

Natural Resources Committee

11/28/07

7:30 a.m.

GFCC Conference Room

Attendance: Tom Bundtzen, Chair; Bud Fate; Steve Haagenson; Cal Skaugstad; Gale Skaugstad; Bill Brophy; Lorna Shaw; Diane Hutchison; Mary Bishop; Dick Bishop; Rhonda Boyles; Jennifer Yuhas; Roger Burggraf; and Michelle Gibson.

1. **Call to Order:** Tom Bundtzen called the meeting to order at 7:30 a.m.
2. **Roll Call.**
3. **Approval of Minutes from November 21st, 2007, Resource Committee Meeting:** Motion: Bill Brophy, Second: Lorna Shaw; approved as corrected-- Dana Novak with NALCO not with CMI
4. **New members:**
 - a. Dick Bishop, with the Alaska Outdoor Council, and leads on Agriculture, and Operating Union. Waiting to hear back on several.
5. **Cost of Energy Powerpoint Program—Steve Haagenson**
 - a. Two years ago, FEDC put together the Interior Issues Council think-tank.
 - b. Cost of Energy Taskforce
 - i. Fairbanks pulling together and asking the tough questions to find an energy solution.
 - ii. Partnering with: FEDC, utilities, industry, environmental community, University of Alaska-Fairbanks, CCHRC, government.
 - iii. Finding common ground in a diverse group.
 - c. Developed an energy model which based recommendations on all energy coming into Fairbanks. Also asked by Mayor Jim Whitaker to look at issues around PM_{2.5}.
 - d. Energy Taskforce process
 - i. Recharge existing taskforce and add new impassioned members.
 - ii. Identify issues to be addressed.
 - iii. Form work groups.
 - iv. Create business plan.
 - e. List of about 30 task force members.
 - f. Issues to be resolved:
 - i. PM_{2.5}--particulate matter under 2.5 microns.
 - ii. Municipal waste, paper, plastics, tires, wood, and metals.
 - iii. Cost of Energy—our original goal: reduce the cost of energy.
 - iv. Sustainability—fuel for the 100-year plus timeframe.
 - v. Global Warming--CO₂ reduction--taxed if don't
 - vi. Green energy—helping ourselves and others meet Renewable Portfolio Standards (RPS).
 - vii. Economic Development—local jobs, economic diversification and growth.
 - viii. Wildfire mitigation—fire buffers around populated areas.
 - ix. Compatible products—use FT (Fischer-Tropsch) fuels in existing infrastructure.
 - x. Fuel Supply—fuel that is vertically integrated, economic, long-term stable prices and sustainable.
 - g. Looming Energy Issues
 - i. TAPS—pipeline could shut down by 2014—low volume.

- ii. Anchorage Gas Supply—Anchorage could run out of gas by 2011.
- iii. Bullet line—not built until 2011.
- iv. Natural Gas Pipeline—line not built until 2017-2022.
- v. Kenai gas supply—No additional gas found.
- vi. Aging Generation—1,000 MW to be replaced in next 10 years.
- vii. Cost of crude oil—Crushing the economy throughout Alaska.
- viii. Joint Utility Planning—Multiple directions and goals
 - 1. Discussion: Cal Skaugstad, Steve Haagenon, Bud Fate, Rick Solie
 - a. Heard not running out of natural gas, just cheap gas;
 - i. running out of gas
 - b. Whether most people know it, Anchorage is the most subsidized place in the world for natural gas.
 - c. In Anchorage, big issue is storage—when a well is shut down well for awhile, it doesn't come back to the same place for awhile—if shut down for a month, it could take 3 months to come back
 - d. Running out of cheap gas and the market needs to come to equilibrium price—market issue.
 - e. If running out of cheap gas—why incentivize them to look for new gas if you are not running out of old gas. If talk to Anchorage, issues are gas supply and deliverability—schedule now by hour instead of month
- ix. Work Groups
 - 1. Waste to Energy
 - 2. Biomass
- x. Strategic Business Planning
 - 1. Executive Summary
 - 2. Marketing Plan—lower cost of total energy strategy
 - 3. SWOT analysis completed in draft
 - 4. Services and products--Syngas (carbon monoxide and hydrogen); electricity; FT Fuels
 - 5. Structure and Organization—non-profit, low profit, etc
- xi. Energy Flow Model
 - 1. Electric—petroleum, coal, natural gas, hydro
 - 2. Space heating—Petroleum, coal, natural gas, wood, electric
 - 3. Transportation—Petroleum
 - 4. Resident
 - 5. Commercial
 - 6. Industrial
 - 7. Base yearly Total: \$434,700,000
 - 8. Long-term yearly total: \$337,800,000
 - 9. Goal is to reduce cost of residential energy—this is the annual model
- xii. Financial Model
 - 1. Fuel Sources—Municipal Waste
 - a. Coal: \$1.92/mmBTU
 - b. Biomass: \$4.17/mmBTU

