance, Marathon recognizes opportunities to develop additional resources and capture incremental gas sales. Their capital investment plan reflects a take that is fairly in line with their recent investment history. These investments will be in many forms: drilling new wells, going after deeper or new targets and drilling additional development wells within their fields and trying to add productive capacity within the well base they currently have.

MR. HUTCHINGS said the investment Marathon has made in its Kenai gas storage continues to be a critical component of their operating model. The DNR has listed this storage with a volume of 60 bcf with a deliverability of 60 mmcf/day. This storage capacity has been an important part of their operational ability to both contract and meet winter peak gas sales. Provided regulatory clarity is maintained they plan to continue to invest in and utilize this gas storage.

Marathon also plans to continue to invest in their people and their local communities. Over 90 percent of their Alaska-based employees are Alaskans and while some of their technical staff have relocated to North Dakota, Texas and other places, those individuals are being replaced with mostly local people.

He reported that Marathon is very pleased with the strides its team has made to operate safely and cleanly and recently went 18 months without a reportable injury by both Marathon and its contractors. They also continue to see important improvements in their ability to limit, and even eliminate, minor spills to the environment, and he said Marathon will continue being actively engaged in the communities they live in.

10:37:51 AM
MR. HUTCHINGS said state government needs to strike a balance between two very important objectives, meeting Southcentral

Alaska's energy demands and encouraging a vibrant Cook Inlet in an exploration and production environment. In addition to the potential for resources and regulatory and fiscal certainty, investment in exploration and development requires a high degree of market certainty.

Historically the upward limit of market availability has inhibited robust natural gas exploration and development. The reality is that projects like the Alaska Stand Alone Pipeline (ASAP) introduce new uncertainty for producers in the Inlet regarding the future of the gas market there. The implications for the local consumption market, which is estimated to be around 90 bcf/year, are important to this discussion. It's probably stating the obvious that a pipeline like ASAP will require significant long-term contracts to be viable. And it's not a stretch that such contracts could likely tie up all the uncontracted future local market in the Inlet.

10:39:19 AM
The throughput capacity of ASAP is roughly 180 bcf/year, and they question whether this volume will be sufficient particularly on a monthly seasonally adjusted basis to sustain or create industrial consumption centers similar to past Cook Inlet gas lines. They also ask questions around what impacts a project like this would have upon market price for gas within the Inlet, which at the end of the day, really is the underpinning of resource development there.

MR. HUTCHINGS concluded saying that these are complex issues, but a lack of certainty in these areas creates uncertainty for long term gas exploration and production projects. It's clear that these kinds of solutions create an environment with a very small industrial gas consumption market and a situation where nearly all of the local market is tied up in long term contracts. Then there is little incentive for future Inlet gas exploration and development. He encouraged all parties to work on solutions for ensuring that local demand is met particularly during the peak winter months and that a robust Cook Inlet exploration and production environment continues to exist.

REPRESENTATIVE SEATON asked if Marathon has discussed this issue before or has it just come up.

MR. HUTCHINGS answered that generally speaking it hasn't been a significant part of their current day-to-day operational discussion, but he brought it up today in the broader picture of

future projects when they would want to be available to sell gas in the Inlet.

CO-CHAIR PASKVAN asked if their long term plans are affected by export potential.

MR. HUTCHINGS replied that generally speaking with the pace of their investments over the past couple of years and the pace they plan on continuing, those kinds of considerations have significant impacts.

CO-CHAIR WAGONER, finding no further questions, thanked him for his testimony.

10:43:44 AM
At ease from 10:43 a.m. to 10:47 a.m.

10:47:27 AM
CO-CHAIR WAGONER invited Mr. Abokhair to give his presentation on Apache's Cook Inlet activities.

PAUL ABOKHAIR, Sr. Commercial Advisor, Apache Corporation, said they are a new comer to Cook Inlet and right now they have about 3 billion barrels of oil equivalent (BOE) reserves and have produced 732,000 BOE/day for 1Q2011. They operate in six areas of world: they are the largest producer in Egypt's Western Desert, they are with the EnCana joint venture in Canada's Horn River Basin; they are the fourth largest producer in the Gulf of Mexico (number one in shallow water), the second largest producer in Texas, the seventh largest in Argentina, the third largest in UK North Sea and the third largest in Australia's Carnarvon Basin.

Apache's mission is to grow a profitable global exploration and production company in a safe and environmentally responsible manner for the long term benefit of their shareholders. They are committed to transparency of their operations and to the environment.

10:49:05 AM
MR. ABOKHAIR said their International New Ventures Group is in charge of the Cook Inlet project. They became the largest acreage holder in Cook Inlet with more than 800,000 acres.

CO-CHAIR WAGONER asked him if that acreage is all on state land since Alaska has a 500,000 acre restriction and if the other 300,000 acres is non-state holdings.

