U.S. DEPARTMENT OF ENERGY | Office of Indian Energy

National Strategy on the Arctic Region (NSAR) – Ten Year Renewable Energy Strategy

Tribal Consultation and Stakeholder Outreach Meeting Notes and Analysis

Prepared by Denali Daniels and Associates, Inc.

Fall 2014

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December 2014

Background

The Department of Energy (DOE) Office of Indian Energy has been assigned the lead for the section of the NSAR charged with developing a ten year renewable energy plan for the Arctic region. In October and November 2014, stakeholder outreach and tribal consultation sessions were conducted across Alaska. The approach with outreach was unique in that no predetermined decisions had been made, and the information gathered will help shape the development of the ten year renewable energy plan for the Arctic. The stakeholder outreach and tribal consultation sessions were held in Anchorage (10/23-24), Kotzebue (11/5), Nome (11/6), Fairbanks (11/10), Barrow (11/12), Bethel (11/14), and Unalaska (11/17). In addition to collecting input through the stakeholder outreach and tribal consultation meetings, public comments were accepted through December 12, 2014, by e-mail to IndianEnergy@hq.doe.gov or by fax to 202-586-1534.

This report summarizes the public process to date, and will serve as a basis for developing a draft report in January 2015. A that point, a comment period on the report document will begin, with the goal of a final report completed by April 2015. A review of the status of regional energy plans and other strategy documents will be incorporated into our report document. The objective is to capture already existing energy planning activities within the context of renewable energy and identify gaps or areas appropriate for federal agencies, specifically for consideration in the NSAR process.

Methodology – Tribal Consultation and Stakeholder Outreach Meetings

Planning

In each location, local tribal and energy leaders were consulted to help determine best meeting dates, venues, and promotion. A comprehensive contact list was developed for each meeting. The timing of the meetings was scheduled strategically to kick off at the Alaska Federation of Natives (AFN) convention in Anchorage and were completed before the Thanksgiving holiday.

Tribal Consultation

The purpose of the tribal consultation sessions was to offer government-to-government consultation to federally recognized Tribes, and to seek early and meaningful input into the planning and decision-making processes under the ten-year renewable energy planning process for the Arctic region. It is rooted in the special relationship between the Federal government and Tribes established in the United States Constitution, and recognizes and supports tribal

sovereignty.

Stakeholder Outreach

The purpose of the stakeholder outreach meetings was to have a similar dialogue with non-tribal stakeholders regarding a ten-year renewable energy plan for the Arctic region. Non-tribal government agencies, nonprofits, regional organizations, utilities and members of the public were encouraged to participate.

Both the Tribal Consultation and Stakeholder Outreach meetings were open to the public and each followed similar agendas and format.

Meeting Promotion

The Secretary of the US Department of Energy signed and sent a formal letter and email announcing the meetings to all tribal entities in the Arctic region. A flyer was created and was distributed at the Alaska Rural Energy Conference in September 2014 and at Alaska Federation of Natives in October 2014, and forwarded via email. Meeting details for each location were promoted via local newspaper and radio, as well as sent out to a listserv of critical stakeholders and tribal entities in each community and statewide. Phone calls to local contacts were made within a few days prior to each meeting. There were challenges in engaging participation from remote locations outside the hub communities, and options for future engagement using teleconference, webinar or other technologies is in discussion.

Attendance

Attendance at the meetings ranged from 2-22 participants. The quality and seniority of participants for these meetings is noteworthy, which included the Lt. Governor of Alaska, Alaska Native Corporation executives, village corporation leadership, State Legislators including those in leadership positions, utility managers and leaders representing key renewable energy groups in Alaska. All meetings provided a venue for meaningful and actionable discussion among decision-makers, tribal leaders and stakeholders.

Meeting Agendas

Each 2-hour agenda used the following format:

Introductory presentation – Pilar Thomas, Acting Director, Department of Energy, Office of Indian Energy or Givey Kochanowski, Alaska Program Manager (20 minutes)
Attendee introductions and opening comments (30 minutes)
Round robin (10 minutes each)

- Tribal renewable energy goals, concerns, gaps and opportunities
- Funding opportunities such as public-private partnerships to support renewable energy project deployment
- Programs to support existing and future deployment of renewable energy projects
- Innovative technologies in renewable energy

Reconvene – report out (10 minutes)
Attendee closing comments (20 minutes)
Adjourn

Analysis

Meeting Notes and Analysis

Meeting notes were taken for each meeting. The public input was then analyzed by assigning common themes and quantifying frequency of each theme mentioned during the meetings. Frequencies were then prioritized. The top themes are reported in this section as follows:

Top Themes	Tally
Innovative technology/ R&D	54
Training/ Workforce	52
Coordination	48
Basic infrastructure/ Hybrid systems	46
Funding	39
Cost	31
Capacity/ Technical assistance	27
Regulations/ Resource access	27
Programs	26
Best practices	22
Energy planning	22
Housing and building standards	22
Wind	21
Economic development	19
Energy efficiency	19
Biomass	14
Geothermal	13
Interties	13
Process	12
Emergency response	11
Solar	11

Following are the top four mentioned themes:

1. **Innovative technology/Research & Development**
   Most discussions focused on utilizing proven renewable energy technologies with a need for some research of similar isolated grids located in Arctic locations for application in Alaska, with the understanding that some research and development is needed to assure technologies are appropriate. Most Arctic communities are powered by stand-alone systems without the reliability benefits of an electrical grid. An assessment of successfully utilized micro-grids in other Arctic locations for potential application in Alaska is an interest by tribal leaders and stakeholders. There have been a number of failed renewable energy projects that have not considered the unique Alaska situation, and public input suggests that if renewable energy will be successful in Alaska, appropriate technologies should be developed, potentially replicating other isolated places in the Arctic. Further, Alaska could prove as a successful testing location for developing certain technologies for export internationally.

2. **Training and workforce**
   A mentioned issue throughout the meeting process was a concern over adequate training and workforce appropriately organized and equipped to operate and maintain renewable energy systems. Local capacity is limited to operate and maintain existing energy systems and adding renewable systems to the mix without robust training and/or capacity building is a significant concern.

3. **Coordination**
   Arctic stakeholders and tribal leaders would like more information about what they can expect from other federal agencies working on other elements of the NSAR and how they are all coordinating. Coordination of all efforts including local entities, regional, statewide, federal and international is a need that was consistently voiced through the public input process. Project development should have increased coordination at all levels.

4. **Basic infrastructure/Hybrid systems**
   Renewable energy only makes sense if the supporting infrastructure (i.e. hybrid diesel generator system, transmission/distribution system or fuel storage system, etc.) is upgraded. Because rural Alaska communities operate on stand-alone systems, in the long term diesel generation or some other hybrid fossil/renewable system is a practical expectation when considering how renewables will look in ten years. Many communities received basic infrastructure through the Denali Commission for bulk fuel upgrades and/or power plants, however these programs have been limited in funding in recent years leaving many communities without reliable diesel systems. Public input suggested a concern that while renewable energy is a desirable goal, reliable basic infrastructure must be included in the plan.

Additionally, there is a concern that coastal communities are not prepared with appropriate physical infrastructure or human capacity to respond to potential international shipping or tourist traffic in the arctic region. A specific concern about the potential environmental impact on traditional subsistence activities is a common fear and while it does not relate to renewable strategies it is noteworthy. The approach of conducting outreach and consultation in advance of developing the report has been well-received by stakeholders with positive feedback received at all meetings.

Public Comments

Once the statewide meeting process was launched, a public comment period was opened with the deadline of 12/12/14 to provide written comments. Comments were accepted by e-mail to IndianEnergy@hq.doe.gov or by fax to 202-586-1534. Additionally, comment forms were distributed at each meeting and either collected in person or emailed to either contractors or DOE afterward. Some comments forms were emailed upon request and submitted later.

A total of 14 comments were received throughout the process. Comment cards totaled 13. The information from the public comment process is summarized on page X of this document and this input has been integrated into the analysis and next steps sections along with the meeting input. Of the public comments collected, the most frequent themes that arose were around – in this order of frequency – funding, innovative technology/research and development, cost, energy planning,

training/workforce. Other top themes mentioned in the comments were basic infrastructure, energy efficiency, sustainability, best practices, and economic development.

Top 20 Public Comment Themes	Frequency
Funding	**11**
Innovative technology/ R&D	**11**
Cost	**9**
Energy planning	**9**
Training/ Workforce	**7**
Basic infrastructure	**6**
Energy efficiency	**6**
Sustainability	**6**
Best practices	**5**
Economic Development	**5**
Local control	**5**
Programs	**5**
Capacity/ Technical assistance	**4**
Coordination	**4**
Hybrid systems	**4**
Solar	**4**
Tribal representation	**4**
Wind	**4**
Hydro	**3**
Subsistence	**3**

Next Steps

This report is the first step to the next phase of this process which will be a written report open for comments starting in early 2015. The report will include a gap analysis of regional energy planning efforts in Alaska and what an appropriate role for the National Strategy for the Arctic Region might look like in the context of a 10 year renewable energy plan. Specific attention will focus on public private partnerships to assist in moving the plan forward. The final report is scheduled for completion in April 2015.

