

County Action Needed to Halt Climate Change



The Larsen B ice shelf collapsed over a 35-day period early in 2002 due to climate change, losing more than a quarter of its total mass. Photograph taken from British Antarctic Survey ship RRS James Clark Ross on March 08, 2002 via Associated Press

The final results are in, after December temperatures were factored in NASA scientists concluded that 2007 moved up from the seventh hottest year ever recorded to the second. Gavin Schmidt, a climate scientist at NASA's Goddard Institute for Space Studies, told the Washington Post, "We've got a sustained warming of the planet, which is unequivocal, and the best we can work out is that it's because we've been increasing the greenhouse gas emissions, primarily. That means it's going to continue. The long-term trends are up, and they're up in the same way our models have been predicting for the last 20 years."

Ice in Antarctica that was thought to be largely immune to melting from global warming has recently been discovered to be retreating. "Without doubt, Antarctica as a whole is now losing ice yearly, and each year it's losing more," said Eric Rignot, a senior scientist with NASA's Jet Propulsion Laboratory. He said, "Something must be changing the ocean to trigger such changes. We believe it is related to global climate forcing." Rajendra Pachauri, head of the UN Intergovernmental Panel on Climate Change (IPCC) called the information "frightening."

Corporations, governments, and individuals worldwide are talking about what they can do about climate change. The next five articles in our climate change series will focus on the specific actions necessary to halt climate change that are the responsibilities of the county government, state government, KIUC and the PUC, the Federal government, and all of us as individuals.

As the government closest to us, the government responsible for providing most public services, the government responsible for developing and maintaining much of our infrastructure, and one of the largest employers on Kauai, county government is directly

responsible for a great deal of the local climate-changing green house gas (GHG) emissions. If everyone is going to do their part, county government has to be part of the solution by taking actions to reduce their contribution to climate change.

Reduce Solid Waste GHG Emissions

County government is the strategic provider of solid waste facilities on Kauai; and unlike municipalities on the mainland where commercial waste haulers have the choice of taking solid waste to alternate facilities, on Kauai what our county government provides is the only practical choice for all Kauai solid waste, municipal and commercial. Although Kauai's Kekaha landfill meets EPA and Department of Health regulations, there are no regulations yet for landfill GHG emissions.

Hundreds of tons of garbage is dumped daily into the Kekaha landfill, and as it rots it produces methane (CO₄), a green house gas 21 times more potent than CO₂. While some other communities capture their landfill methane to make electricity, or have aggressive recycling programs to minimize waste, or burn their garbage for energy, Kauai has no solid waste infrastructure to minimize landfill gas. Apollo Kauai's report to the County of Kauai's Solid Waste Advisory Committee calculated the Kekaha landfill emits the equivalent of 100,000 metric tons of GHG each year, the equivalent to 26,000 cars driving 10,000 miles each year.

These Kekaha landfill GHG emissions are avoidable. First, emissions from the already buried, already rotting garbage need to be captured and used to generate electricity. The US EPA says "Landfill gas emitted from decomposing garbage is a reliable and renewable fuel option." It reduces GHG emissions both by reducing the landfill methane released into the atmosphere and by offsetting the use of some fossil fuel to generate electricity. In 2002, Michael J. McGuigan, Vice President for Project Development of Landfill Energy Systems, estimated at least 800KW of electricity could be generated by capturing the methane output of the Kekaha landfill.

Beyond capturing methane from existing garbage, the County needs a better way to handle the hundreds of tons of new garbage generated each day on Kauai. The County's recent integrated solid waste plan proposes burning garbage in a modern waste-to-energy (WTE) facility while Zero Waste Kauai, a community advocacy group has proposed a state-of-the-art zero-waste solid waste management plan for Kauai based on maximum recycling. Advocates of WTE argue the energy it produces will save 100,000 barrels of oil annually, and eliminate the associated CO₂ produced by burning oil, that would otherwise be used to make electricity. WTE advocates point out little or no changes would be required in solid waste handling – we could continue to indiscriminately throw everything into garbage cans, trucks could continue to pick up mixed garbage – the destination would just be the WTE plant instead of the landfill.

