

Alaska Railbelt Electrical Grid Authority (REGA)
Advisory Work Group – Second Meeting
March 26, 2008 Meeting Notes

Advisory Group Attendees:

Norman Rokeberg, Chairman	Former State of Alaska Representative
Steve Denton	Usibelli Coal Mine
Mark Foster	Mark A. Foster & Associates (MAFA)
Brad Janorschke	Homer Electric Association (HEA)
Marilyn Leland	Alaska Power Association (APA)
Mitch Little	Marathon Oil Company
Chris Rose	Renewable Energy Alaska Project (REAP)
Debbie Schnebel	Scott Balice Strategies
Jim Sykes	Alaska Public Interest Research Group (AkPIRG)
Jan Wilson, Commissioner	Regulatory Commission of Alaska (RCA)

Telephone Participants:

Myron Rollins	Black & Veatch
Kip Knudson	Tesoro
Tony Izzo	TMI Consulting
Colleen Starring	Enstar Natural Gas Co.

Public Participants:

Wayne Carmony	Matanuska Electric Association
Tim Barnum	Seward Electric
Martina Dabo	AEA/AIDEA
Randy Hobbs	Hobbs Industries, Inc.
Brian Hirsch	Homer Electric Association, Board Member
Jim Posey	Anchorage Municipal Light & Power (ML&P)

Alaska Energy Authority

Jim Strandberg	REGA Study Project Manager
Jim Hemsath	Deputy Director-Development, AIDEA and AEA

Black & Veatch, REGA Study Consultant

Kevin Harper	B&V REGA Study Project Manager
Doland Cheung	B&V Stakeholder Interface Support

Meeting was called to order at 10:07 a.m.

Introductions

Motion to adopt last month's meeting minutes.

- A motion was made by Mr. Sykes and seconded by Mr. Denton to adopt the Minutes from the February 19, 2008 Advisory Work Group Meeting.
- Chairman Rokeberg asked if there were any changes.
 - Mr. Little made the comment that he was not a substitute as listed in the minutes.
 - Commissioner Wilson made the comment that Commissioner Tony Price was her substitute at the February 19, 2008 Meeting.
- The Advisory Work Group adopted the minutes with changes.

Physical and Fiscal Condition of Intertie Discussion

- Mr. Strandberg gave a brief description of the existing Alaska Railbelt Electrical Grid.
 - Lines from Delta Junction to Port Graham and owned by a number of the utilities, with a portion owned by the State.
 - The utilities generally operate and maintain the system prudently.
 - Dispatch is through three control centers (ML&P, Chugach and GVEA).
 - The Intertie is largely run by bilateral agreements, maintenance contracts and joint use contracts.
 - The RCA's web page contains a summary of the existing contracts for further details (but does need revision for latest changes).
 - Beluga and George Sullivan are main plants; GVEA has a power station at North Pole, Homer at Nikiski Energy Park.
 - The Railbelt is run by six utilities with distinct service areas. They are four co-operatives (Chugach, Matanuska, Homer and Golden Valley) and two municipals (ML&P and Seward).
 - AEA hosts a Reliability Committee that is in the process of drafting a new reliability standard that is being modeled off the current NERC standards.
 - Q: Can you summarize the transmission line ownership?
 - A: Golden Valley has a 138kV transmission line and a duplex line out of Healy to Fairbanks, funded by a combination of RUS and State monies. Because of the combination of distance and line losses, the northern portion of the network developed at 138kV. There are specific rules to run those lines. From Healy South, there is a transmission line, 345kV operated at 138kV. The Alaska Intertie, originally conceived as part of a larger Susitna Hydro power project, was built at 345kV and goes down to Douglas. The history is unclear, but a decision was reached to use some of the 138kV MEA lines to increase North-South transmission capacity.