Tribal Consultation – Anchorage

October 25, 2014 – 3:00 to 5:00 p.m. – Alaska Federation of Natives Convention, Dena'ina Center

DOE Participants

Pilar Thomas and Givey Kochanowski were present on behalf of the Department of Energy (DOE), Office of Indian Energy. DOE contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, Holly Spoth-Torres and Chelsea Ward-Waller.

Participants

Theresa Clark/Bill Culbertson, Olgoonik Corp (Wainwright)	Elizabeth Moore, Inupiaq, NANA Corporation
Nichola Rudy, Alaska Native Village CEO Association (ANVCA)	Sean Hochanader, UIC
Kristin Keit, Tlingit/Inupiaq, Bureau of Indian Affairs (BIA) Alaska Region	Weldon (Bruce) Loudermilk, DOI-BIA Regional Director
Kimberly Carlo, Chief Operating Officer (COO), Interior Regional Housing Authority (IRHA)	Doreen Lampe, Barrow, Inupiat Community of the Arctic Slope and Native Village of Barrow
Will Calembert, engineer/seafood industry	Lisa Isaacson, Tanacross, Tanana Tribe
Gene Therriault, Alaska Energy Authority (AEA)	Max Ahgeak, Barrow, North Slope Borough Public Works
Noelle Kompkoff, Tatitlek	Will Hutto, Soldotna, Moore Foundation
Amy Sparck Dobmeier, Qissunamiut Tribe (Chevak)	Sonny Adams, NANA Corporation
Joel Neimeyer, Denali Commission	Maver Carey, President/CEO, Kuskokwim Corporation
Michael Baffrey, US Department of Interior (DOI)	Kirk Perisich, Juneau, Sealaska, Carpenter's local 1281
Walt Kalerusrd	Kelly Gross, Oregon

After an overview presentation by Pilar Thomas, the following discussion took place.

Notes	Themes
It was initially asked why a 10 year plan and not a 50 year plan, with discussion following about the need to be inclusive of all planning, both short and long term. Another question was asked about how the DOE was conducting the outreach. The meeting schedule was recapped to the group, indicating the 7 statewide consultation and outreach meetings, locations and dates, and that comments could be submitted until December 12, 2014. Also it was noted that once a draft plan was developed there would be a future opportunity to provide input. A request was made to provide more	Process

specific in advance of the meetings to allow for preparation.	
A participant representing Inupiat Community of the Arctic Slope indicated concerns about Arctic plans and invited DOE to a Tribal Council meeting in Barrow, indicating the need for assistance working with the Coast Guard.	Coordination
A participant from the Tribal Council of Tanacross share that their community is excited about their biomass resources and they also are looking into hydro.	Biomass Hydro
A representative from the Barrow from the North Slope Borough Public Works Department shared they are working with wind and micro turbines with new technologies and 4 studies going on across the North Slope.	Wind Micro grids
A representative from Juneau, Sealaska, Carpenter's 1281 local introduced himself to the group and expressed interest in assisting with workforce challenges.	Training/ Workforce
A representative from the Moore Foundation in Soldotna expressed an interest in alternative energies with greenhouses and biomass.	Food Security/ Agriculture Biomass
A representative from the NANA Regional Corporation indicated that in their region they are looking at wind, biomass, solar, hydro, ready for renewables in villages but they need roads to get them there and access to federal lands, a new port facility, help the region with technical assistance. Thanks was expressed to DOE for providing grant assistance.	Wind Biomass Solar Hydro Regulations/ Resource access
A representative from the Kuskokwim Corporation commented that they hope to help tribes with grants for wind and geothermal. Recommendations were made to establish a priority list of projects and to ask how tribes can be sustainable. It was suggested that it would be appropriate to have tribes to hire /employ; sustain and maintain after projects are in place.	Capacity/ Technical assistance Deep water port Wind Geothermal Training/ Workforce
Tribal Leadership from the Native Village of Point Hope commented that more research on windmills and birds is needed, and that lots of barriers/delays/lack of understanding existed. Investments in renewables should be a tax benefit, there is no good infrastructure for tribes to gain funds. There is a lack of representation of North Slope in state organizations.	Innovative technology/ R&D Wind Tax incentives Basic infrastructure/ Hybrid systems
Caribou are leaving because of airplanes and helicopters, how will projects affect wildlife/mitigation of subsistence?	Subsistence
There is a need to reduce utility energy costs and increase life span of	Cost

materials. There is a need to manage strategies of capacity building. There is a need to create jobs, specifically linemen. A question was asked about how the DOE work with Department of Commerce (DOC) is also concurrently collecting comments, and it was shared that copies were available in the room. It was asked whether DOE materials would be available for use, and in response it was noted that this was this information would be made public. There is a need for the Community/Corporation investment for 1-years should include maintenance. It was suggested that unions offer training programs and workforce development. It was suggested that we look to other Arctic/Antarctic countries for innovative technologies. It was recommended that tribal administrative buildings should be factored in. A need exists for additional outreach and long term assistance. Another need would be to create a forum for cross-community/ villages/ region communication of best practices. Other comments: Programs that Support Renewable Energy Projects - Reduce utility operations costs, including replacement/extending life span of equipment, sustainable - Tribal capacity building, training and operations, work force development, union training programs - Program redesign around funding prioritization, based on AK recommendation, and/or direct funding, what would the scheme look like? - Best practices from other Arctic nations and provinces/territories - Long term technical assistance for tribes (project and planning) - DOE: tribes-corporations collaborate Tribal Renewable Energy Goals - Share best practices across borders (and other arctic regions) - Sustainability (cost of operation, skills locally to maintain, magnetic generator/innovative technology, maintainable) - Deploy appropriate technology for specific villages (site specific) - Integrate federal/state/local efforts - Tribal capacity building - Local control (?) of funds, tribes/villages responsible for project jobs/procurement, etc.	Capacity/ Technical assistance Training/ Workforce Coordination Process Sustainability Training/ Workforce Innovative technology/ R&D Basic infrastructure/ Hybrid systems Best practices Cost Basic infrastructure/ Hybrid systems Capacity/ Technical assistance Training/ Workforce Funding Best practices Capacity/ Technical assistance Coordination Best practices Sustainability Technology Coordination Capacity/ Technical assistance

Renewable Energy Innovative Technologies - Magnetic generators - Lengthen lifespan of infrastructure - Cold climate technology (windmills function at -40F) - Look to other arctic countries for innovation - Enhanced cool geothermal Funding Opportunities/Public-Private Partnerships - Corporations invest in projects based on opportunity for long term cost savings	Local control Innovative technology/ R&D Sustainability Best practices Geothermal Funding

Stakeholder Outreach – Anchorage

October 26, 2014 – 10:00 a.m. to 12:00 p.m. – U.S. Fish and Wildlife Service Building

DOE Participants

Pilar Thomas and Givey Kochanowski were present on behalf of the Department of Energy (DOE), Office of Indian Energy. DOE contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Lieutenant Governor Mead Treadwell Cameron Eggers, Deputy Chief of Staff, Office of the Lieutenant Governor Jesse Logan, Office of Senator Lesil McGuire and staff to Alaska Arctic Policy Commission (AAPC) Chris Rose, Renewable Energy Alaska Project (REAP)	Erin Whitney, Alaska Center for Energy and Power (ACEP) Joshua Kindred, Alaska Oil and Gas Association (AOGA) Drew Cason, Jack Ferguson & Associates/Northstar Group Charles Sink, Chugachmiut Connie Fredenberg, UMA

After an overview presentation by Pilar Thomas, the following discussion took place.

