

Haines Borough Energy & Sustainability Commission
 Stephanie Scott, Coordinator
 Coordinator Monthly Report
 September 26, 2008

Local Energy Prices

Local Residential Energy Price Update: Fuel data gathered 9/22/08

Energy Class	Price	Supplier
Stove Oil	\$5.011/gal/delivered	Delta Western
Furnace Oil	\$4.99/gal/delivered	Delta Western
Propane	\$4.03 + tax/gal/delivered	Haines Propane
Unleaded Gas	\$4.649/gal/pump price	Delta Western
	\$4.579/gal/pump price	Big Foot
	\$4.589/gal/pump price	Tesero Alaska
Diesel	\$5.239/gal/pump price	Delta Western
	\$5.179	Big Foot
	\$5.179	Tesero Alaska
Electricity, residential rate per kWh	\$.1457 /kWh inclusive of PCE ¹ credit for first 500 kWh	AP&T (Haines, Mud Bay, Lutak, Skagway)
	\$.2357/kWh inclusive of PCE credit for first 500 kWh	IPEC (Inside Passage Electric Cooperative serving the Upper Chilkat Valley & Klukwan)
Electricity, monthly residential customer charge	\$11.86	AP&T
	\$10.00	IPEC

I am keeping track of energy costs on an Excel spread sheet. Please let me know if you would like to have an electronic copy of the sheet for your own purposes. Other categories of electric rates for AP&T are A-1 Bulk Power (\$.2307/kWh), A-2 Bulk Power (\$.1965/kWh with a Demand Charge per KW of \$6.59) and A-3 Bulk Power (\$.1893/kWh with a Demand Charge per KW of \$5.42). Similar categories exist under Inside Passage Electric Cooperative.

Electricity vs. Oil vs. Propane

¹ Please see the attached Power Cost Equalization (PCE) explanation from the Regulatory Commission of Alaska (RCA)

Break Even Point Electricity vs. Propane

Local resident Ron Jackson has developed an analysis that compares the cost of heating with electricity, wood, oil, and propane. The break-even point between electricity and propane seems to have been achieved under the efficiency assumptions behind Chart A. Chart A makes the following assumptions:

			Assumed efficiency	Oil-equiv.
Electric	3,413btu	per/kwh	1.00	40.727kwh/gal oil
Propane	91,500btu	gal	0.95	1.519gal/gal oil
Oil	139,000btu	gal	0.90	1.000gal/gal oil
Wood	25,500,000btu	per/cord	0.70	0.005cord/gal oil

If you change the assumption of efficiency for oil from .90 to .75, it drops the “break-even” point between oil and electricity to \$4.50/gallon (see Chart B). However, please bear in mind that the Power Cost Equalization Credit heavily subsidizes our residential electricity rates. Chart C shows what the break-even points would be without the PCE.

Switching to Electric Heat in Haines

Setting aside the question of when an increase in demand in Haines will trigger a requirement for AP&T’s to supplement hydro with diesel, Danny Gonce, AP&T power supervisor in Haines, offers the following advice re service connection size. Mr. Gonce writes:

One concern that I will have as people move to electric heat is the service connection size to customers’ buildings. Also the circuits within the customers’ building would have to be upgraded to handle the load. We have a fairly older average home age, and the older standard residential service size was 100 amps. Any kind of electric heating load can easily be over half that amount, especially if using the electric on demand domestic hot water heaters... those are in the 80-amp range. Customers would be responsible for upgrading their own connection between the transformer and the service entrance on the structure. The distribution system in Haines is fairly well sized to handle an increase in load, although the individual transformers on the lines will need to be upgraded for a large portion of the customers, especially where there is more than one customer on a transformer. This would be if everyone all of a sudden switched... likely not everyone will change at the same time, so some of the upgrades can be eased into overtime. (Email communication September 23).

I have requested AP&T Regional Manager Stan Selmer to project what level of increase in demand will trigger bringing diesel on line to supplement hydro in the AP&T grid. I have also asked for the status of the development of a signaling system to let Haines residents known when diesel generated power is imminent.