MR. ABOKHAIR answered "correct" and that the restriction will not apply to privately held land. The way they intend to acquire more leases in the future is by taking part in existing units and on privately-held CIRI and Tyonek lands and other nations' land where the restriction does not apply. Their main focus is oil and they believe Cook Inlet has a lot of potential that hasn't been tapped yet. The Inlet has very limited 3D seismic, so their biggest concentration now is on conducting a full Cook Inlet 3D seismic operation in the next few years; it covers both onshore and offshore acreage. He stated they intend to operate here for 25 or 30 years and that they have applied for permits in "the left area [of Cook Inlet]" as he indicated on slide 7.

MR. ABOKHAIR said they will use a wireless seismic nodal system that has minimal environmental effects for onshore seismic. The nodes weigh about five pounds each and are buried in the ground and can't be seen. He said the information can be shared with other operators "under certain conditions, of course."

10:53:41 AM
For offshore operations another new technology nodal system will be used with nodes that look like half a barrel of oil and weigh 65 lbs. each. Like the onshore nodes, they are powered by rechargeable batteries. They are connected by a small tether and get dropped off by boats to lie at the bottom of the sea. These nodes are listening devices and have no transmitters just like the onshore ones. Basically, an explosion is set off, the nodes pick up the sound and the information gets downloaded. Currently they are using about 6,000 nodes for onshore operations and about 2,000 for the offshore.

10:55:35 AM
He said the biggest hurdle right now is the permitting of operations. Their timeline is aggressive and they are on schedule for finishing in three years.

10:58:53 AM
REPRESENTATIVE CHENAULT asked how the subsea seismic nodes will be shot.

MR. ABOKHAIR replied they will use onshore detonations for shallow water, but in deep water they will use an air gun in the water.

CO-CHAIR WAGONER, finding no further questions, thanked him for his presentation.

11:00:42 AM
Recess from 11:00 a.m. to 1:30 p.m.

1:30:50 PM
CO-CHAIR WAGONER invited Mr. Web to present Escopeta Oil's update on Cook Inlet activities.

BRUCE WEB, Vice President, Escopeta Oil Company, said he was born and raised in Alaska and spent 13 years at the Department of Natural Resources (DNR) in Permitting and Compliance. When he retired from the state he went into private consulting and to work for Aurora Gas in the Cook Inlet for about five years. Once the jack-up rig got close to Alaska he jumped ship and went to Escopeta.

VLADIMIR KATIC, Alaska Project Manager, Escopeta, said he is a petrochemical engineer with 40 years of experience in world-wide drilling and production and now he is in Alaska.

1:32:11 PM
MR. KATIC said their presentation would be in two parts. Mr. Web would talk about the rig's transit to Alaska and he would give a presentation on how Escopeta will develop gas and oil with accelerated development for gas.

1:32:31 PM
MR. WEB said the rig left Galveston, Texas, on March 18 for the beginning of its three-month voyage to Nanaimo, British Columbia (BC), where he became more involved with the project. The rig was too big to go through the Panama Canal, so it had to go around the tip of South America. It was actually welded to the boat and when it hit rough seas in the southern Gulf of Mexico it had to pull over in Uruguay for repairs. That resulted in extensive leg inspections while in British Columbia. The rig finally arrived in Kachemak Bay, Alaska, on August 7, five months after it left Galveston.

1:36:56 PM
MR. KATIC remarked if it wasn’t for the state's incentives this rig would not be in Cook Inlet. It would be too expensive for little guys especially. It will aid Escopeta in finding oil and gas in the Kitchen Unit under four scenarios:
1. outrigger caisson
2. subsea
3. two-deck platform
4. 3-deck platform

The outrigger caisson can be installed with the jack-up rig. It is 14 ft. in diameter and similar to one leg for the Osprey Platform; it has a six well capability and a deck with heliport and emergency quarters. The caisson structure could be fabricated in Anchorage, Vancouver, Washington or the San Francisco Bay area. The caisson would be towed to Cook Inlet.

1:41:01 PM
CO-CHAIR WAGONER remarked that they could be fabricated in Kenai and Nikiski saying, "We have some of the best welders in the world here and if they aren't the best, we've got a teacher out at the college who can teach them to be."

MR. KATIC said they would like it to be in Kenai as long as it has the facilities. He said no large barge cranes would be needed to install the caisson; it could be pulled upright by a boat and settle to the bottom. Then a jack-up rig moves onto location and assuming the well is successful the jack-up unit is used to drive piles and install the deck. It could have gas production in March.

1:42:05 PM
The advantages in using an outrigger caisson platform are that no derrick barge is needed, it has minimum cost and there is a short timeline to production. He didn't see too many disadvantages, and said that one had been modified before and used in Cook Inlet.