Notes	Themes
Is there a spot for non-renewables in the implementation plan? In many cases, traditional renewables are not the cheapest option, and developing local fossil resources would be more appropriate, and the current plan may not fit the state's needs. Discussion followed about the other sections of the plan relating to fossil fuel development and how they relate to the renewable energy section, recognizing that a mix of fossil fuel and renewable sources is the practical option for Alaska. If we're talking about better, then we probably mean stably priced, and asked how energy efficiency fits into the plan. Alaska could become world leader in building design as goal. The plan shouldn't just be about heat and power generation. Other issues include more local employment, workforce development supporting a more long term economic engine. Micro grids can help with diversity of power sources and encourage Independent Power Producers (IPPs), and we need to aim for sustainability, local source of energy and keeping money in the region. For example, we could explore Pilgrim Hot Springs and other energy export business activities to regional communities.	Basic infrastructure/ Hybrid systems Cost Energy efficiency Housing and building standards Training/ Workforce Micro grids Local control

Heating is more important than electricity, and at this time there is no record of how much energy is being used for heating. If we could look at amount of money spending per year, communities may be motivated when money is calculated and will want to be part of the solution, related to best practices.	Data: Heat
Include the potential for communities that could be exporting salmon processing and may not be due to power costs. Also, a state agreement with NASA on airships is about to renew allowing oil companies drill without building ice roads. We should include research and development in the plan, looking at circumpolar and rural-to-rural cooperation for shared learning.	Economic development Basic infrastructure/ Hybrid systems
Further support for Island Research Center current programs could help to provide leadership for wind-diesel technologies. Also the ability for DOE to support RCRE to understand what pilot projects are working/not working, what's the scope of the generation of wind-diesel and then invite private sector to compete to execute/deploy.	Innovative technology/ R&D Basic infrastructure/ Hybrid systems
Many projects don't work properly because we separate diesel and renewables, it is hard to integrate them and we need diesel plant upgrades to compliment renewable installation.	Basic infrastructure/ Hybrid systems
Connect different federal funds to leverage/integrate projects.	
Add 'Appropriate' to plan title to accommodate diesel or natural gas or coal.	Basic infrastructure/ Hybrid systems
We may consider using the term 'hybrid' more to show that component.	
Energy storage is also a huge component and asked if the feds could fund R&D for this. We need to get better at smaller scale.	Innovative technology/ R&D Scale
Self-sufficiency is important both on and off the road system and we should use renewables that are in place to keep the money/jobs in the community, which are at risk to losing communities when schools go away because there is no economic incentive. When you put in all the capital costs of renewables into communities it is a slow process with grant money. Villages want to but don't know how to go about it. Appropriate technology is important as people are afraid to utilize energy. We should look at more ammonium and hydrogen, biomass on a small scale side where you don't need diesel for 90% of year.	Sustainability Innovative technology/ R&D Biomass Scale
Look at communities with aspiration to mining, oil spill response, shipping, and port construction. A chapter should be focused on R&D opportunities	Innovative technology/ R&D

such as storage, CO2 to CO or small scale nuclear.	
How will success be defined? The number of projects deployed would be irrelevant to success. He asked how much funding would be invested.	Funding
There has been $70M in R&D and deployment in villages in the last few years. Public-private partnerships need to be brought in for sustainability and we'd like your input on how we prioritize. You define success for us.	
We are interested in what DOE needs might be so that they can bolster their programs.	Coordination
Education and capacity building at the village level is opportunity, technical assistance is available from DOE.	
Tribal health authorities have taken leadership and no conflict of interest. AVEC is a place to start we should encourage certification for operators and grant money for this area.	Training/ Workforce
A partnership with the Alaska Power Association. During his time at Kotzebue Electric Association they had in-house capacity for maintenance, and it is important to work directly with utilities.	Training/ Workforce Capacity/ Technical assistance
Training facilities already exist that could be utilized for targeted programs.	Training/ Workforce
Operators are hard to keep on as it is a part time job with high turnover, so we need to figure out how to support technologies in long term with this in mind.	Capacity/ Technical assistance Training/ Workforce
Success = criteria related to workforce development, availability of systems, tied to efficiency, how much has community saved, potential measure related to commercialization path and plan (tidal), housing authorities and that Emerging Energy Technology Fund match is needed.	Energy efficiency Cost Economic development Innovative technology/ R&D
International partnerships were critical, citing hydrogen program canceled which would work phenomenally in Alaska/Arctic which burned ties with Russia and it is important to keep up these relationships.	Funding International relations
While National Renewable Energy Lab partnerships are helpful, we still need to find models that are suited to Arctic, and expressed a concern that we not create more 'DOE monuments'. There is no one size fits all. We need to think about construction seasons and best practices.	Scale Best practices Coordination
A project development best practice involves modeling so that private	

investor see them producing. This changes the incentives for sustainability. In addition we should consider scaling up of logistics to reduce transaction costs and installation.	
A burn box for local communities be considered.	Waste energy
We can control costs, but can't control price and we should talk about long-term stability of price which supports the renewable advantage.	Sustainability
Wind project sizes need to be appropriate for rural Alaska.	Wind Scale
A way to share cranes across communities across barge seasons should be explored.	Coordination
We need to be sure we figure out how to prevent projects from becoming black holes, create standards and open/accessible information, feedback to communities affected, education and to motivate investors.	Best practices
Don't hold ourselves to the Arctic line; that we extend to communities in other parts of Alaska that could use this; and that we don't limit to renewables.	Basic infrastructure/ Hybrid systems

Stakeholder Outreach – Kotzebue

November 5, 2014 – 10:00 a.m. to 12:00 p.m. – U.S. Park Service Building

DOE Participants

Givey Kochanowski was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Clara Jones, Northwest Arctic Borough Fred Smith, Northwest Arctic Borough Sonny Adams, NANA Margaret Hansen, State of Alaska Department of Commerce and Community Economic Development Cyrus Harris, Maniilaq Association Maija Lukin, Maniilaq Association and Mayor of Kotzebue	Derek Martin, City of Kotzebue Charlie Nelson, Maniilaq Association Liz Moore, NANA Lance Kramer, NANA Rose Barr, Vice President, Land and Regional Affairs, NANA Brad Reeves, Kotzebue Electric Association

After an overview presentation by Givey Kochanowski, the following discussion took place.

Notes	Themes
We should have affordable energy in 10 years.	Cost
Discussion about levels of goals for the ten year strategy, including the following: home level (create their own energy), community level (wind generators). This would allow the community to save as a whole because of homes saving.	Housing and building standards Basic infrastructure/ Hybrid systems
The federal agencies should be working together: how does this component (renewable energy) communicate across to oil and gas component? Oil and gas is a federal interest for economic development. With the 2016 program expiring, would this prevent continued Northwest Arctic Borough (NWAB) investment and development into solar and renewable due to lack of federal funding? There is also a question about the energy needs of new stakeholders in the region and new energy demands as region grows.	Basic infrastructure/ Hybrid systems Coordination Solar Wind
Another participant expressed interest in a program to increase involvement in remote tribes at these discussions, such as paying for their travel.	Process
There is an interest in continued friendship and willingness to have these	State support

discussions, and it was suggested that the state should follow the federal model of consultation.	Programs
Innovative technologies could include CIAP (Coastal Impact Assistance Program) funds (solar array for water/sewer; LED fixtures on sea highway and street fixtures) to offset the cost of living. There is interest in establishing an energy steering committee as well as assessing the possibility for biomass in Kotzebue (solid waste to energy).	Innovative technology/ R&D Energy leaders Biomass
A participant commented that the region/community should continue to lead the way in renewable energy.	Energy leaders
Another individual discussed the number of positive projects and deliverables happening in the region that can be highlighted as successes.	Best practices
A barrier is the lack of access to renewable energy resources on federal lands and across federal lands (transmission lines, roads to support transmission lines). This access will be critical for a regional grid.	Regulations/ Resource access Micro grid
Energy in the home includes education on carbon footprint reduction (personally, at home). An IGAP (Indian Environmental General Assistance Program) coordinator was suggested in each village to educate the community on reducing energy use (i.e. watching football vs being able to have the lights on in the evening). An example of a success story is a stakeholder's parents who live in a house in rural Alaska off the grid with solar and wind.	Education
The 'Kill A Watt' program, run by KEA, was brought up as a good and successful program.	Programs Best practices
As the region pursues development, a stakeholder asked about the types of federal support that are available to make that happen.	Federal support
Village coordinators want to see a plan where they will use renewables to offset their diesel use.	Innovative technology/ R&D
Even though one of the best cold weather research centers in the world is in Alaska, a participant noted, building to the best standards is still not happening. Buildings are leaking heat, and that energy reduction starts with design. The housing authority build with a solar/thermal component.	Housing and building standards
The housing authority was meeting 5-star building rating, but retrofitting is the priority.	Housing and building standards

