

Haines Borough Energy & Sustainability Commission

Stephanie Scott, Coordinator
 Coordinator Monthly Report
 December, 2008

Local Retail Energy Prices

On average, unleaded gasoline is thirty cents less expensive per gallon in the Chilkat Valley today compared to this time last month. Diesel is over seventy cents less per gallon. Number one stove dropped by \$0.55 per gallon, but number 2 furnace oil stayed the same at \$4.130 per gallon. Although Haines prices continue to exceed prices in comparably situated (Skagway) and sized (Craig) southeast Alaskan towns, the average price of diesel in Haines is slightly lower than the price of diesel in Juneau. The larger metropolitan areas likely drive the low Alaskan averages of \$2.629 for unleaded gasoline and \$3.675 for diesel.

Comparable Averages Posted on <http://www.fuelgaugereport.com/AKmetro.asp> (AAA) v. locally calculated HAINES Average

Unleaded	National	Alaska	Juneau	Anchorage	Fairbanks	Craig*	Skagway**	HAINES
11/18/08	\$2.068		\$3.299	\$2.917	\$3.023	\$3.899	\$3.800	\$3.961
12/18/08	\$1.670	\$2.629	\$2.942	\$2.432	\$2.528	\$3.459	\$3.450	\$3.659

Diesel	National	Alaska	Juneau	Anchorage	Fairbanks	Craig*	Skagway**	HAINES
11/18/08	\$2.961		\$4.649	\$3.895	\$4.053	\$4.169	\$4.110	\$4.779
12/18/08	\$2.529	\$3.675	\$4.199	\$3.497	\$3.511	\$3.889	\$3.560	\$4.023

Heating Fuel - all prices are before sales tax. Craig tax is 5%, Skagway 3%, Haines 5.5%

		Craig*	Skagway**	HAINES
#1	11/18/08	\$3.711	\$3.379	\$4.150
#2	11/18/08	\$3.641	\$3.721	\$4.130
#1	12/18/08	\$3.460	\$3.550	\$3.600
#2	12/18/08	\$3.360	\$3.450	\$4.130

November Municipal Energy Consumption

Consumption of heating fuel and kilowatt-hours rose in November. Consumption of vehicle fuel fell. Consumption of heating fuel rose more steeply than consumption of kilowatt-hours. However, that steep rise can be nearly completely explained by delivery schedules. For example, Mosquito Lake School had no deliveries for six months and then took on 1,332.1 gallons in November. The Library was in a similar situation, having had no more than 16 gallons delivered in the past 5 months, and then taking on 299 gallons in November. Similarly,

the new Public Works shop has not had any deliveries for the past 6 months; 351 gallons were delivered in November.

Data that needs to be explained is the difference in fuel delivered to the school November 2007 compared to November 2008. There is a big difference.

	November 2008 Fuel Oil Gallons Delivered	November 2007 Fuel Oil Gallons Delivered
K-12 School Buildings & Pool	5,094.10	13,675.20

I believe the difference can be attributed to the period of time when a heat plant was running for the old high school and the heat plant was running simultaneously for the new K-12 building. It would be tempting to attribute the difference to improved efficiency but I don't think that is the case. However, I have sent inquiries (12/17/08) to Dwight Nash and Michael Byer. Here is the breakdown:

November 2008 deliveries breakdown as follows:

K-12: 3500.1

Voc. Ed: 261.4

Mosquito Lake: 1332.60

November 2007 deliveries:

K-12: 4614.3

Voc. Ed: 247.1

High School: 5,471.30

Elementary: 2,559.5

Mosquito Lake: 783

The Chilkat Center, on the other hand, seems to consume steadily, having taking on 1442 gallons in October and now another 1330 gallons in November. There is some question about whether or not the size of the Chilkat Center tank (5000 gallons) leads to large and perhaps unnecessary deliveries. Judy Erekson suggests coordinating fills with low fuel prices. I have submitted this suggestion to the Facilities Technician and to the Manager.