- The Eklutna line was the first one built by the federal Alaska Power Administration (APA) back in the 1940s (115kV) and stretches to Palmer and to the University. The basic standard in the Anchorage area is 115kV as a result. ML&P, Chugach and MEA currently run that line through an agreement. MEA takes power at Teeland from Chugach, and MEA owns its lines (Chugach owns the transformer). There is also a 138kV transformer owned by the State at Teeland that converts 230kV power to 138kV for sending north over the Alaska Intertie.
- A transmission line south of Anchorage that extends to Quartz Creek/Cooper Landing is owned by Chugach. This 115kV line extends west to Soldotna, and then both north and south to serve the Kenai Peninsula. These lines are generally owned by Homer. There is also a Chugach owned 115kV/69kV line from Davis Creek substation (just north of Quartz Creek/Cooper Landing) into Seward. Other 115kV lines on the Kenai Peninsula connect the Bradley Lake Hydropower station into the Homer system, and these are owned by AEA.
- The Technical Conference notes, which can be accessed on the AEA web site, contain some of this information as well. Refer to the sessions by Brian Hickey and Henri Dale.
- Chairman Rokeberg made a motion to produce a new Railbelt Transmission System map. The motion was seconded by Mark Foster. This motion passed without opposition.
- Chairman Rokeberg asked Mr. Wayne Carmony (MEA General Manager) to expand on the recent television commercials regarding transmission line safety issues.
 - Mr. Carmony: MEA is the maintenance contractor for the line that goes through MEA. There is a very well known snow loading condition on the 345kV line and conductors. Ice will form and they will connect and form a bridge that accumulates snow. It operates fine when the snow is loaded, but there are issues when it begins to unload. If one conductor unloads and the other doesn't, the conductor position will change, sometimes actually resting in the snow on the ground. There is an inset tower fix for it, but inaction on the inset tower project has increased the fix cost from \$15 million to \$40 million. AEA has instituted a way to determine if there are low conductors and fix them, which costs about \$1-2 million. However, not all of the inset towers are monitored and there is no guarantee that all of the lines can be de-energized in time to prevent an injury. As a result, MEA feels compelled to inform the public that they need to be aware of the issue and potential hazard if they are in the area.
 - MEA has been requesting a State fix since 1996. The utilities believe the State is responsible, since they own the line. In addition, MEA feels responsible as the O&M contractor to at least notify the public of the problem (hence the commercial). When funding was discussed at the Legislature, the discussion was about building a parallel line in the area, and not to fix the snow loading issue.
 - Chairman Rokeberg: Is the tri-partate agreement still in place?
 - Mr. Carmony: That agreement relates to a different portion of the line.
 - Chairman Rokeberg: So the line is owned by the State and MEA does the O&M?

- Mr. Carmony: Yes.
- Chairman Rokeberg: There also is this new \$20 million section?
- Mr. Carmony: That proposed project is to go from the Teeland substation to the Douglas substation, but the funding is not adequate. Also, MEA's understanding is that rather than build the line as planned, a proposal is on the table to build a line from Point Mackenzie to Douglas, with costs in the neighborhood of \$40 million. MEA expects that the participating utilities will look to the State to participate in the funding.
- Chairman Rokeberg: Is this something MEA endorses?
- Mr. Carmony: No. When it is energized at 230kV, everything MEA has from Wasilla north would have to be upgrade at five times the cost to tap in. It puts MEA in a situation of constantly upgrading their distribution system and the result of this on rates would make the area a no-man's land for service.

What we want to do is build a line that offshoots from this line (service road). This proposal has been vetoed three times by the Governors and has been described as not necessary. This issue creates all the friction that exists today between the utilities. The line does not need to serve both bulk transmission and local distribution. The legislature has approved it, but it is always vetoed.
- Chairman Rokeberg: Would the proposed Point Mackenzie line be rated for 230kV, but energized at 138kV?
- Mr. Carmony: If it is energized at 230kV, we could transfer from about 40 to 100 MW north. The Alaska Intertie has always been a long radial line in reality, since Fairbanks doesn't have the capacity to send power south. When plants go offline, MEA goes out first, since the end of the line needs to stay on (GVEA) for overall regional reliability purposes. During an outage, GVEA can send power south only to about Wasilla and that's it. It may seem like MEA is in the middle, but it is really at the end of both "ends".
- Mr. Strandberg made the comment that this particular dispatch protocol and the rules that the Railbelt is operated under is an issue and will be examined.