A stakeholder expressed interest in a third-party review of utilities (electricity, water, and sewer) that a house uses on a daily basis. If the improvements in design extended to the utility, there might be a better way to operate, for example on a regional basis. Getting an independent look might present many more opportunities for improvements.	Utilities
On the topic of schools, the communities are stuck with certain square footage and energy use.	Housing and building standards
Utilizing renewables at affordable rate and having a local workforce trained ahead of time were two themes brought up again by other participants.	Training/ Workforce
The possibility of individual home wind generation going directly to a generator, suggesting the region could create them, order them, install them on homes, and then review energy savings per home. This project would reach the person using the energy directly. Other home technologies were brought up such as wind energy to energy cells.	Wind Bulk fuel purchasing
An example of a best practice is the Maui utility solar program.	Best practices Solar
NANA and NWAB representatives presented their prepared comments that were pulled from their regional energy plan and a group discussion followed. The representatives discussed the Cape Blossom Regional Port as a priority among others, and particularly as a strategic defense location, and expressed interest in getting technical assistance from DOE on this project. There was also an interest to give approval authority to DOE at the Alaska level, due to their understanding of the situation here. Funding coordination was a major theme the representative discussed, particularly around the poor timing of the state fiscal year, federal fiscal year, construction season, local match requirements. Another concern was the shallowing of the upper Kobuk rivers, which requires fuel to be flown in. The representatives suggested a long term or short term goal could be to dredge the rivers to make it cheaper to deliver fuel. Additionally, there is a desire to have the permitting process for different agencies more streamlined and manageable. Givey followed up this comment with a suggestion for specifics to be provided. The representatives also discussed the importance of roads and transmission lines for the Northwest Arctic Region. The suggestion was to partner with University of Alaska Fairbanks to promote economic development and creating jobs. Form task force could be created to get this done, the representatives explained, and DOE should be part of this task force. With regard to permitting, the participants discussed that they had to relearn the process every time, and interest was expressed in having a permitting coordinator to help stakeholders through the process, which could decrease development timeline for projects in NANA and other regions (the Kivalina	Deep water port Capacity/ Technical assistance Coordination Funding Programs Interties Economic development Training/ Workforce Regulations/ Resource access Capacity/ Technical assistance Energy leaders Independent Power Producers

road was given as an example of a project that would never be developed because of this issue). The representatives asked for technical assistance in determining whether forming a regional energy authority made sense as a way to deal with utilities and provide benefits, particularly in understanding the pros and cons. The concept of NANA becoming an independent power producer was brought up as part of this discussion. NANA expressed a desire to be invited to the Public-Private Partnership meeting that will be held early in 2016.	Public/private partnerships
There is no clear way to fund interties through the state or federal funding.	Funding Interties
New technologies should be tried in this region, because all problems that the Arctic faces are happening in this region. The region could be a federal proving ground/testing in Arctic.	Innovative technology/ R&D
The school board is trying to plan for youth to take on jobs in the region, and there is available infrastructure to bring renewable energy training to the Northwest Arctic Borough.	Training/ Workforce Basic infrastructure/ Hybrid systems
Local energy resources are available locally and that they should be used locally. There was a specific requests for $1M in federal money in lieu of taxes for federal lands in the area.	Regulations/ Resource access
Another area that could use coordination is the bulk purchase of fuel through red dog mine, but the barrier to this solution is that villages can't pay ahead of time. Villages could be able to tap into federal fuel cost as another solution to this problem.	Bulk fuel purchasing Coordination
It was asked if there would be a group coordinating further work or if DOI and DOE would just be staying in touch.	Coordination
Natural gas over oil would be the best resource to put right to work in the NANA region. Seismic work should be done with the current technological capabilities.	Natural Gas Innovative technology/ R&D
Remote villages needed to be incorporated into this discussion more. The remote villages have a lot of representation in Borough meetings, which would be a good time to reach out to them.	Local control

Tribal Consultation – Kotzebue

November 5, 2014 – 1:30 to 3:30 p.m. – U.S. Park Service Building

DOE Participants

Givey Kochanowski was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Ingemar Mathiasson, Northwest Arctic Borough Alex Whiting, Native Village of Kotzebue Sonny Adams, NANA	Liz Moore, NANA Fred Smith, Northwest Arctic Borough

After an overview presentation by Givey Kochanowski, the following discussion took place.

Notes	Themes
It was asked whether there would be any other teleconferences/forums to provide input, and Givey responded that comments are being accepted until December 12, 2014 and that there would be another comment period on the draft report.	Process
Finding the best funding source to match for projects is a challenge, and there should be a measuring stick to prioritize projects based on the best fit funding available.	Funding
State projects normally get a lot of federal funding, but tribal entities miss out on this funding because they're not recognized by the state government, only by the federal government.	State support
Interties, roads and basic infrastructure in Villages are an ongoing, critical need in the region, and a major barrier is construction and shipping costs. Developing a road system would create jobs and opportunities for the region, and allow energy projects to be sustainable. Kotzebue relies on regional communities for resources and those communities rely on Kotzebue for energy.	Interties Basic infrastructure/ Hybrid systems Cost
There is a programmatic disconnect between renewables and non-renewables in terms of policy.	Basic infrastructure/ Hybrid systems
A suggested renewable energy project in the region would be an Upper Kobuk hydro project that could provide energy in summer and an intertie	Energy planning

could provide wind power in winter. Another potential for the region to create its own revenue source/funding stream, such as the CD-5 (Colville Delta Bridge Project) or a potential of oil royalties funding regional infrastructure.	
Renewable energy includes biomass, and there is potential for a project for 3 upper villages of Kobuk. This project has been getting funding source for one community at a time. No program is comprehensive in scope and they all have gaps, so there is a need to find (at least) two pots of money Indian Environmental General Assistance Program (IGAP) to completely fund a project.	Biomass Coordination Funding
A way to reduce cost would be to haul bulk fuel in spring to upper Kobuk villages so that not as much has to be flown in 3 communities in lower Kobuk.	Bulk fuel purchasing
The 6 communities in the region that did not benefit from the bulk fuel program of the Denali Commission, which still have not had upgrades since the 1950s-60s, including Noatak and the upper Kobuk villages. The participant continued that these villages cannot upgrade to renewables because of dilapidated generators.	Basic infrastructure/ Hybrid systems
A suggestion by another individual was to include (clean) coal reserves in the plan.	Innovative technology/ R&D
Waste heat ideas and innovations on a community scale is already being pursued, but it must be efficient so there isn't air pollution. Everyone is currently burying garbage in tundra, which is a potential source of energy.	Waste energy Regulations/ Resource access
An individual expressed interest that all homeowners living in the Arctic be given twenty times the tax credit of homeowners in the lower 48. Another participant commented that the problem with tax credits is that the mechanism only helps working families, not those that need the cheaper energy. Tax credit programs require effort, manpower, and money to remain in compliance, and programs like this are administratively burdensome in rural Alaska.	Tax incentives
The region/tribe should step up and provide its own access to low interest loan programs and that regulations are self-defeating.	Funding
The federal investment in infrastructure/interests in the Arctic, including the value and whether this funding was being met.	Funding
Bulk fuel purchase concept, including the fact that the issues with logistics	

are understood but there is still a need to understand fuel numbers. The discussion continued that the numbers depend on where the fuel is coming from and where it's going to. Red Dog's purchasing power and cargo tanker is a way to bring in fuel at a lower cost. This concept has already been approved by Red Dog.	Bulk fuel purchasing
The region has not been able to access bulk fuel at lower prices for over 10 years. Not all the communities can accept the fuel in bulk due to storage issues, and some communities have different fuel needs (for example, needing 2 different kinds of fuel to power and heat a community). There is a decreasing market for high sulfur diesel, and therefore higher price of this fuel is a challenge.	Bulk fuel purchasing
There is an interest to move towards renewable energy and less fossil fuel, but the region needs to fix current infrastructure before moving forward. The strategy does not adequately reflect the status of the Arctic region today.	Basic infrastructure/ Hybrid systems Basic infrastructure/ Hybrid systems
There is a need to make a wind project cost effective for community of 100 rather than 1000 and make sure the community knows how to build and maintain the turbines.	Wind Capacity/ Technical assistance Training/ Workforce
Training for workforce development in the region and not just from Anchorage, for all technologies including solar panels. Collaboration with the technical center, college, magnet school that is already established as a way to build on systems the regional already offers.	Training/ Workforce
The opportunity to be a proving ground for Arctic renewable energy in the Arctic. Geothermal testing; there is information from the 2008 assessment that was done in partnership with UAF. The resource is too far away from the village, and the transmission line cost was too high when the testing was done. They hope to do some shallow drilling in the region.	Geothermal
The need for interties and additional information, specifically with regard to remote sensing and resource assessment, even if infrastructure was taken care of.	Interties
Another interest expressed was for the federal government to increase renewable energy data and help facilitate research in the first 10 years of this strategic plan. The overlap of the state of Alaska and BLM prioritized mapping could be a starting point.	Data: Renewable energy Coordination
Kotzebue Electric Association's obstacles with their wind farm were discussed, which stem from funding sources worrying about too much wind.	Wind Funding Storage