1:42:24 PM
Subsea wells work well if there is no ice (if the well goes down nothing can be done until spring time) and it hasn't ever been done in the Cook Inlet.

The existing platform has some known oil around it but it can't be reached, but another platform can be tied to it and additional oil can be recovered that way.

1:43:25 PM
He showed pictures of a single subsea "Christmas tree."

1:44:01 PM
CO-CHAIR WAGONER asked the distance from the mudline of the subsea well completion to the tree cap.

CO-CHAIR WAGONER asked if the whole unit stays on the ocean bottom with the cage around it.

MR. KATIC answered yes; the protective cages will deflect any rocks. He said this has more protection than any other pipeline.

1:45:36 PM
He said that the Osprey Platform is a good example of a two deck platform. The disadvantage is that it can only be installed in shallow water - 40 to 60 feet deep - and has no space for production facilities. It does not need a heavy lift barge crane and has a 28-well capacity. He said the Osprey was fabricated in Anchorage and shipped to the platform.

MR. KATIC explained if they have a large oil and gas discovery in the Kitchen Lights Unit they would model the design after Steelhead [three-deck platform], which requires a heavy lift barge to install. A gas line would be 8 to 10 inches depending on the volume and a six-well caisson could produce 10 mmcf/day per well. A six-well platform would produce 50 to 60 bcf/day and would be handled by an 8-inch line either to north Cook Inlet or to the shore. He said he was using 2008 numbers so those would have to be updated.

1:48:55 PM
CO-CHAIR WAGONER asked how long it would take to get producible gas.

MR. KATIC replied if they are successful in drilling to the gas zone this year, the engineering and fabrication could be done during the winter season and then everything would be ready. They will know where the reserves are and after checking with all the agencies Kitchen well 1 would have to be deepened to the Jurassic strata. Then they will start developing the six wells in the third quarter of next year. Production would happen in 2012 and early 2013, because all six wells won't be able to be drilled at once.

1:51:03 PM
REPRESENTATIVE CHENAULT asked if they preferred to use caissons.

MR. KATIC replied that is the preference for gas only development.

REPRESENTATIVE CHENAULT asked if they would use a bigger platform design if they found oil and gas, and added that the timeline to production has always been a concern (Mr. Katic earlier mentioned 18 months.)

1:52:48 PM
MR. KATIC responded that they would still use at least one caisson to get the gas off, but his timeline assumes no interference from anybody - just full steam ahead. If there is sufficient gas for two, they would commission a three-level platform for the oil, because the water is fairly deep, and that would take three years.

REPRESENTATIVE OLSON asked the current status of a legal issue [Indisc.].

MR. WEB answered that that homeland security and border protection issued a notice of violation with a fine of $15 million. Now the attorneys are working on factors that will reduce that fine.

REPRESENTATIVE OLSON asked if the fine was automatically based on the greater cost of the cargos.

MR. WEB answered yes.

1:54:59 PM
CO-CHAIR PASKVAN asked how he defines a successful drilling program.

MR. KATIC replied by the amount of reserves that are being produced. For a six-well caisson it would be a discovery of 100 to 150 bcf and for a three-level platform it would take about 50 to 100 million barrels. It's all about economics.

CO-CHAIR WAGONER asked what price he uses to determine that.

MR. KATIC replied $70 a barrel was used in their original numbers.

CO-CHAIR WAGONER asked when they have to pull off this year and where they would store the rig for the winter.

1:56:37 PM
MR. WEB replied that they had identified both Port Graham and Seward but would prefer Port Graham, because it has a heavy duty mooring station and the travel time would be much quicker. Seward has more infrastructure, but big tug boats would have to come up from Seward and take the rig back and go out into the Gulf of Alaska with its bad weather issues.

CO-CHAIR WAGONER said originally they were supposed to be off site on the last day of October and asked if they are working toward an extension.

MR. WEB replied they have had an agency meeting with the Coast Guard, DNR, DEC, AOGCC and NOAH, and the person in charge of the NOAH ice desk who has 18 years of experience has indicated that this year, based on historic data, ice won't start forming in Nikiski until December 8. So it's 18 days back from that date with the stipulation that they cease all drilling activities by October 31.

1:58:38 PM
SENATOR GIESSEL asked him to talk about the Beluga whale issues Escopeta might face.

MR. WEB replied they had to get a Corps of Engineer River and Harbor Act permit in order to set the rig in Cook Inlet. Because it was a federal permit they had to go through the Federal Nexus process which involved getting other agencies to concur with the Corps determination that there is no significant effect to the Beluga whales. One of the biggest concerns NMPS had was the 120 decibel level of continuous in-water noise that was determined to have an adverse effect on the Belugas. So Escopeta hired Marine Acoustics to put acoustic monitoring buoys around the rig and monitor in-water noise the rig generated during different activities. That data is being produced right now; no other data like it is available for the Cook Inlet.