Organizational Paths Discussion

- Mr. Strandberg made a statement to recognize that four of the six utility General Managers were in attendance today and that the REGA study team has received substantial support from them.
- Brief discussion to close the subject about the organization paths proposed last month.
 - We are seeking basic concurrence and approval of the structure of the study.
 - Mr. Harper: We had a discussion last month regarding the proposed Organizational Paths and Evaluation Scenarios. We'd like to close out the Organizational Path issue today so we can get to the important discussion later today regarding the input assumptions and evaluation criteria to be used. The descriptions of the Organizational Paths so far have been largely focused on the

functional responsibilities, but the study will also evaluate the legal structure and provide a detailed implementation plan.

- Last month, Black & Veatch proposed three paths (1, 3, and 4). Two additional paths were proposed during the meeting. The first was to evaluate an independent entity that would be responsible for joint operations of the grid only. The second was to evaluate a consolidation of the generation, transmission and distribution functions of the six utilities.
- Mr. Strandberg: First, the generation and transmission functions can be easily separated from the existing utilities. However, in reviewing the enabling legislation, a full consolidation alternative may be better addressed in a separate action than the REGA study. The Team would be very interested in hearing comments from the Group.
- Mr. Sykes: In reading through today's handouts, I wish we had the Technical Conference notes from the brainstorming session.
- Q: Also, what is the cost of fuel?
- Q: What are we trying to answer, what are the driving forces and what is the magnitude?
- Mr. Denton: I think the answer is yes. I can't see how we can do what we need to do without examining a consolidation case. I don't see how we can look at an alternative that just combines generation and transmission.
- Mr. Harper: Path 4 does combine generation and transmission. What a consolidated option would do is include distribution.
- Mr. Denton: I would think distribution is definitely out of scope.
- Ms. Schnebel: Would we have discussion about impacts on consolidation down the road?
- Mr. Harper: Yes, it would. The idea would be that a consolidation of generation and transmission would provide a transition step that could lead the Railbelt into further consideration of other opportunities, such as future consolidation of distribution.
- Mr. Denton: If I count correctly, we will have 20 options, so will we be able to boil this down?
- Mr. Harper: That question is a good segway into the next item on the agenda, but I'd like to finalize comments on this topic first.
- Mr. Strandberg: Does the RCA have any comments?
- Commissioner Wilson: My understanding is that we are only looking at generation and transmission, not distribution and I wouldn't disagree with that.
- Mr. Little: Kevin answered my concern regarding what the economic impact would be.
- Mr. Janorschke: I would agree that the challenges are on the generation and transmission side. That is where the big dollars are.

- Mr. Foster: I would concur that we exclude distribution at this point with the understanding that we don't preclude future distribution examination to eventually find the overall least cost alternative.
- Mr. Denton: I think demand-side management (DSM) needs to be driven by a centralized policy or the Legislature. For example, people want to use energy efficient light bulbs, but they can't be sent to the landfill, so somebody has to take care of this or we will have the forest filled with used light bulbs.
- Chairman Rokeberg: Any further comments? There were none.
- Mr. Harper, with concurrence of the Chairman, discussed Evaluation Scenarios and Criteria. He brought forward three handouts: Overview of Organizational Paths and Evaluation Scenarios, Development of "Illustrative IRPs" Versus "Definitive IRP", and Summary of Input Assumptions.
 - Team to develop production cost modeling for each Organizational Path for each Evaluation Scenario.
 - Team to develop organizational costs of each Path.
 - Key concept is that we are not comparing Evaluation Scenarios across Organizational Paths. We are comparing Organizational Paths to the Status Quo within each Evaluation Scenario.
 - The challenge will be how to take the list of uncertainties and develop a logical analysis.
 - The first page of input assumptions generally won't change across Scenarios.
 - A large hydropower project will be included.
 - A generic block of wind will represent wind alternatives based on Martina Dabo's screening analysis.
 - Q: The wind costs may also be driven by accessibility.
 - Q: For scenario 1, the DSM program should be "either/or" instead of "and" since that is what the States are doing. But what is the buy-down amount?
 - Q: The assumption on Renewable Portfolio Standard (RPS) should be discussed as a group for the model during the next session.