The region could use more wind and resolve the problem of using only one economic equation. Other obstacles include the high cost, and the need for storage if more windmills were installed. We should look at other options to produce heat if there is too much wind available. FAA and FWS also provide obstacles, although money was initially provided (3-4 years) for operations and maintenance.	
Studying existing renewable energy in the Arctic should be part of the plan, particularly around what has worked and what hasn't.	Best practices
Further testing in the region of wind energy to hydrogen power is needed.	Wind Innovative technology/ R&D
A specific project described by a participant was a $50 million emerging technology research center for the Arctic, in the Arctic, which could include hydrogen and waste heat research and development that would work on an Alaska scale and further examine the concept of a sustainable Arctic village.	Innovative technology/ R&D
ARPA-E (Advanced Research Projects Agency – Energy) should do test project in the Arctic.	Programs
Comments from Stakeholder Outreach meeting as presented by NANA and NWAB: NANA and NWAB representative presented their prepared comments that were pulled from their regional energy plan and a group discussion followed. The representatives discussed the Cape Blossom Regional Port as a priority among others, and particularly as a strategic defense location, and expressed interest in getting technical assistance from DOE on this project. There was also an interest to give approval authority DOE at the Alaska, due to their understanding of the situation. Funding coordination was a major theme the representative discussed, particularly around the poor timing of the state fiscal year, federal fiscal year, construction season, local match requirements (expand what this means/long term value?). Another concern was the shallowing of the upper Kobuk rivers, which requires fuel to be flown in. The representatives suggested a long term or short term goal could be to dredge the rivers to make it cheaper to deliver fuel. Additionally, the representatives expressed a desire to have the permitting process for different agencies more streamlined and manageable. Givey followed up this comment with a suggestion for specifics to be provided. The representatives also discussed the importance of roads and transmission lines for the Northwest Arctic Region. The suggestion was to partner with UAF to promote economic development and creating jobs. Form task force could be created to get this done, the representatives explained, and they commented that DOE should be part of this task force. With regard to permitting, the participants discussed that they had to relearn the process every time, and interest was	Deep water port Capacity/ Technical assistance Coordination Funding Programs Interties Economic development Training/ Workforce Regulations/ Resource access Capacity/ Technical assistance Energy leaders Independent Power Producers

expressed in having a permitting coordinator to help stakeholders through the process, which could decrease development timeline for projects in NANA and other regions (the Kivalina road was given as an example of a project that would never be developed because of this issue). The representatives asked for technical assistance in determining whether forming a regional energy authority made sense as a way to deal with utilities and provide benefits, particularly in understanding the pros and cons. The concept of NANA becoming an independent power producer was brought up as part of this discussion. The participant representing NANA expressed a desire for NANA to be invited to the Public-Private Partnership meeting that will be held early in 2016. There was a concern expressed by the representatives that there is no clear way to help fund inter-ties through the state or federal funding. Another comment from the stakeholders was that new technologies should be tried in this region, because all problems that the Arctic faces are happening in this region. The region could be a federal proving ground/testing in Arctic, suggested the individuals. The school board is trying to plan for youth to take on jobs in the region, explained the stakeholders, and there is available infrastructure to bring renewable energy training to the Northwest Arctic Borough. The representatives emphasized that local energy resources are available locally and that they should be used locally. There was a specific desire for $1M in federal money in lieu of taxes for federal lands in the area. Another area that could use coordination is the bulk purchase of fuel through red dog mine, explained the stakeholders, but the barrier to this solution is that villages can't pay ahead of time. There was a suggestion that villages could be able to tap into federal fuel cost as another solution to this problem. For more details on this input, please see additional packet supplied by NANA and NWAB.	Funding Interties
Concerns were expressed about melting permafrost leading to sinking villages and sea level rising. What is being done about this? Relocation policies or a coordinated agency effort is recommended. A pre-emptive plan is needed and the National Science Foundation (NSF) is the lead on this.	Coastal communities
Another barrier to progress is that emergency funds can only be used to replace housing and infrastructure in kind rather than to updated standards. Need for interties and generators, and the need for access to federal lands. Plans for interties from Shungnak to Ambler, Noorvik on, and Kotzebue to Cape Blossom have been made. A participant asked this message gets back to DC and how can the region educate the decision makers about who should receive the funding.	Funding Emergency response Interties Basic infrastructure/ Hybrid systems Regulations/ Resource access Process

There was a request for a more centralized place for people to make decisions, such as in Alaska.	Process
There is an opportunity as Chair of Arctic Council to educate the rest of the country about the importance of all of these pieces.	International relations
The Remote Community Renewable Energy Partnership (RCRE) response from the Alaska Arctic Policy Commission (AAPC) is that there are already existing plans for the region, but help is needed in implementation and mapping on regional lands. The U.S. Department of Interior (DOI) needs to start taking the steps to enact a Coastal Impact Assistance Program (CIAP)-like approach to pay for implementation in the Arctic. It doesn't meet the region's needs to be stuck on renewable energy and there should be a direct connection between building out infrastructure in Arctic and energy development.	Coordination
CIAP helps people achieve the plans they already have, and doesn't solve problems. The Borough has been putting metal in the ground by using solar instead of diesel with CIAP funding.	Programs Solar
The parks in the region should be accessible, and it's getting more expensive to access them because of the same lack of infrastructure.	Regulations/ Resource access
Does the U.S. Department of Defense (DOD)'s plans would be associated with this 10 year plan?	Coordination
A desire for 25% investment in a Kotzebue Electric Association port was suggested, so that assets could come into the region.	Deep water port
The intertie from Noorvik to Selawik, then to Kotzebue was again remarked on as a priority.	Interties
Final questions of a participant were how are would the group get feedback, what would the follow up be to this meeting, and would a second round of consultations be back in Kotzebue.	Process

Stakeholder Outreach – Nome

November 6, 2014 – 10:00 a.m. to 12:00 p.m. – Kawerak Board Room

DOE Participants

Givey Kochanowski was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Jacob Martin, Sitnasuak Native Corporation Rob Bensin, Bering Straits Native Corporation Iura Leahu, Department of Commerce and Community Economic Development, Division of Community and Regional Affairs	Pearl Mikulski, Planner, Kawerak, Inc. Sterling Gologergen, Norton Sound Economic Development Corporation Melanie Bahnke, Kawerak, Inc.

After an overview presentation by Givey Kochanowski, the following discussion took place.

Notes	Themes
It is difficult to think about renewable energy goals when communities are having crisis with current energy plants and basic infrastructure. Teller and Golovin have power plants in a flood zone. Wales is in need of updated bulk fuel tanks.	Basic infrastructure/ Hybrid systems
How will this plan be affected by federal government changing, specifically with Senator Murkowski role on the energy committee?	Process
An increase in shipping is happening now, not going to wait 10 years.	Economic Development
What are the steps that are going to have everyone's strategy come together and figure out where separate work connects? When the Alaska Arctic Policy Commission (AAPC) was asked this question, they had blank response when ask how they are working with these plans.	Coordination State support
We should reduce the cost of energy, the effects on cost of living and the ability to participate in global economics.	Cost
We should reduce the cost of transporting diesel here or find alternate source of energy	Innovative technology/ R&D Shipping
Alaska Center for Energy and Power (ACEP) partnership funding ran out for pilgrim to discover hot spot.	Geothermal

Norton Sound Economic Development Corporation (NSEDC) has $1M for every member community and there are gaps with state and federal agencies assisting smaller communities who don't have administrative capacity to ask for funding. Some examples of funding include meter based replacement and replacing street lights to LED and washer/dryer to energy efficiency. The $1M isn't eligible for planning and technical assistance, only for plans that are ready. They need someone to do the work, planning and engineering and the resources. NSEDC going to hire private grant writer to fill this gap.	Funding Capacity/ Technical assistance
Regional energy plan should be taken a step further with more data collection and energy analysis. First coming up with 10 year plan and not looking at current infrastructure seems backwards.	Innovative technology/ R&D Basic infrastructure/ Hybrid systems
Create energy team within communities to create goals and mission for 5 years and 10 years out. More self-supporting, because funding isn't available other than NSEDC.	Energy leaders
Homes are getting disconnected from grid because they can't afford energy costs	Housing and building standards
Workforce development is major priority. Denali Commission should re-fund energy training. There should be a staff member placed in each region.	Programs Training/ Workforce
Technical assistance is lacking everywhere, including Kawerak, and needed to guide us to access funds. We're not experts so we need menu of options to comment on.	Capacity/ Technical assistance
Arctic is unique given conditions – not able to turn off diesel generators. Savoonga went a month without energy and considered disaster. Recommended goal: low cost energy, enough power, protecting natural environment. Heating bills are more than electricity, but people see those bills less often. One solution would be district heating. There are lots of inefficient boilers and hot water heaters. District heating examples from Russia and Canada should be considered. Most are built on community buy-in, but communities here don't have money to spend on that. Pilgrim Hot Springs could be district heating micro-grid example.	Basic infrastructure/ Hybrid systems Emergency response Cost Basic infrastructure/ Hybrid systems Regulations/ Resource access Cost International relations Best practices Geothermal