Cost of operating small appliances in a Haines home based on AP&T and IPEC rates. A helpful chart of the cost of operating appliances was circulated in Juneau during the Sentisham electrical crisis. I have modified it to reflect residential energy rates in Haines. One sheet references AP&T rates; the other references IPEC rates. I am attaching PDF versions of the spreadsheets. Please request the full Excel workbook. The cost to operate any appliance can be calculated with this formula:

$$\text{Operating cost} = \text{wattage}/1000 \times \text{hours used} \times \text{cost/kilowatt-hour.}$$

Municipal Energy Consumption

As of this date, I am nearing completion documenting three years of data on heating fuel and kilowatt consumption in all Borough facilities. The data will be easily updated monthly from this point forward.

Energy Assistance Programs

Heating Assistance Program (HAP)

Information about the Alaska Heating Assistance Program (HAP) can be viewed at

<http://www.hss.state.ak.us/dpa/programs/hap/>. An application for assistance can be downloaded from that site, but I have also attached the 12-page PDF application document to this report. The website introduces the program as follows:

Heating Assistance News

You may qualify for heating assistance this winter even if you have been denied in the past for being over income. Prior to this spring we only operated the federally funded LIHEAP program that capped income at 150% of the poverty income guidelines. In May of 2008, the State Legislature created the Alaska Heating Assistance Program (AKHAP) for households with income between 150% and 225% of the poverty income guidelines.

It is easy to apply. You can pick up an application at any Department of Public Assistance office, download one at <http://www.hss.state.ak.us/dpa/heat> or call 1-800-470-3058 to request an application by mail. It can take up to 45 days to process your application. The fastest way to receive benefits is to make sure your application is completed in full and you have attached any necessary documentation. Payments are made directly to your heating vendor and a notice will be sent to you informing you of your benefit amount if you are found eligible.

Weatherization

Alaska Community Development Corporation (ACDC) (1-800-478-8080) will be in Haines, October 27-31st to do assessments. They will bring three inspectors and complete all qualified applicants assessments at that time.

Home Rebate Energy

Certified Energy Rater Johnny White (766-2696) has performed 33 Home Energy Rebate As-Is Assessments. He has 23 to do. Post-Improvement Ratings will follow all As-Is ratings after the client has performed the recommended conservation and efficiency measures. The level of improvement *As-Is* compared to *Post* determines the amount of expenditures eligible for reimbursement. Johnny is scheduled to travel to Tenakee for a week to perform 8 ratings there.

Upper Lynn Canal Renewable Energy Projects

Haines Biomass Project. Tuesday, September 23, the Haines Borough Assembly unanimously adopted Resolution 08-09-137, "Supporting Further Resource Reconnaissance, Feasibility Analysis, Resource Assessment, and the Conceptual Design of a Wood Fired Heating System to Serve Municipal Facilities."

Two weeks ago the Assembly authorized funds to hire an engineering firm to prepare a grant application to the Renewable Energy Fund for the above biomass project. CE2 Engineers is on the job.

I have transmitted heating fuel cost data for the K-12 school, the administration building, and the library. I have also prepared a statement describing Haines' capacity to manage a project based on its successful completion of the K-12 school.

I have spent time learning about the Haines State Forest Management Plan. Here are some facts that might come in handy. The facts are taken from the Department of Natural Resources, Division of Forestry, Coastal Region, NSE Area Haines State Forest Five-Year Forest Management Schedule, January 1, 2008 through December 31, 2012, available for download from http://forestry.alaska.gov/pdfs/08fyfms_%2008-12.pdf

- The Haines State Forest is 286, 208 acres of which 41,652 acres are commercial forestlands available for timber harvest (p.2)
- Five thousand eight hundred eighty (5,880) MBF (million board feet) net Scribner volumes are scheduled for harvest annually from lands in the designated commercial timber acreage. This is about 300-580 acres (p. 2).

