

Adapting to Energy Insecurity: A Case Study of a Super-Energy Efficient Home in Rural Alaska

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ABSTRACT

Energy security in Alaska has been an issue of contention for decades. The recent fuel crisis in Nome brings to light the need for rural Alaska to adapt to threats to energy security. One part of the solution can be to dramatically increase the energy efficiency of residential homes, thus decreasing reliance on energy sources for the operational years. However, when taking into account the entire life-cycle of the home from product manufacturing to decommissioning what does the energy and emissions balance sheet look like, especially for a home built in a community that is not accessible by road? How much more energy is required to manufacture efficient homes versus conventional homes and how does this extra energy spent compare to the energy saved throughout the operational lifespan? This presentation aims to shed light on these exploratory questions through an ongoing environmental, economic and social analysis of a case study of a super-energy efficient, net zero ready home in the Bristol Bay region in Alaska.

BIOGRAPHY

Yasmeen Hossain is a PhD candidate in the Resilience and Adaptation Program (RAP) at the University of Alaska Fairbanks (UAF). Her interdisciplinary research explores the viability of highly energy efficient homes in Alaska. Her analysis includes the environmental life-cycle of the building materials, a cost-benefit analysis and the social/cultural implications of building these types of homes in Alaska. Yasmeen has a professional and academic background in environmental economics, renewable energy, sustainable disaster recovery and permaculture design.