It's difficult to comment on renewables when existing infrastructure is not sufficient.	Basic infrastructure/ Hybrid systems
Northwest Arctic Borough (NWAB) solar connection to water treatment plant is good example.	Solar
We need to connect to the grid.	Basic infrastructure/ Hybrid systems
Building standards: there is a major housing crunch in the region with families sleeping in shifts because there isn't enough sleeping space. We can only increase building standards if funding for building increases, because the cost of increased standards could be more expensive and reduce available funds for subsidized housing.	Housing and building standards
All federal programs should come with federal funding. No unfunded mandates.	Funding
Energy raters are not available and there is no way to get a low income home to agree to a low-interest loan. Alaska Building Energy Efficiency Standards (BEES) great for railbelt, but the data is incorrect/not accurate for rural Alaska.	Energy efficiency
We need to collect data on rural Alaska, community-wide energy audits. Spend a month, week, whatever it takes to determine what needs to be done such as the condition of energy plant. This will also require a database, website.	Data: Renewable energy Energy efficiency
Collaboration is need with everyone around the table, need to work together. Who is doing what?	Coordination
Home energy rebate program not set up for rural Alaska. Federal government could create housing energy rebate program for Arctic Alaska.	Energy efficiency
BIA (Bureau of Indian Affairs), Housing Improvement Program (HIP) costs could have been reduced if all the homes could have been built in the same village, and if the cities and boroughs could use federal funding to work on these projects.	Coordination Program
Technical assistance is needed for villages on energy development.	Capacity/ Technical assistance
Federal government/agencies in the region using energies should pay for 30% of infrastructure costs for their use.	Funding
Arctic shipping: all the traffic in the region puts a risk on region,	Funding

environment, and people. Tax should be set up to pay for infrastructure that will be needed to support this development. Safety, infrastructure and energy. We need to find a way to participate in off-shore development.	
Get tax credits to incentivize private industry. Ones that just expired could be higher.	Tax incentives
Kawerak has compacted with the government; it used to be through BIA. In doing so, this extended programs to Kawerak because they've taken over government. This was a good model, and we should expand compacting.	Coordination
E-rate Schools and hospitals get discounted telephone and internet, other government entities should get to use that discount too.	Federal support
Improvement in other shortfalls by having qualified people to maintain and operate windmills, street lights. Training and experience needed.	Training/ Workforce
Kawerak has EET (emerging energy technology) partner to work with on energy occupations. Investment in human capital.	Programs
Technical assistance would go a long way in seeing what community needs. Rural Alaska Maintenance Program (RAMP) should be funded and extended to Arctic.	Capacity/ Technical assistance Programs
We should look into Alaska Village Electric Cooperative (AVEC) for funding structure. AVEC operators don't qualify for anything and has no incentive, no health benefits, etc. We should get rid of things that aren't working.	Funding
Long-term follow up, people held responsible for construction and energy efficiency.	Sustainability
Don't inadvertently increase cost to user. People can't afford upgraded systems.	Cost
Appropriate technology. Don't create burdens. Careful about regulations putting in place.	Innovative technology/ R&D
Leveraging funding for training (scholarships, limited vocational training in villages). Able to train a lot of people in the villages when Denali Commission had funding.	Training/ Workforce Programs
Local hire. NSEDC is a great partner for training and education. Arctic people building Arctic projects.	Training/ Workforce

Not doing a good enough job to gear up for jobs that are coming with Arctic development.	Training/ Workforce
Fuel vendors provide training this is good.	Training/ Workforce
Crystal cruise lines in 2015 with 1000 people at @ $20-100K – money floating by with no hotels or infrastructure.	Economic development
Figure out what the next program is that will incentivize in-region industry	Programs
Use Section 29 model in which the state prepares at least one model home rule charter for a city, borough, and unified municipality	Programs
When mines opened, mines should have to invest in state trust fund.	Economic development
Jones Act needs to be looked at to determine whether tax incentives or partnerships could be beneficial to Arctic residents.	Tax incentives
Constructing a port is part of federal obligation in protecting Arctic.	Deep water port
Anything the government puts in place and anything that prevents that should be waived with a cost-benefit analysis.	
Arctic is always going to rely on natural gas or diesel. Look at cost efficient way to get it here.	Innovative technology/ R&D
Create prototype community where all federal/state agencies focused and well-orchestrated.	Programs
Develop regional energy groups that take over with Native preference for power production.	Energy leaders
Power Cost Equalization (PCE) goes back into pot for every Kilowatt (Kw) saved.	Programs
Federal agencies that partner with each other have different requirements.	Coordination
Corporations that can must give land.	Regulations/ Resource access
Wave match requirements in the Arctic for the next 10 years.	Funding
Example of Kawerak construction companies could be used for energy projects.	Funding

The history of federal government investing in infrastructure has Alaska missing out on what the lower 48 got.	Funding
There's a real need for tradesmen in communities. Training in communities would provide trained workforce and equipment.	Training/ Workforce
Arctic training center or more money to Cold Climate Housing Research Center (CCHRC).	Training/ Workforce
On the subject of net metering, if there is too much, it hurts utilities and ultimately could hurt rate payers.	Independent Power Producers Training/ Workforce
Some criteria should be set on trainees and trainers that is tied to funding.	Training/ Workforce
We lost funding for apprenticeship program, so there is no apprenticeship program. People don't want to be gone from their communities. No equipment in community for Commercial Driver License (CDL). Example of Pipeline training center. It is expensive to train and there is no backup.	Training/ Workforce Local control
Fairbanks and Anchorage are not the answer to training maintenance operators. Hub communities could work.	Training/ Workforce
People need to be tradesman, so that they have multiple backgrounds. Northwest Arctic Career and Training Center (NACTEC) needs to be expanded.	Training/ Workforce
Training needs to be focused on young people. Job shadowing, internships. Demographic needs to be under consideration.	Training/ Workforce
Federal Department of Labor does not have presence up here. We should bring them up for workforce development.	Training/ Workforce
Up-and coming region in terms of cooperation/collaboration. The nurse example could be used in which everything is paid for including allowance. CDQ should be able to tap into federal funding for this.	Training/ Workforce Funding
Washeteria could generate waste heat energy, water-energy nexus, waste to energy, particularly in Diomede and Teller. Teller is rationing water and there is a question about responsibility for washeteria. There is a need for training, technical assistance and financing. There should be a requirements for repair and maintenance for water treatment.	Waste energy Training/ Workforce Capacity/ Technical assistance
More outreach on coordination. Denali Commission is a good model.	Coordination Programs

To develop a goal we should first thank the Venezuelans for their assistance in helping Alaska be more of a grid. There should be consolidation of lending programs. Federal buying programs could be leveraged. Innovative housing designs should be considered. Basic infrastructure like bulk fuel facilities, street lights and backup generators should be addressed before jumping into renewables. Many programs don't acknowledge traditional subsistence economy when reviewing eligibility for grants or loans. In the summer, because money is tight, many residents turn off their phones. Food security is a concern as stores are stocking less food and costs are increasing. This is due to increased transportation costs. All plans should have tribal representation. Meters to gather heat data should be installed. There is a need for more prevention for storm threats.	International Relations Economic development Programs Cost Innovative technology/ R&D Basic infrastructure/ Hybrid systems Subsistence Programs Food security/ Agriculture Basic infrastructure/ Hybrid systems Tribal representation Data: heat Emergency response

Tribal Consultation – Nome

November 6, 2014 – 1:30 to 3:30 p.m. – Kawerak Board Room

DOE Participants

Givey Kochanowski was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Larry Pederson, Bering Straits Native Corporation Kevin Bahnke, Bering Straits Native Corporation Frank L. Johnson, II, White Mountain Native Corporation	Francesca Fenzi, KNOM radio Dora Hughes, Mary's Igloo Native Corporation

After an overview presentation by Givey Kochanowski, the following discussion took place.

Notes	Themes
Increase housing standards consistent with passive standards. Historical building standards are unsustainable for operations. Arctic must have higher standards than anywhere else. Increase funding to advance this effort. Home conservation should follow. A goal could be that passive house, such as the standard used in Germany are used in the Arctic. Any way to passively heat home (from solar, for example). Prescriptive vs performance standards in energy rating should be used.	Housing and building standards International relations Best practices Solar
Previous building standards, houses were built to breathe which is inappropriate for the Arctic. While standards could increase cost of construction, using passive house standard Housing authority can build from design to construction with same/similar budget impact.	Housing and building standards
Explore how to get resources like thermal energy, such as Pilgrim, to population centers. The problem of infrastructure, terrain, distance and the need for 20-30 miles of transmission line. Additional, good information is a limiting factor for moving to next step--research needed. We need to get some development out at the site, including production well. What can be done locally at the site? By integrating agriculture site that is a self-sustaining community, and monitor temp and flow rates as a starting point. Another goal could be to demonstrate that geothermal works in the Arctic. There was a sustainable community out there at one time. Erroneous for residents to think largest expense is electricity--it is heat. Pilgrim demonstrated that. It provides free energy, and is stable.	Geothermal Interties Food security/ Agriculture Data: Heat

