

**Regional Integrated Resource Plan (RIRP) for the Alaska Railbelt
Advisory Work Group (AWG)
August 26, 2009 Meeting Notes**

Advisory Working Group Attendees:

Jim Strandberg	AEA/AIDEA
Kevin Harper	Black & Veatch
Myron Rollins	Black & Veatch
Steve Denton	Usibelli Coal Mine
Mark Foster	Mark A. Foster & Associates (MAFA)
Nick Goodman	TDX Power Inc.
Marilyn Leland	Alaska Power Association (APA)
Norman Rokeberg, Chair	Former State of Alaska Representative
Chris Rose	Renewable Energy Alaska Project (REAP)
Jim Sykes	Alaska Public Interest Research Group (AkPIRG)
Pat Lavin	National Wildlife Federation, Alaska Office
Debbie Schnebel	Scott Balice Strategies

Telephone Participants:

Jim Gooding	Black & Veatch
Luisa Freeman	Black & Veatch
Dick Schober	Seattle Northwest Securities Corporation
Jeb Spengler	Seattle Northwest Securities Corporation
Paul Bloom	Goldman Sachs

Public Participants:

Steve Haagenson	AEA/AIDEA
Bryan Carey	AEA/AIDEA
Doug Ott	AEA/AIDEA
Sean Skaling	AEA/AIDEA
Joe Balash	Governor's Office
Harold Heinze	ANGDA
Mark Fouts	Chugach Electric Association (CEA)
Brian Newton	Golden Valley Electric Association (GVEA)
Bob Butera	HDR
Paul Berkshire	HDR
Ken Vassar	Birch, Horton, Bittner & Cherot
Elizabeth Outten	Alaska Conservation Alliance
Pat Burden	Northern Economics
Rich Wilson	Railbelt Ratepayers
Brian Hirst	NREC
Stephanie Nowers	REAP
Margaret Adsit	Alaska Center for the Environment

Meeting was called to order at 10:15 am by Norman Rokeberg.

Greetings and introductory comments were made by Jim Strandberg and Norman Rokeberg.

- Jim discussed how this project interplays with a number of other initiatives including ongoing discussions of the Utility Task Force regarding the formation of the Greater Railbelt Energy and Transmission Corporation (GRETC), the Susitna re-evaluation project, and transmission modeling.
- Jim noted that the AEA is in regular communications with the Railbelt utilities at three levels: Board, senior management, and staff levels.
- Kevin Harper noted that today's meeting would be principally focused on reviewing the input assumptions that Black & Veatch is proposing to use in the development of the RIRP (see Black & Veatch presentation slide deck [file: "August AWG Meeting – Black & Veatch Presentation.ppt"]).

Discussion Regarding Evaluation Scenarios

- Kevin Harper reviewed the four evaluation scenarios to be considered as part of this project:
 - Scenario 1 - Base case load forecast with all resources included
 - Scenario 1A – unforced selection
 - Scenario 1B – force 50% renewable
 - Scenario 2 - Large growth load forecast with all resources included
 - Scenario 2A – unforced selection
 - Scenario 2B – force 50% renewable
- Chris Rose noted that gas prices will be a key driver of the results and that there is great uncertainty regarding gas prices, particularly given the study's time horizon of 50 years. This is the crux of the entire study.
- Mark Foster noted that the following factors should be the subject of sensitivity analyses, and discussed how these issues were addressed in Chugach's *2006 Generation Plan*:
 - Capital costs
 - Gas costs
 - Hydrology risks
 - Load growth
 - CO2 costs
- Kevin Harper stated that the specific sensitivity cases to be evaluated will be identified once the initial results of the RIRP modeling are available. At that point, the best set of sensitivity cases can be identified to address the driving factors behind the results.

- Jim Strandberg noted that the RIRP project team will look at various financing and rate design options to deal with financial challenges and rate shock.

Discussion Regarding CO2 Costs

- Myron Rollins walked through a series of slides related to potential future CO2 costs. He discussed two specific pieces of Federal legislation (S.B. 2191 – Lieberman-Warner and H.B. 2454 – Waxman-Markey).
- Myron also summarized assessments completed by the Environmental Protection Agency and Energy Information Administration that project the CO2 costs that will result from these two bills. He noted the significant difference between the different estimates and how they vary under different cases.
- Chris Rose noted that if Black & Veatch relies on Waxman-Markey, we should also include Renewable Energy Credits (RECs) as the legislation also includes the development of a REC market. This would increase the value of renewables. He also noted that a voluntary REC market already exists.
- Myron Rollins noted that RECs will be addressed in the RIRP report but not included in the economic analysis as it would represent “double dipping”.