He said they are also required to have Beluga whale watchers and a notification system in case one is spotted. Belugas generally aren't in their area of Cook Inlet until mid-December and during the drilling season they are typically up in Turnagain Arm. They haven't seen any from the rig, but a dead Beluga floated by four miles to the west of it last week.

CO-CHAIR WAGONER, finding no further questions, thanked them for their presentation.

2:01:50 PM
At ease from 2:01 to 2:03 p.m.

2:03:05 PM
CO-CHAIR WAGONER called the meeting back to order and invited Mr. SCHUTT, CIRI, to present their update on Cook Inlet activities, namely underground coal gasification (UCG).

2:04:43 PM
ETHAN SCHUTT, Sr. Vice President, Land and Energy Development, Cook Inlet Regional Inc. (CIRI), said he oversees their land and resources group as well as their energy development activities. Today he would talk about one of their energy projects, the underground coal gasification project. He said CIRI is the largest private landowner in Southcentral Alaska with more than 1.3 million acres of surface and subsurface estate available for responsible oil, gas mineral and alternative energy development. Their underground coal gasification project is through a company called Stone Horn Ridge, a joint venture between CIRI and Laurus Energy, a Houston-based UCG technology company. Laurus is an affiliate of Ergo Exergy which is a UCG technology company based in Montreal.

MR. SCHUTT explained that UCG is developing around the world. It is a process that converts coal in the ground in a deeply buried coal seam into what is called syn-gas. The process occurs below impermeable rock layers that are isolated from and protect freshwater aquifers. Most environmental and safety risks associated with traditional coal mining, handling, transport and waste are eliminated using this technology. Many more than 50 test and commercial projects have been completed worldwide; 50 more projects are in development right now and he thinks this technology will emerge as a factor in the state's energy scenario.

2:06:15 PM
He described the UCG process as drilling two wells deep into a coal seam so that they have a connection between them and are able to communicate. An oxidant such as air or pure oxygen is injected into one well that starts a combustion reaction that provides heat and energy, which drives five other chemical reactions that gasifies the coal and produces the syn-gas. The combustion reaction consumes about 20 percent of the energy content. The second well produces syn-gas to the surface where it is cleaned up for use. It's really a little more complicated than that and, "You really have a matrix of injection and production wells instead of a simple well tear."

2:07:46 PM
MR. SCHUTT said that Southcentral Alaska needs more energy and the Cook Inlet Basin as a whole is a world class coal basin with no coal production, and they believe it can be produced in an environmentally acceptable manner. They have done a significant amount of exploration work and it has confirmed they have a

significant commercial coal resource in the type of geological setting that is favorable for UCG development.

2:08:54 PM
Syn-gas can be burned or upgraded into other energy products. Most interesting for their purposes is a process called "methanation" where it is turned into methane, the primary element of natural gas. Most of the natural gas in Cook Inlet is pure methane for local use and potential export. CIRI has also analyzed using it for manufacturing clean liquid fuels through a Fischer-Tropsch reactor that has a lot of application in Alaska, particularly rural Alaska where the diesel crisis is going on. He explained that the Agrium plant turned natural gas into syn-gas that got turned into fertilizer. Mr. Schutt said that syn-gas can be used as feedstock to produce clean liquid fuels, fertilizer and other petrochemical products if it can be made at a cheap enough cost.

2:10:06 PM
MR. SCHUTT said their project is located on CIRI land on the west side of Cook Inlet that has significant confirmed commercial coal resources. Multiple commercial coal seams have been confirmed below 650 feet and so has favorable geology. He showed various slides of well locations, land ownership patterns, the road network and two of the major regional faults.

2:11:56 PM
MR. SCHUTT said CIRI spent about a year validating UCG as a legitimate energy technology in a group of technology providers. They formed a joint venture on Stone Horn Ridge and conducted a 13-hole core drilling program and collected wire line data on oil and gas exploration from most of the holes. They conducted field examinations of the core as well as laboratory examinations, did mud logging and built robust geological models of the resource. They have also commissioned and received a concept engineering and costing study of surface facilities with estimated product costs for most of the products he talked about earlier. Through this modeling program they have commissioned specific geological rock mechanics and hydrogeological modeling and rolled them all into one robust dynamic computer model.

2:13:58 PM
This project is on the cutting edge of a commercial deployment, he said, but CIRI will take the time it needs to be careful and make responsible decisions and only build a UCG facility after a deliberate process.

CIRI commissioned a high resolution shallow seismic program that will actually go in the field for 25 to 30 days in November. The results will be incorporated into the data they already have and a preliminary model of the site will be completed. The next phase of the program would be a characterization drilling program. More permitting is needed and baseline environmental data is being collected for that.