The most significant decrease in kilowatt-hour consumption in November was in the Ice House (10,280 down to 3,320, 68% decrease), in the Visitor Center (934 down to 749, 20% decrease) and the Sewer Treatment Plant (15,640 down to 14,320, 8% decrease). The ice house and Visitor Center decreases can be explained by seasonal use, but the Sewer Treatment Plant decreases may be a function of conservation efforts employed by staff.

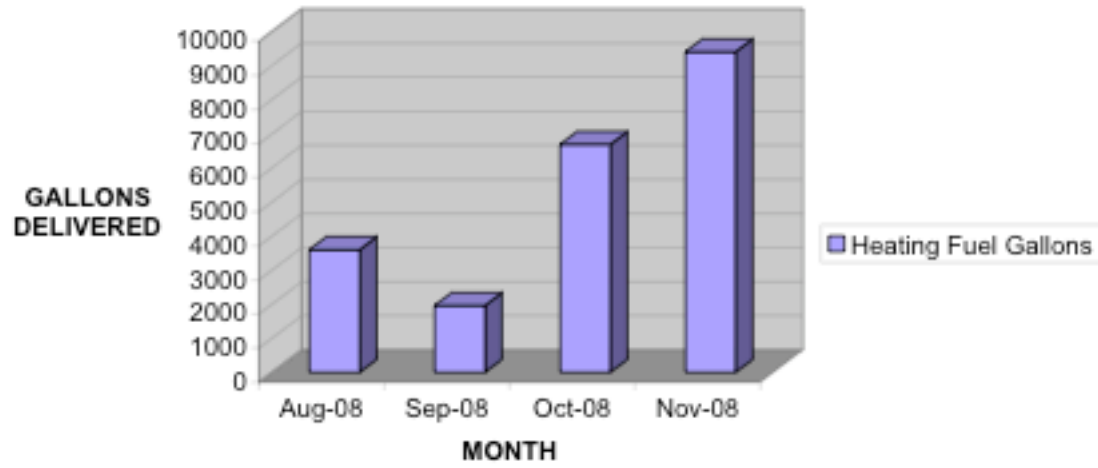
The most significant increase in kilowatt-hour consumption in November seemed to occur in the following areas:

Significant Increases in Kilowatt-Hour Consumption October-November 2008

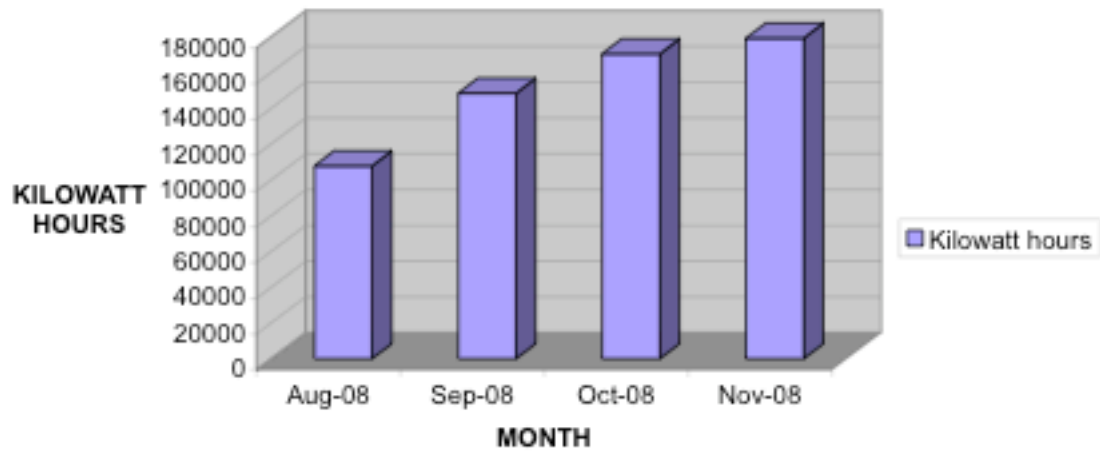
Account	October 2008	November 2008	Actual Increase (KWH)	Percent Increase (%)	Comparison to Nov. 2006/2007 ¹
K-12 School & Pool	88,120	92,520	4400	5%	NA
Chilkat Center	2,960	5,120	2160	73%	>/>
New PW Shop	183	449	266	145%	NA
Lutak Barge	669	965	296	44%	>/<
Streetlights, 100 watt	9240	11340	2100	23%	>/<
Streetlights, 250 watt	12312	14934	2622	22%	>/<
Barnett Drive Water Pump	2455	4013	1558	63%	>/>
Water Tank FAA Road	267	425	158	59%	</<
Water Tank Piedad Road	41	336	295	720%	</>
Sewage Pump	772	1515	743	96%	>/<
Beach Road Sewer Lift Pump	1065	2176	1111	104%	>/>

