WHY ARE GREENHOUSE GAS EMISSIONS IMPORTANT?

Greenhouse gases trap heat in the atmosphere and are associated with an increased global surface temperature. Human activities produce greenhouse gases and are accelerating a natural warming of the earth. Impacts from climate change range from surface temperature increases to sea level rise to losses of biodiversity. As a coastal community in Alaska that's economy is based on tourism and natural resources, Sitka is vulnerable to impacts of climate change.

Projected Impacts of Climate Change on Southeast Alaska

Ecosystem: Fisheries and forest ecosystems are projected to be negatively affected over the next century by climate change. Acidification of oceans (caused by increased atmospheric CO2 dissolving in the ocean) will depress populations of pteropods, an important food source for salmon, cod, and herring. An increased water temperature in freshwater salmon spawning streams will reduce reproduction. Warmer winter temperatures and reduced snow cover has already led to large die-offs of yellow cedar in Southeast Alaska (500,000 acres affected currently).

Economic: Commercial fishing will be impacted by reduced stocks of salmon, cod, and herring, described above. The timber industry will be impacted by a reduction of yellow cedar, the most valuable species in Southeast Alaska.

Lifestyle: The impacts described will affect subsistence hunting, fishing, and gathering.

Infrastructure: Sea level rise or a combination of sea level rise and storm surge will cause some coastal and freshwater stream erosion, also affecting low-lying islands and buildings and infrastructure built on low-lying land.

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

SITKA'S GREENHOUSE GAS EMISSIONS

ENERGY CONSERVATION AND EFFICIENCY IN SITKA

Greenhouse gas emissions In Sitka

Sitka compared to Alaskan and U.S. Averages

- In 2006, Sitka emitted approximately 97,406 metric tons of CO2. Per capita emissions were 11.03 metric tons.
- In 2004, Alaska emitted 44.8 million metric tons. Per capita emissions were 69.2 metric tons and 33.81 if industry is excluded.
- In 2003, per capita emissions in the United States were 20.09 metric tons.
- Sitka likely emits less than the nation and state, per capita, because electricity is generated with hydropower.
- There are ways in which Sitkans can reduce energy consumption and greenhouse gas emissions associated with transportation, heating, and recreation.
- With prices for fossil fuels rising, reducing fuel use will save money, as well as having environmental benefits.

Sitka's unique situation

Sitka's greenhouse gas emissions are associated primarily with transportation and space heating, as most electricity is generated by clean hydropower.

Therefore, reducing greenhouse gas emissions will require reducing fossil fuel use associated with driving, recreation/boating, and heating with fuel oil. Land use change (cutting down trees or other vegetation) also plays a role by removing a sink of carbon and subsequently releasing the carbon into the atmosphere.

Assumptions of the Sitka Greenhouse Gas Emissions Inventory

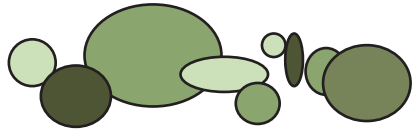
- This inventory used total fuel sold in Sitka in 2006 to calculate greenhouse gas emissions.
- The inventory uses fuel sold to represent fuel consumption and carbon dioxide emissions in Sitka by looking at unleaded gasoline, aviation gasoline, and diesel fuel (for vehicles and heating oil).
- This inventory represents an approximate, rough calculation of carbon dioxide emissions and does not look at CO2 emissions from other sources, such as land use change, wood burning, commercial airline flights, or cruise ships.
- Sources not examined by this inventory may contribute to large amounts of greenhouse gas emissions. There were approximately 229,800 cruise ship passengers visiting Sitka in 2005 and 12,519 ferry passengers. There were approximately 63 flights per day in 2005, with 43% air taxi, 30% transient general aviation, 13% local general aviation, 8% commercial, and 6% military.

Green tags and carbon offsets

- Green tags and carbon offsets can be purchased to help develop renewable energy projects or carbon sinks so that the greenhouse gas emissions associated with fossil fuel combustion are offset.
- Denali Green Tags and Native Energy sell tags/carbon offsets and have renewable wind and solar energy projects located in Alaska (see "Online resources").

Ways to reduce greenhouse gas emissions

- Walk or bike when possible - this will save money and reduce fossil fuel use.
- When purchasing a new vehicle, buy a smaller car with high fuel economy.
- Convert to electric heat or have a "duel fuel" heating system so you can switch between heating oil and electric heat.
- Use a programmable thermostat so that your home is not being heated while you are away.
- Set the temperature between 60-70°F and turn the thermostat down to 55°F at night.
- Heat rooms you occupy rather than the entire house.
- Develop a city-wide climate action plan through ICLEI or the US Mayors Climate Protection Agreement.
- Refer to the brochure on energy audits and weatherization, as well as the brochure on personal transportation for more information*



Online resources:

http://www.alaskarenewableenergy.org/

http://www.alaskaconservationsolutions.com

http://www.denaligreentags.com

http://www.nativeenergy.com