Proponents of zero waste favor the greater benefits available from a system that maximizes recycling. Eric Lombardi, Executive Director of Eco-Cycle and consultant to Zero Waste Kauai said, "70% of the waste now entering the landfill is easily recoverable

and marketable!” A zero waste solid waste system is more complex than WTE, with several different recovery facilities, and requires source separation of garbage into different recyclables, but other cities have succeeded at building zero waste systems and proponents note the complexity of the system produces much better GHG savings than WTE. Apollo Kauai’s report to the County of Kauai’s Solid Waste Advisory Committee estimated a Kauai zero waste system would recover 12,600 tons of raw materials for recycling annually, saving the energy equivalent and GHG emissions of 270,000 barrels of oil, more than two and a half times the GHG savings of WTE.

Either zero waste or WTE would stop the climate-changing GHG hemorrhage of future decomposing organic trash. And both have additional energy and GHG savings, although a zero waste system has the most savings. If we do neither, county government will continue as one of the largest sources of climate change on Kauai.

Expand Kauai Bus Service

The County of Kauai provides the only mass transport alternative to private cars on Kauai. And it works; ridership on the Kauai Bus has almost doubled over the last three years. The transportation sector in the US is responsible for 27 percent of our GHG emissions, and on Kauai, increasing the Kauai Bus service offers the best way to reduce GHG emissions in Kauai’s transportation sector.

In 2006 Apollo Kauai surveyed attitudes towards the Kauai Bus and found ridership could be increased by increasing service frequency, especially during peak commuter times, by increasing access with more stops and routes, and most importantly, by adding park & rides island wide.

William Vincent and Lisa Jerram of Breakthrough Technologies Institute note travel to and from work offers “the greatest potential to use transit as a CO2 mitigation strategy.” The 2001 National Household Travel Survey (NHTS) reported that work trips are the single largest component of total vehicle miles traveled in the United States and the occupancy of these trips is only 1.14, the lowest occupancy rate for any trip purpose. Vincent and Jerram note, “work trips tend to follow fairly well-defined commuting patterns, making them relatively easy to serve with public transportation.”

The US Environmental Protection Agency (EPA) calls local governments to action saying, “Effective public transportation systems can significantly reduce greenhouse gas emissions.” Significant increases in Kauai Bus frequency and access, especially to move us to and from work, are necessary if county government wants to reduce climate change.

Energy Efficient Building Codes

Setting and enforcing building codes is a traditional municipal activity performed by our county government. Other states and municipalities have been very successful at reducing energy use and CO2 emissions by setting strict efficiency requirements in their building codes. Phoenix, AZ achieved an 18 percent reduction in residential energy

consumption and a corresponding 18 percent reduction in GHG emissions by enacting the 2004 International Energy Conservation Code (IECC) Supplement for Residential Construction. Far from increasing the financial burden on home purchasers, Phoenix found the average \$1,517 upfront cost increase was paid back in only 3.9 years and a total average life-cycle cost savings of \$11,228 per home was achieved. These results are typical; the Union of Concerned Scientists notes that energy efficiency “is one of the best ways to save money while saving the environment.”

Unfortunately, while these model aggressive energy efficiency codes are available, neither the State of Hawaii nor the County of Kauai have adopted them. Instead, we make building energy efficiency optional, as the State of Hawaii Department of Business, Economic Development and Tourism explains, they provide energy efficiency “information and guidelines.”

Beyond adopting the IECC Energy Efficiency Supplements, additional specific local requirements proven to work here can further increase GHG savings. With a track record of successfully saving money, saving energy, and reducing GHG emissions, solar hot water heating is proven effective on Kauai. With typical homeowner savings of more than \$1000 annually, and GHG reductions of 9000 pounds annually, the County of Kauai building codes should require solar water heating wherever practical.

Efficient Operations

With a thousand employees, an operating budget of almost \$140 million dollars, and a capital budget of more than \$65 million dollars, county government operations themselves create significant GHG emissions.

For-profit companies have clear interest in energy efficiency because it reduces costs and increases profits. While you’ve probably never been in Wal-Mart, Costco, or Big Save and felt the wasted energy of air conditioning set too cold, visitors to County buildings do occasionally find air conditioning so cold they are uncomfortable.

The potential energy savings in municipal government buildings is so great the EPA specifically calls them out for special attention, noting, “nearly one-third of the energy used to run typical government buildings goes to waste.” The EPA further notes “By purchasing copiers, fax machines, computers, scanners, exit signs, heating and cooling products, windows and other equipment with the ENERGY STAR® label, local governments save money while reducing energy-related greenhouse gas emissions.”

Thus the final action our county government must take to reduce GHG emissions and their contribution to global warming, as summarized by the EPA is “Leading by example and improving the energy efficiency of their own buildings.”