¹ Read, "November 2008 is >(more than) or < (less than) November 2006/ November 2007"

HAINES BOROUGH MUNICIPAL 2008 HEATING FUEL



MONTH TO MONTH COMPARISON HAINES BOROUGH MUNICIPAL KILOWATT HOUR USE



Facilities: Site Visits and Inquiries

- December 2 Water & Sewer Treatment Plants, and the Fire Hall site visits with Commissioner Moody
- December 5, Visitor Center site visit; Streetlights
- December 8: PC Dock Lights
- December 15, Swimming Pool site visit.

Major Conservation Observations/Recommendations

Water Treatment Plant

- Replace T12 lights with T8s
- Insulate in strategic areas
- Consider walling off office area and allowing it to come to a comfortable temperature rather than trying to achieve a comfort level by heating the full plant
- Consider ceiling fans

Sewer Treatment Plant:

- Replace T12 lights with T8s
- Insulate in strategic areas
- Remove waste oil burner and install in smaller location where spillage won't be such an issue (PW shop)
- Insulate hot water heater; install timer
- Unplug unused equipment
- Re-time pumps to coincide with peak hours when diesel must supplement hydro

Fire Hall

- Relamp engine bay (T12s to T8s)
- Replace incandescent exit signs with LED exit signs
- Install timers on emergency equipment that must be charged up as opposed to leaving them on charge 24/7
- Install occupancy sensors in hallways and bathrooms so lights are not left on
- Unplug appliances and equipment

Visitor Center

- Northwest wall allows wind to blow through; temporarily insulate with foil and corkboard; may reduce use of electric space heaters
- Relamp with T8s as T12s burn out
- Unplug Microwave unless in use
- Minimize use of holiday lights

Swimming Pool

- Install occupancy sensors in locker rooms
- Relamp swimming pool
- Rewire ramp/foyer lighting to take advantage of daylight in atrium. If ramp lights are on, atrium lights must also be on. Ramp lights are necessary because of lack of daylight.

- Lights are not needed in atrium because of ample window light.
- Measure fuel consumption by BTUs. A BTU counter was installed in January 2008. Here is the data:

	2008 Usage (Baseline) BTUs)
January	98,342,496
February	97,712,773
March	106,728,194
April	91,089,491
May	72,011,724
June	37,409,572
July	935,307
August	182,095
September	45,196,097
October	83,254,202
November	112,869,077
December	
Totals	

The pool was closed June 15 and the temperature reduced to 64 degrees. The pool was filled September 4 and opened September 20.

Streetlights

AP&T, through Danny Gonce, reported that there are 324 streetlights in Haines: 210 100-watt lights and 114 250-watt lights. Most of the lights are high-pressure sodium. A few (10 or less) are 175-watt mercury vapor lamps. Kilowatt-hour consumption is calculated using a multiplier. One 100-watt light is metered, and one 250-watt light is metered. The kilowatt-hours consumed by each type of light are then multiplied by the number of lights of that type.

Streetlights and streetlight inventories are maintained by AP&T. Inventory includes luminaries, lamps, photocells, and arms, but the Borough is billed for the purchases. AP&T provides and funds maintenance labor (replacement of outages), and the Borough funds capital labor (new installations or removals).

