Cost of space heating

- The average residential electricity customer pays $1,100 annually on their electric bill.
- Of respondents to the 2007 Sitka Residential Energy Survey, an average of $1,027 is spent annually on heating oil.
- Space heating accounts for around 50% of total home energy use (electricity, heating oil, wood, propane, etc.) in Sitka.
- The average home in Sitka spends $2,127 annually on electricity and heating oil. Of this, approximately $1,064 is spent on space heating, though much depends on the size of the home and type of heating.
- Reducing the amount of energy consumed for space heating can save significant amounts of money annually.
- Lowering your thermostat setting by one degree can save $32 annually for the average space heating bill.
- Lowering the thermostat when you are away or sleeping can save $11 annually for every degree the thermostat is lowered for an eight hour period, if done regularly.
- Insulating and weatherizing your home can save money, as well *

Other resources

*See brochure on Energy Audits and Weatherization

Energy conservation tips: http://www.eere.energy.gov/consumer/your_home/space_heating_cooling/

Wood burning: http://www.epa.gov/woodstoves

Heat pumps: http://www.geoexchange.com

Small business financing: USDA Rural Development - Biobased products and bioenergy program

SITKA CONSERVATION SOCIETY

For more information, contact the City and Borough of Sitka Electric Department or the Sitka Conservation Society

http://www.cityofsitka.com

http://www.sitkawild.org

Designed by Amy Heinemann, 2007

Home Heating

Energy Conservation and Efficiency in Sitka

Space Heating in Sitka

In Sitka, there are several different types of space heating. The main fuels are electricity and oil. Some homes are heated by burning biomass or propane. There is also the potential to heat homes using heat pumps, a more efficient way to use electricity.

Heat pumps take heat from the air, ground, or water and pump it in the home, also removing cooler air from the house. Heat pumps function like a refrigerator but would be used to heat rather than cool in Sitka.

There are differences in cost, efficiency, and environmental impact depending on the fuel that you use to heat your home.

Ways to conserve energy

By setting your thermostat one degree lower than you currently do, you can save up to 3% annually on your heating bill (3% for every degree thermostat is lowered).

By turning your thermostat down while you are away during the day or sleeping at night, you can save 1% annually on your heating bill for every 1°F that you lower the thermostat (if thermostat is lowered for 8 hour period).

Buying and using a programmable thermostat (initial cost of $30-$100) can help you save money on your heating bill.

Keep your thermostat set below 70°F in the winter and lower it to 55°F when you are not at home.

Environmental Issues

- There are environmental concerns associated with all forms of space heating. The cheapest and simplest way to address these concerns is by conserving energy.
- Greenhouse gas emissions are associated with burning fossil fuels (like heating oil) and contribute to climate change. Hydroelectric power produces no greenhouse gases but is expensive to build and has environmental issues.
- Energy conservation can delay the need to invest in new electric power generation projects and can minimize the burning of fossil fuels and greenhouse gas emissions.
- Conventional forms of residential space heating like electric heat and heating oil combustion are the least expensive and time-consuming methods of home heating. If you are concerned about cost, greenhouse gas emissions, or other environmental issues, reduce energy consumption.
- By having a duel fuel heating system (a way in which to heat with either electricity or heating oil), you can decide which fuel to use depending on fuel costs or associated environmental issues.
- Wood emits particulates (seen in the form of smoke) that can cause both indoor and outdoor air pollution. Particulates can pose a human health risk if there is improper ventilation. Wood burning also emits compounds that are associated with acid rain when present in high volumes.

Biomass and Wood Burning

- In Sitka, 34% of respondents to a recent residential energy survey expressed an interest in heating their home with wood. Before converting to wood burning, it is important to be aware of some of the challenges and alternatives.
- Few places in Sitka sell large amounts of firewood, but the cost per cord of wood is around $140. If collecting wood yourself, you should factor in the time it takes to collect and dry the wood.
- Wood must be dried out before burning for around one year, as moisture in wood will greatly reduce the heating efficiency.
- Approximately 7 cords (a cord is 4'x4'x8', split and stacked) of wood are required to heat a home annually.
- Driftwood can be collected to burn, but if it has been in saline or brackish water, it will corrode metal chimneys over time.
- Unlike wood, biomass pellets burn constantly in boilers or stoves like fuel. Pellets do not have the air quality concerns associated with wood burning, but are not currently produced or sold in large quantites in Alaska.
- If you choose to heat with wood or supplement other fuel sources with wood, you should use an EPA-certified wood stove or fireplace insert. EPA stoves will burn wood most completely and release 70% less pollution than uncertified wood stoves and 95% less pollution than fireplaces when producing equivalent amounts of heat.