2:15:38 PM
CO-CHAIR WAGONER asked if they are just looking at developing a syn-gas process or generating and selling some power into the grid or piping it to some place like Beluga for use as feedstock.

MR. SCHUTT replied that a fair amount of surface facilities are required to make commercial syn-gas and they will evaluate the various markets. One they see now is electric generation with two basic scenarios; one is to sell to the Chugach facility at Beluga and the other would be to construct a new power facility for the project. Methanation to make natural gas is another option and that would be available to all the in Alaska plus to ConocoPhillips' LNG export terminal and the Agrium facility. The third market that has a lot of promise is a Fischer Tropsch reactor to make diesel and/or jet fuel as a product. Methanation and/or making synthetic liquid fuels will almost certainly need large investors.

2:17:44 PM
CO-CHAIR PASKVAN asked how to turn off the underground combustion once it has been started.

MR. SCHUTT explained that first of all the site is very deeply buried below the water table and doesn't have any natural connection to the surface and they would simply quit pumping oxygen into the combustion chamber. It wouldn't stop immediately but relatively quickly.

CO-CHAIR PASKVAN asked if a UCG facility could generate electricity at a comparable cost to natural gas in Southcentral.

MR. SCHUTT replied that he thought the cost would be significantly lower. The best analogue he could think of was a South African national UCG facility that has some of the cheapest electric power in the world. They use a "templated power plant" with six 700 megawatt coal boilers placed side-by-side. The scale and design make it very low cost.

REPRESENTATIVE CHENAULT asked if they have estimated how much gas their UCG facility would produce.

2:21:13 PM
MR. SCHUTT replied no, but the technology is inherently scalable; and they are finishing the site modeling to validate their preliminary estimate of more than 300 million tons, which could be gasified into 4.8 tcf. They have looked at models running from 20 bcf/year to 90 bcf/year production and found significant economies of scale at the mid-range.

REPRESENTATIVE OLSON asked if CIRI's project has economies of scale that Blue Sky's didn't have.

MR. SCHUTT answered yes. He explained that Blue Sky gasified its coal in surface facilities which cost a lot to build, maintain and operate, and CIRI plans to use the earth for its gasification chamber.

CO-CHAIR WAGONER asked what percentage of coal over time would be combusted.

MR. SCHUTT replied it depends on the overall project design and other variables.

CO-CHAIR WAGONER said this coal would probably never be mined anyway.

MR. SCHUTT replied that's right; it's way too deep.

2:25:43 PM
CO-CHAIR WAGONER asked if a large dewatering project would be needed for combustion when they get into the wet coal.

MR. SCHUTT replied that the water in the coal seam is necessary for the reaction itself and extra water isn't needed for the process.

CO-CHAIR WAGONER, finding no further questions, thanked him for his testimony.

2:26:31 PM
At ease from 2:26 to 3:01 p.m.

3:01:59 PM
CO-CHAIR WAGONER called the meeting back to order and invited Mr. Thomsen with Ormat Technologies to give his presentation.

PAUL THOMSEN, Director, Policy and Business Development, Ormat Technologies, Inc., introduced Rahm Ornstein, Director, Business Development and Mt. Spurr project lead, Ormat Technologies. He said Ormat Technologies is a publicly traded company and that their expectations might not always be correct.

3:03:24 PM
MR. THOMSEN said Ormat Technologies is a leader in the geothermal power sector. It owns and operates approximately 553 megawatts of geothermal power worldwide. They have supplied over a gig watt (1,000 megawatts) of equipment in 24 countries. Ormat is unique in that it is vertically integrated meaning they have the geologists and resource engineers to design the infrastructure needed for resource development, they design and manufacture their own equipment and they also have the business development team to move these projects forward. They employ about 500 people in US and over 1,100 worldwide.

He noted that the 30 megawatts of operating geothermal power in Hawaii shares some of the same geological conditions as Mt. Spurr. He said Ormat's commitment to Alaska started in 1975 when they supplied over 100 remote power units on the TransAlaska Pipeline (TAPS) and their first geothermal unit was tested in Alaska at the University of Alaska Fairbanks (UAF) in 1979.

3:06:15 PM
MR. THOMSEN said one the unique attributes of geothermal development is that it is a base-load energy resource; that means they produce power 24/7/52 weeks a year. Once these projects are up and running they are very reliable, cheap and cost competitive; once a project is up and running it can offer fixed, long-term pricing. Geothermal systems, especially Ormat systems, also tend to be closed-loop systems with near zero emissions; the geothermal brine being pumped up from the reservoir can be recycled and air cooling can be used instead of precious water. They can also create long-term and high quality jobs.