Mr. Gonce is working to determine the type of LED streetlight that would fit existing fixtures. A presentation given at the AEA Rural Energy Conference this past September outlines the fixture specification requirements for the Anchorage LED streetlight installation². Anchorage is will retrofit 2221 high pressure sodium 150watt lights and 1775 high pressure sodium 250watt lights for a capital outlay of \$2,199,471, an annual savings of \$350,000, a payback period of 7 years, and a net cumulative cost savings of \$2,837,390. Energy consumption for the lights will be cut by 50%.

PC Dock Lights

² Efficient Street Lighting Initiative, <http://www.alaska.edu/uaf/cem/ine/aetdl/conferences/2008Presentations/OutdoorLightingAnc.M.Barber.pdf>

Harbor Master Phil Benner made an effort to replace PC dock lights with a more energy efficient bulb. He had to dismantle a light in order to extract a bulb. He worked with a local retailer to locate an energy efficient bulb (CFL or LED) but could not find one to fit the specialized fixture. There are approximately 22 lights, each carries a 65-watt bulb. All lights and the People Mover are on the same circuit. If one light is needed or if the People Mover has to be charged, all lights must be on. PND estimates that it will cost \$500,000 to rewire the dock independently of any other work. However, a wiring reconfiguration is included in the planned PC dock upgrade.

Harbor Lights

Haines Borough Manager Tom Bolen has requested PND to explore the application of LED lighting for the harbor expansion project. As of this date (12/18/08), the matter is being investigated by the electrical sub-contractor.

Representative Thomas expressed concern about the level of lighting in the harbor. He questioned the number of lights and wondered if motion sensitive lights might be installed. I passed this inquiry on to the Harbor Master and to the Borough Manager 12/18/08.

Haines Borough Conservation Plan

The Haines Borough Conservation Plan is available on the Borough website (www.hainesborough.us) as well as on the Commission site (www.outlierproductions.com). The Borough Assembly will take it up in January. The elements of the plan described are on going.

JEDC

The Energy & Sustainability Commission, in collaboration with the Haines Chamber of Commerce, invited Margaret O'Neal, Director of Operations, Juneau Economic Development Council, to come to Haines to discuss possibilities for funding private sector renewable energy and energy efficiency projects. Commission Chair Melissa Aronson facilitated the discussion. A number of people attended including Commissioners Danny Gonce, Scott Hansen, and Tom Moody. Borough Manager Tom Bolen participated as well as Mayor Jan Hill. Others in attendance included Scott Hansen, Shane Horton, Tim June, Christy Tengs-Fowler, Representative Bill Thomas, Greg Stuckey, and Energy & Sustainability Coordinator, Stephanie Scott.

In 1998 Haines established the Haines Revolving Loan Fund and contracted with JEDC to manage loans out of that fund. Eligibility for loans was tied to job creation, with the benchmark of the creation or retention of one full-time equivalent job for every \$30,000.00 loaned. However, Ms. O'Neal believes that loans for projects that demonstrate savings through energy efficiency would qualify even given the current language. Two loans have been made. There has been no activity for several years. According to Jila Stuart, there is no money currently allocated in the Haines Borough budget for this program. Historically, money was allocated to the Revolving Loan Fund from the one percent sales tax. One percent of the Haines Borough 5.5% sales tax is dedicated to tourism and economic development.

Shane Horton described some of the barriers he has encountered in his quest for funds to install a biomass heat system for his motel and adjoining facilities. These barriers included complex paper work, the need to obligate his assets beyond his comfort level, and aggressive pay-back schedules. Margaret O'Neal stated that the JEDC could make loans with set-back repayment schedules so that the new infrastructure could begin to provide relief from high heating costs before loan payments came due.

Participants discussed the need to create the infrastructure that would provide a steady supply of fuel for biomass systems. The need for an industrial chipper was described. The possibility Borough financing for a chipper was discussed.

Legislative Issues

Representative Thomas recommended that the Commission transmit recommendations and thoughts to Kim Skipper, staff for the Renewable Energy Advisory Committee. He requested that Kim Skipper be sent links to the Haines Borough Peak Oil Task Force Report and the Haines Borough Conservation Plan. He also requested access to the Energy & Sustainability Coordinator's Monthly Report.