- Ten cords per year per person of dead or down timber for personal use will be made available, generally at no charge (p. 3)
- Clear cutting is the primary method of commercial timber harvest. Clear cuts may not exceed 160 acres without agency review and approval of the Commissioner as stated in the HSFMP (Haines State Forest Management Plan) (p.3)
- Timber is harvested on a 120-year rotation period (p.3)
- The Division of Forestry is prepared to supply enough volume to the market for biomass as an alternative fuel to help that market become a viable component of renewable energy development in the vicinity of the Haines State Forest timber supply (p.4)

Chapter 2 of the Haines State Forest Management Plan, originally adopted in 1985, revised and adopted in 2002

<http://forestry.alaska.gov/management/hainesplan.htm> shows that there is approximately 88,000 acres of timber land (Sitka and Hemlock) in the Haines State Forest; about 47% of that land is in the commercial timber base. There are stands of cottonwood that are not considered “forest land” and are not in the timber base. Roy Josephson, local forester, provided this information. I was seeking information in response to a locally expressed “worry” that “too much” of the forest was scheduled for harvest.

Activity in the Haines State Forest must be compatible with the purposes for which the forest was legislatively established in 1992. According to the DNR website those purposes are the utilization, perpetuation, conservation, and protection of land and water through multiple use management (<http://forestry.alaska.gov/management/hainesplan.htm>).

It is important to identify the local infrastructure available to harvest the required biomass supply and to bring them to the table to discuss their vision of their involvement.

Skagway West Creek Hydro Project

The Municipality of Skagway has developed a memorandum of understand (MOU) with Alaska Power & Telephone to apply for a renewable energy grant to determine the feasibility, conceptual design, and permitting of a hydroelectric project on West Creek River in Dyea. The Municipality of Skagway and AP&T will share the grant application expenses 50/50, with a \$5000.00 cap on the Municipality’s share. AP&T personnel will prepare the application. The Municipality also agrees to “...negotiate in good faith with AP&T to allow for the operation and maintenance of any constructed hydroelectric project on West Creek that comes as a result of the grant application process.” According to Stan Selmer, (email, September 26, 2008)

While AP&T is not interested in building a run-of-the-river project such as West Creek, we are interested in assisting the Municipality of Skagway in their efforts to look at the feasibility, design, and construction of a project on

West Creek. If it is deemed feasible and there is money to build it and it is permitted and built, the Municipality will control who gets the power.

Our MOU with the Municipality of Skagway allows us to file a grant for and with them, allows us to have input into the preliminary and final design as well as negotiate for operation and maintenance rights of a "built" project on West Creek. While I can't speak for the Municipality it would seem that if there were excess hydro available beyond the need to power cruise ships, that any excess could be sold to AP&T and their ratepayers if there was a need. But, this would be at the discretion of the Municipality, not AP&T.

AP&T Hydro Projects

Kasidaya Creek Hydro. Stan Selmer writes, "We hope to have water in the penstock in October.....no specific date has been targeted.....we are continuing to bed the penstock with gravel to provide a sound base for the pipe. This will continue until water is introduced into the pipe" (email September 24, 2008). In an earlier email (April 14, 2008) Mr. Selmer speculated that the addition of Kasidaya Creek to the power generation capacity "may meet any increase in demand from May through October for the next 5 years."

Connelly Lake. Mr. Selmer writes, "We are a couple of weeks away from putting an update on the AP&T website. We are also applying for grant money for this project" (email September 24, 2008). In an email September 26, Mr. Selmer explained:

AP&T is pursuing Connelly Lake Hydro as the next project for the ULC grid, not the West Creek Project. Connelly is needed for several reasons, but the 3 basic reasons are - 1)Goat Lake has reached capacity (4MW); 2)A storage project is the only type project that can increase year-round capacity; 3)Haines, in the event of a cable disaster, could be stranded from hydropower.

Regional Activities/Reports

Juneau Hydroelectric Power Crisis Lessons Learned Commission Draft Report characterizes the loss of power as a "sub-disaster" – an event where lives and property are not threatened, but which nonetheless requires a rapid response by the Community to mitigate the effects of economic hardship or disruptions to business or transportation (p. 19). This is a "must read" document as the Commission prepares to address a plan for reducing energy consumption "in a hurry" should the Haines Borough be exposed to a similar extreme disruption in its energy supply. Download the report from <<http://www.juneau.org/energy/LessonsLearned.php>>.

"Sustainable Juneau" blog. The Juneau Commission on Sustainability reaches out with "Sustainable Juneau" blog at <http://sustainablejuneau.blogspot.com/>.