Discussion Regarding Renewables

- Myron Rollins walked through a discussion of the input assumptions that will be used regarding hydro, wind, tidal, geothermal and other renewables.
- **Hydro**
 - Myron Rollins discussed a list of hydro projects that have been identified during the course of the project.
 - He provided details on four hydro projects that will be specifically modeled in the RIRP: Susitna, Chakachamna, Glacier Fork and generic hydro in the Kenai area.
 - Norman Rokeberg noted that support for small hydro does not seem as great as he thought it would be.
 - Chris Rose stated that Wind Energy Alaska is one example of developers pursuing small hydro projects.
 - Mark Fouts stated that the number of small hydro sites in SC Alaska is limited.
 - Brian Hirst noted that 30MW might be too large for the “generic hydro” resource,
- **Wind**
 - Myron Rollins discussed a list of wind projects that have been identified during the course of the project and the screening criteria to be used in determining which projects to specifically model in the RIRP.
 - Based upon these screening criteria, two wind projects would be specifically modeled: BQ Energy/Nikiski and Fire Island. In addition to these two projects,

two generic wind projects would also be included, one in the GVEA service territory and the other in the HEA service territory.

- Jim Sykes how IPPs would be treated in the RIRP.
- Jim Strandberg noted that this is a state policy issue vs. an RIRP issue, but that it is an issue that needs to be addressed.
- Steve Denton stated that 50MW blocks for generic wind may be too large due to integration issues.
- Myron Rollins noted that EPS is in the process of completing a wind integration study which will address this issue. He also stated that Black & Veatch would consider resizing the generic wind resources.
- **Tidal**
 - Myron discussed the potential for tidal power in the Railbelt region and provided some specific information regarding the proposed Turnagain Arm Tidal project.
 - Mark Foster noted that tidal projects should be broken into logical sizes that better matches the size of the Railbelt region.
 - Steve Denton stated that tidal power faces a lot of environmental issues which need to be considered.
- **Geothermal**
 - Myron discuss the input assumptions to be used for the Mt. Spurr geothermal project.
- **Other Renewables**
 - Myron noted that solar will not be included due to its inapplicability to Alaska.
 - Chris Rose mentioned that solar could play a role in the hybrid economy.
 - Pat Lavin also noted that solar could play a role in terms of solar water heating.
 - Myron noted that Black & Veatch is still developing the assumptions to be used with regard to biomass.
 - Jim Strandberg and Jim Sykes both noted that municipal solid waste should be considered.

Meeting was stopped for a lunch break at 12:25.

The meeting was reconvened at 12:45.

- Harold Heinze commented on the potential role for propane as part of the future solution.

Discussion Regarding Demand-Side Management (DSM)/Energy Efficiency (EE)

- Luisa Freeman provided an overview of Black & Veatch’s approach to the evaluation of DSM/EE programs. She noted that the objectives of this effort include:
 - Develop a portfolio of appropriate DSM/EE programs that make sense for the region from a customer, market and economic standpoint.
 - Provide inputs to the RIRP modeling characterizing the DSM/EE portfolio.
 - Suggest program designs and implementation roadmap for consideration going forward that could be implemented at the regional level.
- She noted that limited Alaska-specific data is available due to the region’s limited experience with DSM/EE programs.
- She also discussed a preliminary list of programs for residential and commercial customers.
- Mark Fouts noted that Chugach completed an end-use study in 1992 and agreed to send this information to Black & Veatch.
- Chris Rose noted that REAP will soon initiate a residential EE program and will send information on this program to Black & Veatch.
- Brian Hirst asked whether Black & Veatch would consider Federal stimulus money that is available for DSM/EE programs.
- Jim Strandberg asked whether Smart Grid applications would be included. Kevin Harper responded that this is an issue that will need to be addressed in the future.
- Chris Rose asked whether time-of-use rates and demand response programs will be included. Luisa Freeman noted that they would be addressed either in the analysis or in the report.

Discussion Regarding Natural Gas Risk-Based Assessment

- Jim Gooding provided an overview of the proposed natural gas risk-based assessment.
 - He noted that this analysis is based upon a probabilistic assessment of the various gas supply options and the factors that will affect the resulting availability and price of natural gas.
 - He noted that the original scope of work called for the development of a deterministic forecast of natural gas availability and prices, based upon publicly available information.
 - A probabilistic decision tree will be developed, showing each potential gas supply option as a separate node on the tree.
 - Black & Veatch will work with the producers, Enstar Natural Gas Company, the Railbelt electric utilities and the AEA to develop probabilistic distribution functions for each factor that influences gas availability and process for each gas supply option.