Representative Thomas confirmed that he would continue to push for inclusion of commercial consumers in the PCE credit; he questioned the propriety of the municipal sales tax on the PCE credit currently received by residents. He intends to support additional funding for the Home Energy Rebate Program and Weatherization Programs. He is interested in the possibility of allowing municipalities to offer an exemption for renewable energy property tax and asked that the research supporting a property tax exemption for this purpose be transmitted to Kim Skyler.

Representative Thomas is working with Parks, DNR, and DOT to create a corridor around Chilkoot Lake that will resolve management issues. Parks would be the lead management agency.

Financial Report

To date, the Commission has expended approximately 1/5 of its \$5000.00 budget. The Commission has completed a few weeks more than 1/3 of its 12-month term (counting from the inaugural meeting September 2, 2008). The following expenditures have been authorized:

- Travel and per diem to the Wood Energy Conference, Sitka (Oct. 2008)
- P3 Kill-a-Watt meters and Smart Strips for commendations and demonstrations (Dec. 2008)
- Travel for Margaret O'Neal, JEDC (Dec. 2008)
- Subscription to Home Power magazine for the Haines Borough Library (Dec. 2008).

.Expenditures to date sum to \$1042.93.

Energy Talk

Programs. Seven *Energy Talks* have aired. Programs since December 2:

December 8: Compact Fluorescents with Melissa Aronson

December 15: Power Management Features for Computers with Jeff Stout
December 22: Oil Fired Boiler Efficiencies with Leonard Dubber

Underwriting. Alaska Alternative Energy (Kip Kermonian) and Chilkat Environmental (Jacklynn Ruggirello; <http://www.chilkatenvironmental.com/>) have offered to underwrite *Energy Talk*. Each company will be mentioned at either the beginning or end of the show for a 13-week period. According to KHNS Program Director Steve Scarret, shows with underwriting are guaranteed airtime. So underwriting adds stability to our show. Underwriting also indicates that at least some segments of the community think the program is worthwhile!

An underwriter's statement must adhere to the 12 standards adopted by KHNS and be no more than 15 seconds long. Chilkat Environmental will craft their own statement but Alaska Alternative Energy has asked that we craft the statement for that business. I have proposed the following: *Energy Talk is underwritten in part by Alaska Alternative Energy, a local business providing solar, wind, and alternative energy products to the Chilkat Valley.*

Energy Fair

The date and place is set: February 28, K-12 School. Initial telephone calls and emails have been sent to the following out of town potential presenters and providers:

- John Anderson, Alaska Housing Finance Corporation
- Bruce A. Tiedeman, Alaska Energy Authority
- Tabitha Stevenson, Alaska Corporation for Community Development (the group that performs Weatherization assessments for Haines)
- Dan Parrent, JEDC, Wood Products Development Services
- Margaret O'Neal, JEDC, Revolving Loan Fund
- Dean Stewart, USDA
- Alaska Building Science Network

List of Products and Services that have the potential to be for sale at the Haines Energy Fair.

This list is necessarily provisional. The final list will depend on the willingness of local vendors to participate in the Fair. As we work with local vendors, the vendors themselves may suggest products that would be appropriate. The point of the Vendor portion of the Fair is to show the community those energy efficient products and services are available locally.

In order to qualify for a sales tax exemption, the product or services must be paid for at the Fair. Only local vendors will be selling products and services, although out of town presenters may be displaying products. Vendors and products will be pre-approved for participation by a Vendor Committee composed of the Coordinator and two members of the Haines Borough Energy & Sustainability Commission.

Products

Any ENERGY STAR Qualified Product

http://www.energystar.gov/index.cfm?fuseaction=find_a_product.