3:08:03 PM
Some of the inhibitors to geothermal development are that the resource is scarce - not so much in Alaska that has a lot of volcanic activity, but they are incredibly hard to find. They also require a high upfront capital expenditure (CAPEX). In a risky environment this separates companies with a good equity position from those that have to raise capital.

3:08:44 PM
He next recapped the fact that approximately 11,000 megawatts of geothermal power is applied throughout the world and that 24 nations have utility-scale geothermal generation. All of them have policies in place that have been instrumental in getting those initial geothermal projects moving forward. So, he said Ormat is very thankful to the State of Alaska for amending royalty legislation, providing grants and other avenues for getting capital into this development.

MR. THOMSEN said Mt. Spurr is located 35 miles west of Anchorage. Ormat leased 36,000 acres of state land there in October 2008 and got their "non-intrusive exploration" in the summers of 2009/10. They drilled two exploration core holes to the depth of 1,000 ft. in September 2010 and then one deep exploration hole to 4,000 ft. in the summer of 2011, and over 6,000 ft. of core samples had been donated to the Geological Material Center in Eagle River to help the state learn about conditions in the rock they encountered.

The results of the 2009 drilling work were very encouraging, but the results to date have been less so. The rock is a conglomerate that is more porous and doesn't do as good a job of trapping the heat; the temperatures are also much cooler than expected. They also had rig issues which slowed down their drilling timeline and so they are just analyzing the work now and updating their 3D geological model. All their data to date is being shared with the state DNR, DGGS and AOGCC, and Ormat is in discussions with them to get thoughts on things they can do better in their continued exploration efforts to find a prolific geothermic resource amount at Mt. Spurr.

MR. THOMSEN said the next step is to update their current exploration claim, which may include a recommendation to rotary drill to a much deeper depth. He said this project is not dead. Their best talent is reevaluating where to drill and how to get below the conglomerate rock to where they think the prolific geothermal resources exists. He said they are also working with the state that has some of the best talent in Alaska.

3:13:39 PM
He recapped that Ormat has leased 36,000 acres for about $3.5 million and is currently paying about $100,000 in annual rent on it. Ormat has spent about $3 million on the nonintrusive exploration, the exploration drilling and permitting and the state has spent about $2 million. And while they thought they would be at resource comp formation moving into 2012, but they

have extended the exploration drilling period and moved it to 2013.

3:15:48 PM
They expect the capacity at Mt. Spurr to be somewhere between 50 to 100 megawatts; their target is still to get 50 megawatts on line in 2016. This project is a possible near-term solution bridging the gap to larger projects such Susitna or the Watana hydro projects. Ninety-five percent availability for a 50 megawatt project would produce about 416 gig watt hours a year. The estimated cost of power for this project is a fixed $.12 kilowatt hour and they are still in discussions with utilities trying to get to that point. The utilities really like these projects, because geothermal is base-load and doesn't have integration costs that other renewable energies do. Many times that integration cost is not incorporated in the offered purchase price. And while the cost of geothermal is comparable to other alternatives, all of those avoided costs are likely to go up in the future.

MR. THOMSEN said the FY 2012 budget had a direct appropriation for $12.5 million and Ormat was awarded the AEA round four grant for $2 million. Because of the 2011 lackluster drilling results they are working closer with AEA and DNR on updating the scope of work and once they have that, they will recommend a new plan of exploration and present that to them.

He said they expected to be drilling three wells in 2012 and now they are looking at maybe one much deeper well and evaluating the impacts that has on the plan.

3:17:57 PM
MR. THOMSEN said Ormat has great community support; they work very well with Tyonek, the Kenai Peninsula Borough and Anchorage, all of which have provided letters of recommendation and have been overwhelmingly supportive of their efforts on this project. Environmental and renewable energy communities are also very supportive. The project had been verbally supported by all six Railbelt utilities and ARCTEC, as a potentially viable near-term solution. They are excited to continue working on this project that will provide 100 megawatts of geothermal power, enough power to provide 60 high paying jobs and well over 100 construction jobs, the impact of which extends to approximately 200 local vendors. A 30-year operating life would fuel the local economy with over $850 million; it could save 600 mmbtus of depleting Cook Inlet natural gas and that's roughly the equivalent of Anchorage's entire residential heating

consumption. They can also avoid the emission of 3,200 tons of CO_2.

He summarized that Mt. Spurr development would provide clean, reliable, base-load power to the Railbelt, be significant relief to Cook Inlet natural gas consumption, be a significant contributor to meeting the state's renewable goal of 50 percent by 2025, provide long-term price stability, be a near-term solution for power concerns and provide high quality, long-term green jobs.

3:20:14 PM
CO-CHAIR WAGONER asked if he thought 100 megawatts is the maximum capacity of the Mt. Spurr area or if different sections of their lease be expanded.