- The result of this assessment will be a forecast of natural gas prices to be used in the RIRP study.
- Jim provided some example graphics that showed the overall structure of the probabilistic decision tree.
- Jim Gooding also summarized the schedule for the completion of the risk-based analysis.
- Jim Strandberg stated that an important contextual element of the RIRP project is the potential restructuring of the Railbelt utilities through the formation of a regional generation and transmission entity, along the lines of the proposed GRETC, and the need to develop a 10-year transition plan.
- Chris Rose asked how future gas supply constraints will be addressed. Jim Gooding stated that Black & Veatch would rely on input from knowledgeable stakeholders and common industry metrics to address these constraints.
- Jim Sykes asked whether the RIRP model will consider utilities increasing the level of their exploration activities and potential ownership in gas field. Jim Gooding stated that this possibility would be included in the probabilistic distribution functions.

Discussion Regarding Susitna Evaluation (see HDR presentation slide deck [file: “August AWG Meeting – HDR Presentation.ppt”])

- Bob Butera and Paul Berkshire of HDR provided an update regarding the status of the Susitna evaluation project.
- They addressed a number of options that could be developed on the Susitna River and provided information regarding the capacity, energy output and capital costs associated with these options.
- They also addressed the need to properly size the storage capability behind the chosen dam option to best fit the energy output with the needs of the region.

Discussion Regarding the Definition of Renewables

- Kevin Harper stated that it was important to develop an appropriate definition of renewables since two of the evaluation scenarios relate to the target of 50% renewables by 2025.
- He stated that Black & Veatch’s proposed definition includes the following elements:
 - The 50% target would apply to the Railbelt region as well as the State as a whole.
 - Existing renewable resources would be included.
 - Technologies to be deemed renewable would include:
 - Large/small hydro
 - Wind
 - Geothermal

- Biomass
- Solar
- DSM/EE programs would not be included in the calculation of the renewables target (i.e., the impact of DSM/EE programs would be in addition to renewables).
- Inclusion of developing technologies would be included in future RIRPs as they become commercially available.
- Jim Strandberg and Chris Rose noted that they thought that tidal and wave energy should be included in the study as renewables.

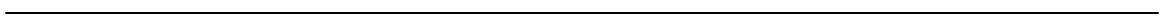
The Group concluded that September 30th would be the target date for the next AWG meeting.

The meeting was adjourned at 3:30 p.m.

ADVISORY GROUP MEETING

August 26, 2009

Meeting Handouts



Regional Integrated Resource Plan (RIRP)
for the Alaska Railbelt
Advisory Working Group (AWG) Meeting
10:00am-3:00pm, Wednesday, August 26, 2009
AEA Board Room, 813 West Northern Lights Blvd. Anchorage

Agenda

Time	Topic	Lead
10:00–10:30	Introductory Comments <ul style="list-style-type: none"> • Welcome • Utility Task Force update • Discussions with Enstar • Mid- to late-September target date for interim results • Timing of draft and final reports • Other comments 	Steve Haagenson (AEA) Jim Strandberg (AEA) Norman Rokeberg (Chair)
10:30–12:30	Project Update <ul style="list-style-type: none"> • Review of evaluation scenarios • Review of selected input assumptions <ul style="list-style-type: none"> ○ CO2 costs ○ Renewables ○ Large load growth demand forecast • Demand-side management/energy efficiency methodology • Natural gas risk-based assessment methodology 	Kevin Harper (B&V) Myron Rollins (B&V) Luisa Freeman (B&V) Jim Gooding (B&V)
12:30–1:00	Lunch Break	All
1:00–1:45	Project Update (continued) <ul style="list-style-type: none"> • Definition of renewables • Initial portfolio of backbone transmission investments 	Kevin Harper (B&V) Kevin Harper (B&V)
1:45–2:15	Susitna Analysis Update	Bryan Carey (AEA) Bob Butera (HDR)
2:15–2:50	Other Topics <ul style="list-style-type: none"> • Additional public education and outreach activities, including communications regarding RIRP results • Important project activities over next two months • Others? 	Jim Strandberg (AEA) Kevin Harper (B&V)
2:50–3:00	Concluding Comments	Steve Haagenson (AEA) Jim Strandberg (AEA)