Appliances

- Battery Chargers
- Clothes Washers
- Dehumidifiers
- Dishwashers
- Refrigerators & Freezers

Heating & Cooling

- Boilers
- Ceiling Fans
- Furnaces
- Home Sealing (Insulation, Air Sealing)
- Programmable thermostats
- Windows, Doors, & Skylights

Home Electronics

- External Power Adapters
- LCD TVs

Office Equipment

- Computers
- Copiers & FAX Machines
- Printers, Scanners, and All-in-Ones

Lighting

- Light Bulbs (CFLs)
- T8, T5 Fluorescent lights
- Electronic Ballasts
- LED lights
- Decorative Light Strings (holiday lights)
- LED Exit Signs

Products that contribute to energy savings but may not carry the ENERGY STAR label

- CFLs bulbs
- LED lights
- Power Strips
- Weather-stripping
- Caulk
- Insulation
- On-demand hot water heaters

- Low Emission Wood Fired Boilers
- Insulation for hot water tanks
- Heat Valves for Hot Water Tanks
- Timers for electronics and for hot water systems
- Lighting controls: occupancy sensors, timers

Renewable Energy system components including:

- PV Panels (Solar panels)
- Wind machines
- Charge controllers for system components
- Water turbines

Services:

- Tune-ups for heating systems
- Energy Audits
- Installation of Renewable Energy Systems
- Tune-ups for vehicle

Web Site

The following links were added:

- Alaska Building Science Network <http://www.absn.com/>
- AHFC Home Energy Rebate Program <http://www.akrebate.com/>
- AHFC Weatherization Program, <http://www.alaskacdc.org/>
- DSIRE: Database of State Incentives for Renewables & Efficiency www.dsireusa.org/
- Interstate Renewable Energy Council (IREC) www.irecusa.org/index.php Many resources including Connecting to the Grid Guide, connecting to the Grid Newsletter <http://www.irecusa.org/index.php?id=33>

Status of Commission Requests to the Assembly

Transit Fund/Integrating Pupil & Public Transportation: The *Resolution in Support of an Alaska Transit Trust Fund to Sustain Community-Based Public and Coordinated Transportation System and Changes to Pupil Transportation Funding Requirement to Achieve Economies of Scale in Community Transportation Systems* was not included on the Assembly agenda December 9 or December 15. The Assembly addressed the issue December 9 meeting as a Committee of the Whole and indicated an unwillingness to consider the issue. Therefore, the Mayor did not include the Resolution on the December 15 Agenda.

Sales Tax Holiday for Renewable Energy & Energy Efficiency Products and Services. The Assembly unanimously adopted the sales tax holiday resolution at the December 15 meeting.

Communications

Solar

Rich Seifert, University of Alaska professor, is an Alaska Energy Specialist. I asked him about using solar to supplement the hydro in Haines. Here is his response:

The problem with your request is that I do not think a large movement into solar PV is an optimal choice for a community like Haines. The problem is, and since you have used PV for a long time, that the solar gain is out of phase with the maximum need for electricity. The only renewable energy resource with a winter peak, a peak that coincides with maximum energy use, is wind. Wind could be brought on soon, but not much faster than your additional hydro project. Not only that, but photovoltaic solar is much more expensive per kilowatt capacity than wind and probably hydro too.

This is the scourge of Alaskan solar applications: the load for both heat and electricity is always out of phase with the greatest need, so the sun will always be a worse choice for winter load needs. Can't be very optimistic, sorry,

You may want to check out " The Solar Design Manual For Alaska", which is in

your beautiful Haines library. I know because I put two copies there myself!
The solar manual is also viewable on the <http://www.alaskasun.org/> website. See also our recent ABSN newsletter, the article near the last page on photovoltaic systems at eh Cold Climate Research center. I do not think a rigorous engineering estimate of load and costs would yield anything more encouraging than I have been here.

Professor Seifert's contact information is ffrds@uaf.edu,
<http://www.uaf.edu/ces/faculty/seifert/>

Hydro: Connelly Lake

Kathleen Menke, KmKm/Crystal Images, ci@akmk.com, 11/24/08. Kathleen has offered to present *Chilkoot at a Crossroads*, a comment on Connelly Lake. It is 15-minutes long.