2. Gasification--\$6.25/mmBTU
 3. Fischer Tropsch \$14.29/mmBTUC \$1.86/gallon
 - a. Jet A
 - b. Naphtha
 - c. FT Diesel
 4. Combustion, Gas Turbine
 - a. Electric kHz \$.72/kwh
 5. Natural Gas--\$49
 6. Diesel--\$29.90
 7. Solar--\$204.25--.6971/kWh
 8. Direct Combustion-CHP--\$18.56--.0633
 9. Wind--\$24.61--.0840
 10. Geothermal--\$17.10--.0584
 11. Hydroelectric--\$16.36--.0558
 12. Conservation/efficiency improvements--\$(5.93)--.0203
 - a. Talked about forming another company to do assessments, make recommendations on how to make more efficient, then funding
- xiii. Options Sorted by Price
- xiv. Draft Recommendations:
1. Short, mid, and long term
 2. Short-term—conservation of energy through weatherization and efficiency increases
 3. Mid-term--Gasification for existing gas turbines; 5,000 bpd FT plant
 4. Long-term—600 MW Susitna Hydro project and interties and 100 MW Mt. Spurr Geothermal Project
 - a. Discussion: Mary Bishop, Steve Haagenon
 - i. What was the big thing against the Susitna Dam before?
 1. Anti-Development and fishing issues.
 5. Does this plan achieve our goals?
 - a. PM2.5 significantly reduced due to Ultra Low Sulfur FT fuel
 - b. Municipal Waste—resolved waste-to-energy by gasification
 - c. Cost of Energy—significant reduction
 - d. Sustainability—long-term with coal, sustainable with aspen/willows
 - e. Global Warming—zero from hydro, carbon neutral with aspen/willows
 - f. Green Energy—yes with hydro, geothermal and aspen/willows
 - g. Economic Development—yes, local jobs, economic diversification and growth, increase in disposable income
 - h. Wildfire Mitigation—yes, with strategically harvested aspen/willows (they don't burn well)
 - i. Fuel Supply—Fuel that is vertically integrated, economic, long-term stable-priced and sustainable

6. Planning to reduce the impact
 - a. TAPS—shutdown would not impact energy costs.
 - b. Anchorage gas supply—no impact to energy costs in Fairbanks.
 - c. Bullet line—no impact to energy costs in Fairbanks.
 - d. Natural gas pipeline—no impact to energy costs in Fairbanks.
7. Dreaming together to power Alaska (not recommendation)
Called a Hybrid Aircraft—not developed commercially
 - a. Fuel delivery to rural Alaska
 - b. Return Ballast
 - c. Freight
 - d. People
8. Across U. S. looking at Nuclear and Coal—Not looking at natural gas—no gas supply—tough issues in lower 48—90% of Anchorage is natural gas. In Fairbanks have diversified fuel supply.
9. Just looking at cost of energy—TAPS shutting down not impact though would affect economy.
10. Review of energy sources of costs and different fuel types, etc
11. Comparable pricing structure, etc, for Geothermal, hydro, conservation/efficiency
12. CO₂ tons with fuel switching to hydro/biomass/geothermal—slide comparing different sources
13. Questions: Mary Bishop, Steve Haagenson, Rhonda Boyles, Rick Solie, Tom Bundtzen, Bud Fate, Cal Skaugstad, Roger Burggraf, Bill Brophy
 - a. What is the Carbon Tax
 - i. Federal CO₂ tax being talked about in Congress for utilities
 - b. What are 1990 levels of CO₂?
 - i. 2,000,000 tons—same as now
 - c. What about plug-ins? Is it not helping?
 - i. Makes it worse if anything.
 - d. Fascinating committee. If able to achieve any of these, it would be huge, but economics will drive where things go.
 - e. Comment about Biomass—talking about 2,000 acres a year and enormous land-clearing issues.
 - i. Why starting with coal because don't know a lot about biomass. Need space diversity.
 - f. See coal missing in the Financial model, the one stable and low cost energy source. As primary fuel, remarkably cheap—know issue of carbon dioxide, greenhouse—people working towards sequestration.
 - i. Shutting down coal powered in lower 48, and not building. New era where world is demanding lower CO₂. Not a single

sequestration technique is in commercial use.

- g. Did discuss cost of nuclear—recent development where a European company contracted with Russia for \$30 billion to construct new nuclear plants, and ensures automatic shutdown, but deemed impossible for the new technology to runaway. Capital cost is beginning to decline—didn't go over nuclear because of costs and fear factor. Didn't consider major influence on cost of fuel—but do think day is coming where considered because of new technology
- h. A lot of model is centered on Susitna with hydroelectric—good luck.
- i. Nuclear comparable to hydro.
 - i. Problem with nuclear is 200 mw. Looking at Galena for site, but typical nuclear plants are 4 times what we need in Alaska
- j. Talking about hydro, but how long take to build something?
 - i. Doable but need financing. 10-year window. Talking about Susitna again—environmental community better with it now than in the past
- k. Advocates strong use of coal—coal is abundant in Alaska, and have 50% of coal resources in the U. S. here, it is affordable, and think we've taken reasonable measures to protect the environment in mining and burning. All have an obligation to do tremendous amount of research—based on science and not emotions. Last comment is Steve Haagenson with over 30 years at GVEA, has been recognized with several different awards for all things he's done for Interior—wish him well.
- l. Put in plug in for IIC, and always looking for public input. Way for people in Fairbanks to make it a better place. Can get the full strategic business plan and powerpoint on the FEDC website at www.investfairbanks.com.

6. Other Discussion:

- a. Working on program for 12/5 about fish hatchery—will hold in the Usibelli Conference Room
- b. Possible program is Mining Tax impact with Rich Hughes
- c. Thought Karl Hanneman did an excellent job. Small mining companies don't contribute that much—large companies pay the majority of taxes and royalties.
- d. Lorna Shaw is trying to put some facts together. Wants to see some renewable resource issues discussed here. Continue to work on programs too.

7. Meeting Adjourned.