Chairman Rokeberg called for a lunch break at 12:14 p.m.

Chairman Rokeberg reconvened the meeting at 12:43 p.m.

Continue Discussion of Input Assumptions

- Mr. Harper continued his overview of proposed assumptions.
 - Commissioner Wilson: Can you clarify Scenario 1 and 2?
 - Mr. Harper: Scenario 2 is basically a natural gas scenario.
 - Commissioner Wilson: So it doesn't reflect reality?

- Mr. Strandberg: It reflects one potential reality. The intent of the study is to consider a number of potential futures, and the responding business structures.
- There were a number of questions on carbon tax and other key inputs to the matrix of energy futures and organizational paths. After considerable discussion it was agreed the study seeks to answer the question what is the best organizational (business) structure for the major energy futures we could face.
- It was clarified that organizational (business) structure means the same as “Organizational Path” or “Path.”
- Mr. Denton said that we must make this manageable so narrowing paths and scenarios to four seems to be sufficient. Mr. Denton stated that transitioning from low demand in Scenario 1 to high demand in Scenario 4. So maybe we should look at this from what would be the right factors from low to high demand.
- A question was asked how the energy scenarios (futures) are being formed.
- A: The fundamental question is, “What is the optimum organizational structure?” The purpose of the scenarios is to analyze organizational options across the range of possible futures instead of a single possible future. Is the study based exclusively on cost savings?

Mr. Harper further commented that the scope of work required B&V to develop different scenarios describing how the Railbelt would secure fuel resources, build generation, and connecting transmission lines. These different energy futures are meant to be comparative paths, so the functional and operations needs of the future Railbelt grid can be both compared, and least cost solutions identified for each. Savings are a critical determinate, but legal and tax barriers are also key components.

- Mr. Janorschke: Am I incorrect in thinking that we shouldn’t get too hung up on specific assumptions and that once the REGA study recommends an organization that we need to go back and develop a Regional IRP to clarify the eventual outcome?
- Mr. Harper: Yes. What we hope will happen is that if Path 4 is the best in a single Scenario, it is the best under all Scenarios. That will provide some level of comfort that the correct Organizational Path was chosen.
- Mr. Foster spoke on the structure analysis. The hard dollar costs will be easy to identify. But the cost savings may be the most challenging to identify. How can we identify incremental cost savings? He also suggested we consider an “optimized” scenario that incorporates some level of optimum regional planning to capture all of the potential value that may be present.
- Mr. Harper indicated he would consider these comment.
- Q: How do you optimize Path 4 when it has some dynamically opposed assumptions?
- A: Under certain circumstances, you can’t. For example, if Path 4 is the optimum and requires everybody to participate, but the actual implementation doesn’t require full participation, you won’t get all the benefits identified. We are trying to make assumptions as consistent as they can be.