RAHM ORNSTEIN, Director, Business Development and Mount Spurr project lead, Ormat Technologies, Inc., replied that number came from other projects they have built the biggest in the Philippines of 140 megawatts. So, theoretically it could be even bigger, but at this point they don't want to speculate. They would be very happy to "open a big find of 50 megawatt resource there and even more if we have 100."

REPRESENTATIVE SEATON asked if the rig they are using now is capable of lateral drilling.

MR. ORNSTEIN replied that a rig isn't there currently; one was leased for the summer and is now somewhere else. The rig that was there was a core rig that goes deep up to 6,000 ft. and couldn't drill directionally. They ended up with 18 degrees of direction. It's too early to say what they want to do next; it depends on work the geologists are doing. The plan might be to drill a larger diameter well using rotary drilling to deeper depths and they will probably want to go vertically to get below the layer of conglomerate.

REPRESENTATIVE SEATON asked what kind of seismic data is available for Mt. Spurr.

MR. ORNSTEIN replied that there are no seismic surveys of Mt. Spurr since it is an active volcano and it is useful only for crew safety through the Volcano Observatory. Aerial magnet surveys and high resolution photography were used. On-ground exploration was done with ground gravity and metallurgics. A combination of all of these was used to create a geologic model from which the drill target was selected. He was told that they

probably don't need additional surveys but rather additional drilling.

3:25:28 PM
CO-CHAIR PASKVAN asked what temperatures they need to find and when will they get that answer.

MR. ORNSTEIN replied they really need temperatures in the range of 350 F or higher. They thought it would be found this year, but only half of that was found because the rock is different than everyone expected and didn't contain heat very well and it had more mixing with the glacial waters than what they thought.

3:27:53 PM
SENATOR GIESSEL asked how much will drilling a larger-bore deeper well add to the project.

MR. ORNSTEIN answered that it's premature to answer that now. The major cost is going to be the logistics of getting larger rigs in as the nearest road ends almost 20 miles away from their leases. They might need to build an ice road, which would cost around $5 million for one season. For the round four grant application they told AEA $11 million for the first deep larger hole and the drilling costs and that number will get refined as the plan gets updated.

SENATOR GIESSEL asked if that changes the cost per kilowatt of what the project would produce.

MR. ORNSTEIN replied that it potentially could, but they used full sized commercial geothermal production and injection wells in their models and if the next step is highly successful the impact on the economics may not be significant. But if they come to the conclusion that the resource in general is either much deeper or colder than their initial model assumed the economics would definitely change.

3:31:23 PM
REPRESENTATIVE CHENAULT said he thought the legislature appropriated about $17.5 million for Ormat plus an additional $2 million, but added that the numbers could be worked on later. He asked how deep they will drill before finally saying they can't find the temperature they are looking for.

MR. ORNSTEIN responded that Ormat originally asked for $18 million in a direct appropriation that together with the $2 million from AEA would have brought them to the $20 million they

were shooting for. Ultimately, the governor reduced the appropriation to $12.5 million.

As to his second question, Ormat has developed geothermal resources in variable depths ranging from 1,000 ft. or less in a Reno plant up to 8,000 ft. or more in their Hawaii plant. In Mt. Spurr, based on previous models, they were hoping to find a resource somewhere in the 3,000 to 5,000 ft. depth this year, but they had to stop at 4,000 because of mechanical issues. He said that 8,000 ft. is still doable. Geothermal economics are primarily set by a combination of the depth and the temperature; shallow and hot is golden, deep and cold doesn't work. Deep and very hot can work or if it's very shallow and not very hot.

3:35:04 PM
REPRESENTATIVE CHENAULT commented that an extra $2 million or $7 million will probably pencil out in the long term.

CO-CHAIR WAGONER agreed and said it's like geothermal in that respect. He invited Mr. Meznarich from ConocoPhillips to testify.

3:36:17 PM
DARREN MEZNARICH, Manager, Cook Inlet Assets, ConocoPhillips Alaska, Inc., said they operate three assets in the Cook Inlet area; Beluga onshore gas field, the north Cook Inlet offshore unit known as the Tyonek Platform and the Kenai LNG Plant. Between the Beluga River unit and the north Cook Inlet unit, ConocoPhillips operates approximately 130 mmcf/day of natural gas production. He said he cannot speculate on what might happen under the various scenarios the committee has described and believed in letting the market dictate the most efficient and economic solutions and what will ultimately happen with regards to Cook Inlet gas supply. However, one of the historically significant components of the Cook Inlet gas market, one that drove early development of gas in the Inlet and helped provide a market for gas production in excess of the utility requirements, is the Kenai LNG plant. He would focus on that today.

