TESTIMONY OF CHRIS ROSE, EXECUTIVE DIRECTOR OF RENEWABLE ENERGY ALASKA PROJECT (REAP)

to the

U.S. House Subcommittee on Indian and Alaska Native Affairs Oversight Hearing on *"Federal Laws and Policies Affecting Energy Prices in Rural Alaska and their Effect on Native Villages"*

April 5, 2012

Good morning Representative Young, and other members of the Committee. My name is Chris Rose and I am the Executive Director of Renewable Energy Alaska Project, or REAP. REAP is statewide non-profit coalition of over 80 dues paying organizations that include small and large electric utilities, Alaska Native organizations, businesses and conservation and consumer groups that all share the goals of increasing the production of renewable energy in Alaska and promoting energy efficiency. Since our founding in 2004, REAP has educated the public, the business community and policy makers through face-to-face meetings, public presentations and forums and conferences about the benefits of saving energy and generating power locally with inexhaustible sources like wind, geothermal, and hydropower that are not subject to world market fuel price volatility.

Alaska's so called clean energy resources are rich. The term "clean energy" usually refers to the combination of renewable energy generation and energy efficiency and conservation (EE&C). Alaska's first opportunity is to eliminate energy waste by marrying traditional knowledge with modern technology to construct highly energy efficient buildings in communities across state. With a cold climate, high energy prices, and inefficient housing stock, some of which was supplied by the federal government when fuel prices were far lower than that are today, Alaskans have the greatest incentive to be energy efficient in the country.

Jack Herbert and the Cold Climate Housing Research Center (CCHRC) based in Fairbanks are leading the way in new emerging energy efficient and affordable housing designs. The Alaska Housing Finance Corporation (AHFC) has provided grants and rebates to over 15,000 Alaska homes to make them more energy efficient since 2008, resulting in an astounding 30-33% energy savings per household. With diesel heating fuel costing more than $9 in some communities and trending upward, saving the energy we have already produced or generated is always a quicker return on investment than spending money on more generation. The state is expanding its EE&C efforts to meet the state's legislated goal of reducing energy use 15% per capita by energy retrofitting 25% of the state's buildings by 2020. This work includes two state programs that are just getting off the ground, including audit and loan programs for public buildings, and a program to begin leveraging small grants to test emerging technologies.

Though the state's public building and residential EE&C efforts are strong, Alaska still needs more support for the commercial sector to save heating and electrical energy. The state would like to work with the federal government to help Alaska have some of the most efficient building stock in the world in 25 years. As the nation's only arctic state, Alaska could help the United States improve the nation's homegrown building design technologies, a huge industry that is now dominated by northern Europe. REAP does not believe there is any reason that the most efficient buildings in the world are being designed in Germany and Denmark. Alaska can and should become a leader in building technology and design. As we move in that direction, we hope to grow and diversity our economy, improve our university system and private sector clout, and make buildings more comfortable, productive, and affordable to operate.

In the area of renewable energy generation Alaska is fortunate to have some of the best natural resources in the country. These renewable energy resources include wind, geothermal, hydro, tidal, wave, biomass, and solar and are detailed in the Renewable Energy Atlas of Alaska, a joint publication of REAP and the Alaska Energy

Authority. An online version of the Atlas is available at ftp://ftp.aidea.org/AEAPublications/2011_RenewableEnergyAtlasofAlaska.pdf. [I will provide hard copies of the Atlas to the Committee when I am in Fairbanks.]

Alaska has developable wind resources in almost 100 communities, biomass energy in diverse areas of the state that can generate heat and potentially electricity, small hydro potential near more than a dozen communities, excellent solar power seven months of the year in areas that could be harnessing the electricity for transportation applications, and a huge geothermal potential that exists near at least a handful of communities. Alaska also has thousands of miles of broad rivers that could yield hydrokinetic electricity as that emerging technology improves, as well as 90% of the nation's tidal power potential and 50% of the nation's wave power potential.

So far Alaska has more than 20 communities that have installed wind power in connection with existing diesel generation in so-called wind-diesel hybrid systems. Alaska is already seen as a world leader in wind-diesel hybrid systems, and REAP, the state and the University have hosted two very well attended international wind-diesel conferences in Alaska. Advanced controls that marry wind and diesel, small hydro, electric transportation, biomass gasification, energy storage, river hydrokinetics and tidal and wave power are all technologies that Alaska could take a world leadership position in if we decide to put our resources toward making it happen. The ingredients to get there, including a solid university system of training and education, private sector incentives to risk capital for technology innovation and state support are all things that REAP and its allies are working for. We appreciate the assistance and collaboration that the state is building with the Denali Commission, the U.S. Department of Energy, the National Renewable Energy Laboratory (NREL), the U.S. Department of Agriculture, the U.S. Department of the Interior, Advanced Research Projects Agency-Energy (ARPA-E) and other arms of the federal government. Increased coordination amongst these departments with the state will lead to a more efficient delivery of services to Alaska's taxpayers.

To coordinate agencies at the state level, REAP is currently working with the Alaska Center for Energy and Power (ACEP) at the University here in Fairbanks to create a network of education and workforce development curricula and programs so that Alaskans are ready for the jobs of the future in the fields of renewable energy and energy efficiency. More education will also make Alaskans more aware of where their energy comes from, and the implications of their everyday energy choices. Called the Alaska Network for Energy Education, or ANEE, the network will include state, and we hope, federal agencies and others to work together to avoid duplicative efforts and bring collaboration to the entities that are already engaged in training and curriculum delivery. We would also welcome support from the federal government when it comes to increasing the standards for any federal housing from the Department of Housing and Urban Development in the state. Since most of Alaska Native communities are not in urban environments, Alaskans would be better served with state-of-the-art housing that costs pennies on the dollar more upfront, but have operating costs more than 50% cheaper than the federal housing that is occupied in the state today.

There is a growing amount of information about Alaska's renewable energy and energy efficiency potential and there is no way to sufficiently document all of the state's opportunities in a few pages of testimony. REAP is working statewide to educate the public, business community and policy makers about the great potential that Alaska has to be a leader in what many are calling the next industrial revolution. In two weeks REAP will host its annual *Business of Clean Energy in Alaska* conference which convenes experts from around the country in Anchorage to discuss improving our housing standards, eliminating waste, and relying less on fuels whose price we have very little control over. In the process of solving the energy problems we have in over 200 remote Alaska communities we believe Alaska can and should create industries that can serve both domestic and world markets.

In conclusion, the State of Alaska has been spending an increasing number of state dollars on energy efficiency efforts and renewable energy generation. The Alaska Renewable Energy Grant Fund has already funded over 208 projects since 2008 and, according to the Alaska Energy Authority, projects funded in part by the program will be displacing over 10 millions of diesel in rural communities across the state by the end of 2016. As more projects are built and come online and as the price of diesel increases, the state's return on its investment will increase even faster. On the EE&C front, the state has spent nearly a half billion dollars over the last few years to begin weatherizing buildings. But there is much more to do to relieve the unbearable burden of high energy costs on Alaska's communities. REAP and its allies thank the federal government for the support it has shown in the area of clean energy, and respectfully request even more support in the form of better rural housing, R&D matching dollars for the state's nascent Emerging Energy Technology Fund, continued federal agency collaboration and a long-term federal energy policy that will allow the United States to compete with the rest of the world.

Thank you for the opportunity to testify.