Commission agenda and minutes can be found at
http://www.juneau.org/clerk/boards/Sustainability/Sustainability_Commission.php

Upcoming Conferences

5th annual **Bioneers in Alaska Conference**," Creating Sustainable Communities" October 17-19, 2008, University of Alaska, Anchorage. The annual Bioneers in Alaska conference brings together Alaskans to explore practical and innovative ways to live more sustainably and strengthen our communities. Highlights of the 2008 conference include: keynote speakers David C. Korten and Lisa Dolchok, workshops on renewable energy for Alaska, growing community through local food, protecting the health of present and future generations and other vital issues of our times, presentations via satellite from the 19th Annual Bioneers Conference in California and abundant networking opportunities. Save on conference fees when you register early (the early registration deadline is September 21). Academic and CEU credits available. Scholarships and Work Exchange opportunities available. Bioneers in Alaska is for everybody! For more information or to register, visit www.sustainak.org, or email info@sustainak.org
<https://ffmah.email.uaf.edu/webmail/src/compose.php?send_to=info%40sustainak.org>. Phone: (907) 677-9087. Bioneers in Alaska is a project of the Alaska Center for Appropriate Technology.

Southeast Alaska Wood Energy Workshop, Sitka Alaska, October 29th and 30th. Presenters include Steve Haggenson, Executive Director, Alaska Energy Authority; Charlie Walls (Sitka Electric), Allen Brackley (US Forest Service), Forrest Cole, Charlie Steuli (US Forest Service, Tongass) Bryan Beck (Beck Group, Portland, OR), Stephen O'Brian, (US Forest Service, MT); Jon Bolling, City Manager, Craig, AK – Craig Wood Boiler; Ben Johnson – Petersburg Biomass Facility; Percy Frisby, Tlingit & Haida Central Council; Ron Brown, Wood Energy Projects, AEA; Dan Parrent; Steve Seley, Pacific Log & Lumber, Ketchikan; Dave Atkins, US Forest Service, Fuels for Schools, MT.

Federal Legislative Activity

Senate approves extensions of expiring tax credits for clean renewable energy and energy efficiency.

Sep 23, 2008

Senate Committee on Energy & Natural Resources

With a 93-2 vote, the Senate approved the long-stalled extensions of expiring tax credits for clean renewable energy and energy efficiency. The energy tax credits are part of a larger tax extenders bill (H.R. 6049) which includes other business and personal tax credits and a one-year "patch" for the Alternative Minimum Tax (AMT). The measure now travels to the House for final reconciliation. Solar and wind industries say renewable energy tax incentives are

crucial if they are to become significant sources of energy in the near future.

Credits for taxpayers include a credit up to \$7,500 for purchasing plug-in electric cars, and production credits for wind, biomass, marine (waves and tide) facilities. There are incentives to use smart meters² for more efficient home energy use and to promote ocean coal and biodiesel production.

Attachments:

- Power Cost Equalization
- Break Even Analysis Charts A, B, C
- Energy Cost of Appliances: Haines Residential Rates
- Energy Cost of Appliances: IPEC Residential Rates

² The term "Smart meter" typically refers to an electrical meter, but the term is also starting to be applied to the measurement of natural gas and water consumption. "Smart Meters" provide real-time usage data to the consumer instead of simple total consumption so that consumers can manage their consumption more effectively. "Smart metering" is particularly effective when there is differential kWh/prices throughout the day due to constraints on the grid (the grid has to buy more power to meet demands, thus the price per kwh can fluctuate depending on rates charged by different suppliers).

Memo

To: Haines Borough Energy & Sustainability Commissioners
From: Stephanie Scott, Energy & Sustainability Coordinator
CC: Julie Cozzi, Borough Clerk
Date: September 30, 2008,
Re: Additional Information for September 30, 2008 Monthly Report

Electric Grid Hydro Capacity: We are entering the time of year when “peak demand” may need to be met by diesel. Stan Selmer, AP&T Regional Manager, provided the following in an email 9/26/08:

With the drop off of seasonal hydro at Dewey, Lutak, and 10 Mile we are getting close to peaking diesel. But, we may water up the Kasidaya project within the next 2 weeks and push the peaking diesel to the back burner for a couple of more months. Eventually though Kasidaya will be shut down due to lack of water and daily peaking could begin.