3:38:11 PM
MR. MEZNARICH explained that the Kenai LNG Plant has been operating for more than 40 years and is currently the only significant industrial user of natural gas in Southcentral Alaska. The Kenai LNG Plant received its current two-year export license on October 5, 2010 and the license extension will expire on March 31, 2013. ConocoPhillips closed the acquisition of

Marathon's 30 percent interest in the plant in late September and it now owns 100 percent.

In February, ConocoPhillips announced the length of the shut-down of the plant to be in the April or May timeframe based up the decline in market conditions, which meant that the continued operations were not commercially viable. The unfortunate March tsunami in Japan and ConocoPhillips' success in marketing LNG to new customers enabled them to continue operation of the plant longer and it is now expected to operate into November before being shut down and preserved for an interim period for potential future use.

As both the utilities previously testified, he said a forecast of a natural gas shortage for Southcentral Alaska in the next few years, unless a new source of gas is identified and developed very quickly, will make LNG imports and regasification necessary to help fill the shortfall. In this import scenario the plant, its dock and its LNG tanks could serve a role in the interim solution where LNG is imported and regasified to supply natural gas to the Southcentral utilities and users. In the long term, the plant could be refurbished and turned into an LNG export facility for either exporting local gas, if a significant Cook Inlet gas discovery is made, or as a means of selling North Slope gas if the North Slope pipeline to Southcentral is constructed.

MR. MEZNARICH stated if no future opportunities for the Kenai LNG Plant materialize, they will permanently shut it down. That is not their desired outcome. He emphasized that ConocoPhillips is still "evaluating the role of the Kenai LNG Plant in the various scenarios that might develop with regards to both Cook Inlet exploration and development of the Alaska North Slope gas resources."

3:41:22 PM
CO-CHAIR PASKVAN asked in the import scenario what volumes they would import and what quantities they would export if they refurbished.

MR. MEZNARICH replied that he couldn't speculate on imported LNG, but the utilities have specified an increasing rate of imports starting off with 2 or 3 bcf/year building up to 20 bcf/year or more (10 tankers per year).

CO-CHAIR PASKVAN asked what capacity the plant would have under a refurbishing scenario.

MR. MEZNARICH replied its capacity is 240 mmcf/day. In the near term the plant could potentially ramp up to levels close to that. Over a longer time the 40 year old facilities would need retooling and the costs would be higher.

3:43:13 PM
REPRESENTATIVE CHENAULT commented that the plant's high output was about 63 bcf/year and that Agrium used around 53 bcf/year.

REPRESENTATIVE SEATON asked under the import solution, what kind of retooling, expense and time delay is there to convert an export facility to an import facility.

MR. MEZNARICH replied that the dock would be used to bring in ships instead of sending them away full, and then it would be offloaded into the LNG tanks; so that part doesn't change. It just goes in the other direction. But they would have to build a regasification facility, which basically heats up the LNG and makes it gas again before it is sent into the pipeline. The cost is confidential right now, but it's nothing like the ASAP.

REPRESENTATIVE SEATON said he is not familiar with a re-gas facility and asked if it uses sea water or air as a heat source or are they burning fuel.

MR. MEZNARICH answered that LNG would come in and steam would come out of a heat exchanger on other side.

REPRESENTATIVE SEATON asked if some natural gas would be used on the other side for the heating conversion.

MR. MEZNARICH answered yes.

CO-CHAIR PASKVAN asked if more than 8.6 bcf/year were to be exported, could someone like ConocoPhillips consider potentially build a new export facility.

MR. MEZNARICH replied that it would be hard to speculate on what the market and fiscal terms would be at that time.

CO-CHAIR WAGONER referenced ASAP's report that says at 500 mmcf/day their tariff would be $9.63 mmcf and the only commercial user that big in Cook Inlet or the Southcentral area is the plant and asked if they plan to request an extension of their export license in the near future or is it guess work.

MR. MEZNARICH replied they would have to look at events as they unfold. Right now they have to look at commercial and fiscal terms.

3:49:17 PM
SENATOR GIESSEL invited Escopeta back and asked Mr. Web about the Kitchen development timing on chart 42. She noticed first production for gas at the end of bar group number 3 and first production of oil in the middle of number 4, and she wanted to know how that would work with the AOGCC that typically wants the oil to be produced first - before the gas.

MR. WEB responded that the AOGCC requires oil to be produced first if the two formations are together and the gas cap is supplying the pressure for the oil formation. The geologic structures they are looking at are the Sterling gas sands, Beluga gas sands and the Upper Tyonek gas sands as geologic structures that are separate and distinct from oil. If they drilled into an oil reservoir that had a gas cap, they would have to produce the oil first because the gas is the driver. But in this situation they are drilling into gas sands and gas reservoirs - they are all separate from oil reservoirs.

3:51:37 PM
CO-CHAIR WAGONER, finding no further questions, thanked everyone for their participation and adjourned the meeting at 3:51 p.m.