

Residential Heating In Remote Arctic Villages Workshop 2: Plan for the Implementation of Heating Research Needs

Friday, December 9, 2016



General Priorities/Data Collection Needs

- Compile and collect basic data at the individual residential home level—how much of what kind of fuel is being used to heat homes where? (important to include metered vs. unmetered homes in this analysis)
- Fuel metering data on homes (and potentially commercial buildings)
- Data on use of home heating appliances
- Basic data on rural infrastructure and buildings: a well organized, centralized data set of basic community information, would help in heat-use modeling. Ideally, this would include community name, the number of buildings in the community, owner of the building (resident, city, tribal, corporations, business), and their size, spacing and use/function, and current heating method. This information will inform cost estimates.
- Data review of “heat technology” research trials

General Priorities/Research Questions

- How would a reduction in energy subsidies impact communities?
- At what point do small, off the road system communities become non-viable under this scenario?
- Is the “district heating” model feasible in Alaska (Figure 2)? How can a centralized district heating distribution system be implemented?
- Would increased use of multi-family housing increase the viability of district heating systems? Is this something that would be socially acceptable in communities?
- How have other countries (especially Arctic) approached this model?
- What are the challenges to local implementation of energy efficiency projects in rural Alaska?
- What are the barriers to behavior changes to implement efficiencies?
- What organizational/capacity barriers exist?
- What opportunities are there for sewage, food waste, fish processing waste to be used as heat through small scale anaerobic digestion in rural communities? Is it feasible in rural Alaska, especially in Arctic and sub-Arctic locales?
- What is the potential for methane as a fuel in Alaska?
- How can we best leverage existing situations (i.e., with electrical distribution system infrastructure) to become more “energy secure”?
- What new technology provides the best options for energy storage in remote Alaska given our knowledge of conditions under which they would be used?
- How can we minimize risk to private investors in order to augment the installation of renewables in remote Alaska?
- What makes a “secure investment” and is it possible to move towards this in remote Alaska?
- How do we best reach and take advantage of an “economies of scale” approach to renewables in small, remote Alaskan villages?

Policy Priorities/Research Questions

- What is the role of policy on heating in rural communities?
- What are other international Arctic communities doing with respect to energy and renewables policy? Could alternative approaches used elsewhere work in rural Alaska?
- What is the best approach to prioritization and strategic planning in order to better inform renewable energy policy?
- Which policies influence behavior with respect to energy efficiency?

Coordination Priorities/Research Questions

- How do other international Arctic communities approach the administration of energy systems (both renewable and non-renewable)? Could alternative approaches used elsewhere work in rural Alaska?
- How can we increase opportunities to enhance public-private partnerships? (In which the community and private enterprise are in a win-win situation)?
- How do we provide more accurate information on energy efficiency upgrades/programs/behaviors to both villages and consumers so better choices can be made?
- What is Alaska's long term vision on renewable energy and energy efficiency? (especially with respect to building design and energy code). Some Alaskan communities and regions have implemented their own building standards, are these working? How far advanced are the building standards from state standards?
- What new approaches to energy and maintenance management services might be effective in remote communities (especially given the State of Alaska's fiscal situation in 2016)?
- How could a "network of energy educators" be created to:
 - > Provide information on whole house functionality?
 - > Provide information on what is working in other local villages/information sharing?