Another goal could be to cut energy costs by 50%. With no road, reducing transportation costs prohibits to future project viability. Need to plan for the future and take care of today.	Cost
We need performance contracting in every community, reducing operating costs---for all savings. Currently Power Cost Equalization (PCE) goes back to the state. This is a disincentive. If savings given to contractor, huge incentive for the contractor.	Funding Cost Programs
We need a larger port and ferry service to reduce transportation costs. Nome has a big enough port for a ferry. The number of shippers has doubled over the past 3 years. We need infrastructure for potential incidents from shipping and increased traffic. Currently there is a 4 day distance of response time which needs to be reduced. We need to add spill kits in villages with local responders trained in communities.	Deep water port Economic development Emergency response
Wireless transmission of power--develop this technology. Go back to higher frequencies for electricity--which are more efficient.	Innovative technology/ R&D
Renewables need to be part of a bigger energy mix (petro-based, coal).	Basic infrastructure/ Hybrid systems
Get more pellets to rural Alaska, transporting at affordable price.	Biomass
Develop coal technologies, using local sources.	Innovative technology/ R&D
Biomass--multi-burn capability (waste, pellets, coal). Waste energy study--waste heat, local waste product, sewage lagoon.	Biomass Waste energy
Goal--2-5 waste energy projects in the region.	Waste energy
Build a warehouse for project needs---package conexes to ship goods/projects out to the villages). This would provide a center that would also allow residents to work--and build up a business--expanding economic development of region.	Energy planning Economic development
Cost-benefit ratio, as part of grant review analysis puts small communities out of competition.	Cost
Aging infrastructure in this region's villages is a big issue. Savoonga is an examples, with FEMA as a barrier. Federal, state and city policies regarding no funding for building in flood plains is also a barrier.	Basic infrastructure/ Hybrid systems Regulations/ Resource access
Connect micro grids together through wireless.	Micro grids

Rural schools (Buckland, for example) have had buildings designed beyond what a community can afford.	Housing and building standards
We should tap into Alaska Native Science and Engineering Program (ANSEP) and have student designed facility.	Training/ Workforce
Prioritize communities that are suffering due to things like sewage lagoon beyond its useful life. Put this in the regulations. Should we ration energy? Teller is going to Brevig Mission when they are out of fuel.	Basic infrastructure/ Hybrid systems Regulations/ Resource access
There is a frequency of breakdowns in power plants.	Basic infrastructure/ Hybrid systems
Fund the programs that are in place (new generation units) to meet reliability.	Programs Tax incentives
Tax incentives provide funds upfront or a portion of it, rather than reimbursement to start project at the front end.	Funding
Trust land title restricts bank loans, rather than rural or subsistence lifestyle. Also Patriot act requires a physical address to secure a bank loan which is a problem resulting in denying loans.	Regulations/ Resource access
Training is needed qualifying residents to do the work needed to get done. Tuition is not an issues, rather transportation and per diem costs during training eats up all the funding.	Training/ Workforce
Increase communication capability so can access online training. Increased web based training.	Training/ Workforce
Large meeting teleconferences don't work, because of the large number of people on the phone line.	Economic development
Each community in region is concerned with increased level of visitors year round and the impact on water storage and limited fuel and any one time.	Basic infrastructure/ Hybrid systems
Public private partnership for testing battery storage.	Innovative technology/ R&D
Integration and dispatch for power distribution.	Basic infrastructure/ Hybrid systems
Renewable energy projects went into Wales, Selawik and Savoonga before meeting supporting infrastructure needs. In Nome, many adjustments had to be made to wind project.	Basic infrastructure/ Hybrid systems
There is a need to analyze and publish best practices before projects are deployed.	Best practices

Oversight, scalability, "one size" fits all--doesn't work. Due diligence needs to be conducted on track record of vendors. Experience in Nome with private funding, a vendor went out of business soon after. DOE can provide technical assistance. Establish lab site for testing and training. How is RCRE (Remote Community Renewable Energy) going to be tested? Database of all projects deployed in region/state for review for lessons learned and best practices.	Scale Capacity/ Technical assistance Public/private partnerships Innovative technology/ R&D Training/ Workforce Best practices

Stakeholder Outreach – Fairbanks

November 10, 2014 – 10:00 a.m. to 12:00 p.m. – Bureau of Land Management

DOE Participants

Pilar Thomas was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Jack Hebert, Cold Climate Housing Research Center Shannon Erhart, Executive Director, Tanana Tribal Council PJ Simon, represents 10 tribes in the Yukon-Tanana Subregion for Tanana Chiefs Conference (TCC) Kimberly Carlo, COO, Interior Regional Housing Authority (IRHA) Dave Yokel, Wildlife Biologist, Bureau of Land Management (BLM) Stacy Fritz, Anthropologist/Subsistence Specialist, BLM	Kimberly Chancey, Indian Health Service Energy Coordinator, Alaska Native Tribal Health Consortium Debbie Nigro, Wildlife Biologist, BLM Terry Chapin, Professor, University of Alaska, Fairbanks (UAF) Amanda Byrd, Alaska Center for Energy and Power (ACEP) and UAF Dave Pellunus-Messier, Tanana Chiefs Conference Gwen Holdman, ACEP

After an overview presentation by Pilar Thomas, the following discussion took place.

Notes	Themes
There is a potential for hydro, wind, geothermal in area to go green, and becoming good stewards while alleviating the cost of energy and needed funding. Discussion about how many more meetings there would be. Another round of comments with meetings in Anchorage and Fairbanks once the draft is finished, in addition to teleconferences and webinars. There will also be an energy listening session in Washington, DC following an upcoming conference. Power/energy needs are going to go down due to global warming. If more development happens, that will be different. All the villages will need to convert from diesel to natural gas. Rural villages want to harness natural energy.	Hydro Wind Geothermal Cost Process Economic development Natural Gas Energy efficiency Coordination

Energy efficiency in concert with renewables has to be vetted. Traditional knowledge should take place individually, community wide and statewide; making a decision on quality of life and how we will live in the next 100-/200-years. To think just more money or resource extraction will lead to a better life is false. Reducing demand of heat/electricity must be a goal. Thermo-electric stoves, burning wood. It should be simple.	Energy efficiency Traditional knowledge Innovative technology/ R&D Biomass
Housing is an issue, and trying to bring people back who moved out to find jobs and cheaper living. Energy, electricity and fuel are issues. Concern is biomass, mainly how long can we harvest before we're worried about no more to harvest. Training for maintenance people for new technology will be needed. It is expensive to bring others in, and parts often are delayed. The turn-around for people trained and making it all economic is a challenge. People who own power/cable/telephones don't live in town anymore. Make the goal-seeking narrowed down to make it more practical. Need for more support to make current systems work. Local capacity is needed for residential maintenance. Auto mechanics, welders, water/sewer/plumbers, general repairmen. Concerns over long term harvest management and training personnel to keep a position filled.	Housing and building standards Biomass Energy planning Training/ Workforce Capacity/ Technical assistance Training/ Workforce
Set a goal of reduce energy imported into a community. Would rather see technician in to work on a hybrid system. Technology goes hand in hand with imported energy. Information is available on how much fuel imported for power plant, but not as available on fuel. This may be proprietary but it does exist. We should include Everetts, Crowley and others in this discussion.	Economic development Basic infrastructure/ Hybrid systems Basic infrastructure/ Hybrid systems
Lots of information available on housing needs assessment (70,000 homes). Anchorage vs Bethel on energy use. Payoff on energy efficiency is one-time deal. State can act as an Energy Service Company (ESCO). People were fine before the pipeline. In less than a generation, people don't know if they can continue to live here due to the size of the homes, energy used. We just need to live/think differently.	Housing and building standards Energy efficiency State support Innovative technology/ R&D
Look at communities and all available resources. What can we do within communities without moving outside and keeping money inside the community? Providing good training programs with instructional videos and constant ongoing training. We should consider training more women to do jobs with maintenance because they stay in the communities more while men are subsistence hunting and fishing. Systems should be locally owned. Buy-in from the community is important as they are proud of 'their' energy source.	Local control Training/ Workforce
Bettles/Alakaket, high oil prices. In the Koyukuk, we don't want what we don't ask for. Trying to address dependence on fossil fuels. Want to engage	Innovative technology/ R&D

in productive conversations. Bettles has micro solar. Hughes has geothermal and has constant wind, just need 17 miles of infrastructure. Indian Mountain there is military site and we could provide power to them.	Solar Geothermal Military presence
Good time to think about where we want to be as the federal government is trying to organize. Groups like Tanana Chiefs Conference working on regional coordination and communities are thinking about needs at village level. Concerted effort for how the different kinds of activities and needs come together at different levels, coordination across levels is needed. Thinking about wood production and biomass plant planning, investment in infrastructure at 3-4 levels: federal, state, regional tribal level, village level.	Coordination Biomass
In planning, we tend to focus on one solution. Proponent of hybrid systems due to Alaska and changes that occur here. Integrate all the different resources that are available in each area. Stronger and more reliable than any one system would be on its own.	Basic infrastructure/ Hybrid systems
We need to focus on efficiency. Tribes have a hard time paying for monthly costs. Public buildings too. Building with state and federal funding should require certain building standard in terms of efficiency so that our tribes can maintain operations and payroll. We need effective training and outreach, making sure communities aware of what's available, and technical assistance for those tribes that want it. Focus on finding the right program for the right community. It is a step by step process; first efficiency, then renewables. We need improved outreach, as the information isn't getting back around.	Energy efficiency Basic infrastructure/ Hybrid systems Training/ Workforce Capacity/ Technical assistance
There will be a state energy code. We will figure out ways to build things that are energy efficient and lower cost. There is a synergy to look at energy and way of life. Everything has to be considered in a holistic approach. Problems are complex and interconnected and we must work together to come to a real solution. The barrier is simple: community with lowest energy costs in the nation, controlling votes in the state. The real expense isn't just the cost of what we spent to keep the building warm, it is socially, what it's doing to the environment. Votes and who we elect is keeping this from changing.	Housing and building standards Energy efficiency Coordination
Helped put together TCC building codes. Yes, they make them more expensive, because design firms based in Anchorage are not familiar with rural Alaska, and newer. To get change, there is a cost. Down the line the cost will go down. Community is burdened with housing stock. Building science is important to understand. Important to understand the whole design and design it all together.	Housing and building standards Cost Innovative technology/ R&D
Cheaper in the long run. Simplicity is less expensive.	Energy planning