- Q: It seems we are dancing around a few moving parts, but you asked if there is another Path and are the input assumptions correct. I think we concurred that the carbon tax needs to vary. But what is the purpose of this modeling and what are the criteria for that? Policy? Structure? Generation mix? Which of these can we manipulate? Sensitivities – policy incentives, risk, generation mixes and optimum structures.
- Mr. Harper: What would you like to see varied?
 - Large, major hydropower – What is the bottom line cost of power if the State subsidized a large, major hydropower project and what organizational structure would facilitate this?
 - DSM – Does DSM lower the cost of power and what policy incentives would encourage this?
- Mr. Carmony: It appears to me what is missing is some form of public policy around these assumptions. If so, it seems to me some of the scenarios are not feasible since the public policy doesn't exist to make these assumptions a reality. An optimum organization is useless if the fuel problem isn't solved. The State needs to develop a public policy to make this happen.
- Mr. Harper: The focus of this study is not to develop a State Energy Plan. It would be easier to address the fuel issue if a State Energy Plan already existed. It would also be easier if a revised Susitna Hydro Project study was available, but it is not. What we are trying to do is come up with a set of assumptions as a proxy for these unknowns to find out what is the best organizational structure to make it happen.
- Mr. Barnum: It seems like the focus is on major generation projects in the Anchorage bowl area. How does the study reflect benefits of other options like distributed generation, increased reliability in the bush communities, etc?
- Chairman Rokeberg: Let's keep in mind that the Legislative directive is to examine the Railbelt; this is not a State Energy Plan. We are not here to debate the merits of a carbon tax or a bullet line. We need to keep this in mind.
- Mr. Rose: We are all sensing the urgency, but are getting too fixated on the Scenario assumptions. It would be a lot easier to do if we had a State Energy Policy, but we need to operate in a vacuum. I also have noticed comments that Path 4 may be the optimum and if so, it would be a lot easier if the utilities got together tomorrow and just decided to do Path 4. It also seems that we are missing the risk component across these scenarios.
- Ms. Leland: I understand "R" (in REGA) stands for Railbelt, but if there is a bullet line, could six utilities be seven with Copper Valley? I think this consideration would be beneficial and should be included.
- Mr. Strandberg: <pointing at white board> The thought would be that the outcome of the REGA study would provide recommendations on the business end for the Energy future and use it in tandem with the future Energy Policy to develop a Regional Integrated Resource Plan.

- Mr. Janorschke: In my opinion, you can just cross out Path 2 and 3; evaluate Path 1 and 4 with some variations of those.
- Mr. Harper: But although Path 4 numerically would be optimum, Path 4 may be less feasible if you include all of the costs, including those costs associated with tax-exempt financing, participation rules, asset transfers, etc. One part of the project will be to model the best organization. But the other part of the study will be to ballpark the costs associated with the implementation plan.
- Q: I've heard about wind, but what about geothermal? Also, even if a large, major hydropower project happens, what are we going to do in the interim?
- Chairman Rokeberg: Why is the gas price discounted in Scenario 2 vs. using Henry Hub?
- Mr. Harper: We haven't talked to any Alaska gas producers yet. But this is based on discussions with others in the gas industry that thought that the price of gas didn't necessarily need to hit market prices to spur additional exploration in the Cook Inlet, resulting in ample gas. However, if the correct assumption is a market price for gas, then we should discuss it.
- Chairman Rokeberg: Can our representatives from the gas industry comment?
- Mr. Little: Regarding the organizational structure, as we move across the Paths, we will likely gain efficiencies. So the real critical factors are load and cost of service. Focusing on this may help us get past this.
- Mr. Little: On the second question, it boils down to alternatives, not only externally, but also internally within the gas producers themselves. But without a significant industrial load, exploration gets hard to predict. For modeling purposes, I wouldn't discourage using what you have.
- Mr. Harper: What would be a good market price for gas in this area?
- Mr. Little: I always go back to alternatives. If the pipeline goes in, it could be Henry Hub plus. But you would have to reduce that by transport cost. You could also build LNG, which may introduce different pricing.
- Mr. Harper: What gas price do you use internally to justify your projects?
- Mr. Little: I have to model a range of values, but Henry Hub or NYMEX can be used. I think the less we vary inputs across scenarios, the better. This will allow us to focus on the economics of different levels of business structure, which is the goal of the project.

A discussion ensued where several members of the Advisory Work Group expressed concern that the comparative energy scenarios we use in the analysis could be considered out of context.

Mr. Rose commented if the Advisory Group struggled with the concept, the public would as well. Mr. Harper said clear presentation would resolve the matter and suggested the different energy scenarios and the illustrative IRPs should be carefully defined.