We have received an average amount of rainfall this Fall so far, which along with Kasidaya coming on line shortly could put us in pretty good shape to avoid the "make-up" diesel we had to run last year. As far as peaking diesel goes, we'll advise, through the media, when we start having to peak and during what hours the peaking is taking place. We could arrange for Danny's staff to call your office if that would help get the word out too.

Wood Heat Renewable Energy Fund Grant Application:

There will be a 2 PM teleconference Friday, October 3, in the Haines Borough Manager's office to review the draft application.

Home Energy Rebate Program

According Anchorage Daily News reporter Megan Holland, Alaska Housing Finance is reorganizing the system for contacting an energy auditor:

Alaska Housing Finance Corp. later next week plans to untangle some of the mess by setting up a central database of people like Iden who want a rater. The state housing agency will run the first-come, first-served list of pending inspections, instead of the raters having their own long waiting lists;

the raters then will go to AHFC to get the name of the next customer.

Spokeswoman Sherrie Simmonds said the housing agency crafted the new plan after it became obvious the current system isn't working. "We were hearing back from people who were pretty stressed out."

See the full article, "Popularity Overwhelms Energy Rebate Program," at <http://www.adn.com/anchorage/v-printer/story/540118.html>. Johnny White, the local Energy Auditor is out of town until October 6 and could not be reached for comment.

Weatherization

Haines is allocated enough funds to weatherize 30 homes under this program. Residents should continue to submit applications. Thirteen (13) homes will be inspected Oct. 27-30th.

Wind Resources: AEA Anemometer Loan Program

The purpose of the program and the responsibilities of the participant are described on the AEA Anemometer website <http://www.akenergyauthority.org/programwindlanemometerloan.html>.

The Anemometer Loan Program is aimed at communities with the potential for utility grade wind energy projects. This program supplies meteorological "met" towers, data logging equipment, and technical support to utilities and communities interested in wind power production. Wind resource potential is quantified by collecting wind speed and direction data, as well as temperature for air density calculations. After a year's data is collected the program's towers are then relocated to other communities.

AEA's Wind Resource Assessment specialist, James Jensen (jjensen@aidea.org; 1-888-300-8534) stated that the Haines Borough could submit a Statement of Interest to site a 30-meter MET Tower in Haines. Two landowners, Pat Phillipott (480 acre native allotment, 10.8 Mile Haines Highway) and Stan Jones (Valley of the Eagles golf course) are interested in participating in the Assessment program.

Jensen explained that "utility grade wind energy projects" required a wind class of 5 or greater. There are 7 classes. Winds in the Class 6 ranged formed the basis for the viability of the 300 kW turbine now located in Toksook Bay, Alaska. Haines Airport data from a 10-meter tower show Class 2 winds, categorized as "marginal" power rating. You can download reports from Toksook Bay, the Haines Airport, and other sites in Alaska from <http://www.akenergyauthority.org/programwindresourcedata.html>.

The link to the Met Tower Overview at the above referenced web address describes the responsibilities of a participant in the program:

As a participant in the Alaska Energy Authority's Wind Energy Resource Assessment Program, you have several responsibilities to make this program work effectively and to ensure the best possible data collection for your community. These tasks are outlined in the Statement of Interest document and in the Memorandum of Agreement. AEA will ship the equipment, and can provide assistance with installation. ... In addition to optimal tower placement from an energy production standpoint, factors such as avoiding turbulence, distance to transmission lines, avian interaction, and noise and visual impacts will also be considered. Prior to shipment of the tower and monitoring equipment, AEA requires a signed Memorandum of Agreement, a copy of any Land-use Agreements, and the Participant to contact both the Federal Aviation Administration and the US Fish and Wildlife Service.

As you can see, there are formal documents to be filed with a variety of agencies prior to the arrival of the MET Tower; however, the initial statement of interest is straightforward and requires only the identification of the participants, sites, and readiness of the Borough **“to install and operate a MET tower.”** Clarification of “install and operate” is being sought. Moreover, the program is currently under funded so the earliest we could expect a tower to be installed is next summer. Do you wish to recommend that the Borough manager consider submitting a statement of interest on behalf of the Haines Borough for participation in this program?