

## ***Northern Energy Efficiency, Architecture and Design – A 2013 Week of the Arctic Summary***

### **Alaska Should Have a Goal to be the most Energy Efficient Place in the U.S.**

During the presentation session of the Week of the Arctic's event, "Northern Energy Efficiency, Architecture and Design," obstacles were identified and opportunities present in the energy efficiency spectrum were highlighted. Experts came together to support the notion that Alaska should have a goal to be the most energy efficient place in the United States, expressing that we have known how to build in cold climates for decades. There is a strong push to focus on implementation on what Alaska already knows, what needs to be done, and how to do it to support this notion. This forum created working groups to brainstorm challenges and opportunities in the areas of innovative design (new and existing structures), emerging technologies, regulations and codes, diversity among Alaskan communities and financing.

Innovative design in the Arctic acknowledges that problems in innovation stem from lack of funding, not lack of ideas. Because of Alaska's harsh weather, expensive shipping costs and unpredictable terrain, creating and maintaining buildings in rural areas is extremely expensive. Many existing structures are in need of retrofitting, but finding which ones to focus on is difficult. Although innovative design is a crucial aspect of efficient building, we must also stress that learning how to retrofit old buildings is just as important as learning how to build a new one. Suggestions for how to face these problems first and foremost included embracing local knowledge and working with existing structures. By understanding specific needs of a community and incorporating existing practices into a union of design and future maintenance aspects, there can be continuity in every operation throughout the buildings lifetime. Additionally, innovation in another form includes updating old structures to meet new standards by recognizing that one of the most sustainable buildings is the building that is already built.

Although there is a huge emphasis on converting to new and exciting technologies within the international community, focusing on the correct application of existing methods is fundamental. While wind, tidal, solar and geothermal are all intriguing options, implementing such technologies is much more difficult than merely imagining them. Fear of the unknown and a lack of leadership in new technological fields are becoming issues, especially when coupled with little to no tax incentives being given to emerging technologies. These factors are essentially creating an environment that focuses on negatives, such as liabilities, under financing, maintenance costs, and regulatory issues, instead of simply improving current methods. To begin that process, communication between the public and private sectors is key. Recognizing the need for a change in discussion focusing on providing incentives for customers to use energy efficiency, as well as improving communication between Alaska and other northern nations who currently employ alternative technologies, will be a step in the direction of reaching full energy potential.

In Alaska, there is currently no statewide energy code. There are efforts underway to revise codes to meet energy efficiency standards, which includes downsizing the six state agencies in charge of regulating energy codes into two. Also problematic are procurement rules, specifically in regard to retrofitting existing buildings; inefficiency in bureaucratic systems makes property cost reductions almost impossible to procure.

The sheer size of Alaska and the diversity among its communities pose tough issues for energy efficiency, as unique considerations must be taken in the designing process for different geographic regions of the state. In order to make projects successful in all corners of Alaska, panelists stressed the importance of recognizing this challenge and combatting through the use of local energy potential, knowledge and culture to an advantage. This starts with finding the perfect fit within communities that both integrates local culture and needs, as well as maximizes upon advantageous factors of geographical location (e.g, tidal energy opportunities, stable ground).

Common to discussion at the event was the desire to see increased private sector financing for long term efficiency projects. Additionally, incentivizing energy efficiency in itself has large associated costs, which panelists attributed to lack of education of the benefits of energy efficiency. Educating private funders and end users about the values of energy efficiency, as well as developing a shared network of information between businesses would create competitive incentive to move towards efficiency.

Energy efficiency is nothing new for Alaskans who have carried the burden of high energy costs throughout the years. However, this forum allowed for the collaboration for existing projects and solutions that require collaboration from all sectors. Entrepreneurs in energy efficiency need the resources to coordinate with people that can finance the projects, people that can start the development process and those that can design and build. Emerging technologies will only be as useful as the collaborative effort backing them as Alaskans look toward the future to becoming the most energy efficient place in the United States.