Others commented on the need to make inputs the same across the different energy futures and to select which major projects get built within each scenario. Other discussion centered on the size and timing of major projects within each future. Some thought elements of natural gas based generation hydro and wind would need to exist in each of the possible futures. Others felt there

would need to be a transition period between the present and the time major energy projects come on line, when natural gas fired generation would be the prime power source.

Mr. Harper agreed to change model input approaches to make critical inputs, such as future carbon tax the same across all futures, and to specify in the model what and when major projects get built. Mr. Harper will present a revised approach to reflect the advisory work group's concerns at the next meeting.

Tax and Legal Issues Discussion

- Mr. Strandberg began a discussion of the needs for additional tax and legal analysis for the REGA project: The team has been monitoring the Chugach/ML&P merger commentary closely and it has become apparent that there are tax issues related to ML&P's participation in alternative business structures.
- In light of that, as well as additional comments from Ms. Schnabel, the team felt that the current contract which requires basic identification of tax and legal issues may not be enough for the study. It had been earlier determined that an additional level of tax and legal analysis of organizational structures could make study results more relevant.
- AEA wants to pursue additional tax and legal consultation, but since the last meeting have determined seeking this assistance through AEA procurement rules would unduly delay the project. If we brought in a tax/legal firm under a competitive procurement process, the schedule would be delayed by roughly six weeks.
- Another option could be to use a legal firm under contract with ML&P which could be implemented in a much shorter time frame under an interagency governmental agreement. However, approval by the State's Attorney General would be required.
- Mr. Strandberg explained that he had been contacted by Mr. Fred Boness, ML&P project manager for the ML&P/Chugach Electric merger project. Mr. Boness had devised an approach that may allow ML&P to participate in a Railbelt Grid Authority business entity without negatively affecting the Municipality of Anchorage's tax exempt status.
- Mr. Strandberg had referred Mr. Boness to Black & Veatch, and treated the input as stakeholder input.
- In addition, however, Mr. Boness suggested that the ML&P bond and tax legal consultant, Hawkins and Delafield could be made available to assist the REGA process.
- Mr. Strandberg and Mr. Boness had explored the concept of an intergovernmental agreement to make use of Hawkins and Delafield expertise on short notice. Mr. Strandberg had then decided before going any further the concept should be presented to the REGA Advisory Work Group.
- After hearing to suggested approach Chairman Rokeberg asked if there would be a conflict of interest by hiring one utility's expert, Mr. Strandberg explained Hawkins and Delafield were not presently under contract w/ML&P and would be brought in specifically to address the REGA issue.
- When questioned whether the State would be subsidizing ML&P's work, Mr. Strandberg said work envisioned would be under the REGA scope.

- A question was asked whether other firms could be available. Mr. Strandberg said there may be other firms ML&P could hire.
- One member commented that the hired firm would need to have expertise in municipal and cooperative tax and legal practice.
- After some further discussion, the consensus was to continue to pursue obtaining tax and legal analysis, not only in this avenue but in others as well.
- Mr. Harper: Such tax and legal advice cannot be provided directly through Black& Veatch, because of prohibitions related to our professional liability insurance. If a tax/legal firm is brought on board as part of this project, it would have to be through the State, or under the proposed ML&P arrangement, and not as a subcontractor to Black & Veatch.
- Mr. Foster: Real issues that have been resolved in GVEA FMUS.
- Mr. Rose: So using the ML&P counsel would not cause a delay in the contract?
- Chairman Rokeberg: Would there be a conflict of interest? Would the State be effectively subsidizing their work? Are there other firms that would allow us to work through the constraints of the Procurement Act?

Chairman Rokeberg asked if there are any other comments or statements from the public.

There were none.

The Group concluded that April 29th would be the target date for the next meeting possibly in the Palmer area. But unless otherwise notified, we will next meet in Anchorage.

The meeting was adjourned at 3:14 p.m.