Would love to build more energy efficient homes, but we need more homes. Need to push traditional knowledge as a high priority because we are losing elders. Don't want to reinvent the wheel, but don't know who to tap and find for information on feasibility. We need one point of contact, and inventory to search.	Energy efficiency Capacity/ Technical assistance Cost
Cost vs price. CCHRC (Cold Climate Housing Research Center) has designed model to make them equal. Same challenge with renewable energy technology. How do we make renewable energy cheaper to install? What can we be thinking about as federal government to reduce cost of technology so that it is viable? R&D perspective?	Cost Innovative technology/ R&D
If a component of the building/construction is creating the energy, that's the easiest. Problem is how to get through winter when it is dark and cold.	Innovative technology/ R&D
Biggest problem with wind turbines is often those turbines produce more energy than we need, and lots of places turn them off when that happens. Use $30M to put in 10 small turbines instead of 1 large one, so that they're easier to maintain and control and so we can share the load. No one huge source anywhere, but many little sources, whatever they are. Can't solve the problem all year long with one solution.	Wind Innovative technology/ R&D Scale
Need to be careful of unintended consequences. Distributed generation can be big problem for utilities that are already struggling. Need to do it with coordination between utility and community. To reduce construction costs there is self-erecting turbine being tested. An idea might be a competitive Request For Proposal (RFP) looking for targeted technologies in a way that they can reduce the installation.	Utilities Coordination Cost Programs
Utilities are the ones responsible, and conservative. One example is that Nome is looking at geothermal, ACEP did baseload research with DOE funding and allowed utility to purchase energy. Can we give them ownership? We don't want our interests to get lost in bureaucracy.	Utilities Local control
Communities that are most agile more likely to integrate renewable. More of an effort to combine utilities into tribal entities, common goal and lower energy costs. Streamline buildings, O&M, less downtime, more organization go into the design.	Coordination
Regionalization of energy production, workforce, utilities (little AVEC), makes sense depending on where you are, what you're doing. Understanding,	Energy planning

developing, implementing support for projects then can become circular and interdependent. Don't want unintended consequences.	
Important workforce component. Is this a new way of generating new revenue, link to global markets. Alaska has 15% of world micro-grids. This is expertise that is exportable, a way to make our own systems stronger and connect all over the world. DOE could help facilitate this connection. We think half of the population of the Arctic is micro-grid. It could be useful to document this information.	Training/ Workforce Coordination Micro grids
Can we focus on successes and move them to broader successes.	Best practices
Public/private partnerships to collaborate with DOE. Look in interior Alaska where median household income is lower than Barrow.	Public/private partnerships
Model looking at public-private partnership, lease land for renewable energy projects from tribe/homeowner, but system maintained by utility and funding from private company. Might not reduce bill, but might give royalty payment/payback. The arrangement would be between developer and utility.	Public/private partnerships Regulations/ Resource access Funding
Before closing, participants were asked to provide final comments:	
Cooperation, sharing knowledge, keeping everyone in the loop, trained. Sharing regional knowledge	Coordination
Idea of demonstration project that addresses all of issues a community faces. Regional effort to pool skills.	Programs
Going to the people who are going to be the recipients and making sure they have what they want, when, how.	Local control
Thank you to Pilar and Denali for putting this together.	
Like the conversation, thank you.	
Resilience is the priority. Not focused on kilowatts and money, but expanding to social aspects and how they transformed the community in a positive way with many unintended benefits. Fort Willows (Canada) has an example of a non-electric stove and growing biomass for renewable energy.	Sustainability Best practices
Thanks for educational opportunity.	
Bringing in diverse crowd for the discussion is helpful.	

Renewed interest in rural Alaska from DOE. Great to see assistance and attention. Highlight the ability to partner on technical assistance with DOE – solid benefit. More grant opportunities: suggestion would be to allowing partnership for the cost share.	Capacity/ Technical assistance Cost
Potential for energy in rural Alaska. Obstacles on land ownership. We want green energy. There could be an executive order to have each individual who wants TV and video games needs to be plugged into a bicycle.	Regulations/ Resource access Coordination
Small, rural communities get lost in the dust with emerging technologies. Trauma for older generations of this change. Men in villages have lost purpose, need jobs and support. More grants with cooperative agreements. Pull together as region.	Coordination Training/ Workforce Energy planning
Appreciated this dialogue. Announced roundtables on rural energy. Next one at Provider's conference.	

Tribal Consultation – Fairbanks

November 10, 2014 – 1:30 to 3:30 p.m. – Bureau of Land Management

DOE Participants

Pilar Thomas was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Kimberly Chancey, Indian Health Service Energy Coordinator, Alaska Native Tribal Health Consortium Stacy Fritz, Anthropologist/Subsistence Specialist, BLM	Michelle Moses, Alatna Tribe Geraldine "Geri" Simon, Senior Vice President, Administration, Doyon, Limited Bart Garber, CEO, Toghotthele Corporation

After an overview presentation by Pilar Thomas, the following discussion took place.

Notes	Themes
What are successful proposals that have come through this region? Minto and Arctic Village are two recent examples.	Best practices
It was asked whether there any successful hydro project in the state, with some discussion about test sites for in-river hydro.	Hydro
Technology innovation should be added to regional energy plan templates.	Innovative technology/ R&D Energy planning
It was asked whether tethered wind turbines related to DOE, with some discussion of that technology – though not a DOE initiative.	Wind
Discussion about whether interior villages could co-share turbines or other sources of energy, particularly whether they were too far apart.	Interties
Discussion about villages using grants to hire consultant to see these projects through, write grants, etc. This previously occurred but not as much anymore. Regional non-profits are encouraged to beef up their energy positions.	Capacity/ Technical assistance Energy planning
Regionalization: one wind farm serve 3-4 villages, increase workforce, buying program	Energy planning
Discussion about deploying a 'pay-it-forward' program work in Alaska, where	Best practices

a chain of communities is created that then helps the next community. Network is created, sharing best practices, trained regional workforce.	
No one size fits all, but can replicate models. State regional planning exercise. Plan needs to reflect different levels of view: village/community, regional, state, national, international? What are the linkages and efforts that help at each of those levels?	Best practices Energy planning Coordination
Training - need assistance with applying for help/funding. Currently getting training from TCC, UAF, but not consolidated. Needs to be centralized, get bigger bang for your buck. Best training module is HUD around housing for energy - one venue where one size fits all. How many villages attend Rural Energy Conference?	Capacity/ Technical assistance Housing and building standards Training/ Workforce
Different levels of capacity and ability in village of 700 vs village of 20. Interior doesn't get fiber optics.	Best practices Capacity/ Technical assistance
Have there been any programs where a homeowner agrees to pay current bills (bill doesn't go up or down) and then company makes home more energy efficient/retrofit with renewables? Leasing programs?	Programs Housing and building standards Funding
Examples include solar cities, others. Challenge of distributed energy (electricity for a single building). Technology control challenge.	Solar Local control
Economics of renewables on a small scale is a major barrier. Everyone needs to understand local utility's economics.	Scale
Shannon – more capacity building and outreach funneling down to tribal level.	Capacity/ Technical assistance
Accessing affordable energy will determine whether a community will exist or not.	Cost
It wasn't always the way it is now. Used to be potato farms and barley farms.	
Implementing the youth into the energy plans so they understand.	Education
Mission statement to put forward about why remote, rural Alaska should survive.	Energy Planning
Native Corporations to leverage their tax situation to build a project.	Tax incentives

Stakeholder Outreach – Barrow

November 12, 2014 – 10:00 a.m. to 12:00 p.m. – City of Barrow Chambers

DOE Participants

Pilar Thomas was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Max Ahgeak, North Slope Borough Public Works Power and Light Kraig Michels, North Slope Borough School District, Facilities	Lauren Berdow, North Slope Borough Law Jackie Schaeffer, WH Pacific

After an overview presentation by Pilar Thomas, the following discussion took place.

Notes	Themes
How is this project is tied in with the Arctic Policy Commission. The Borough is trying to do wind-diesel in Point Lay, using Kotzebue and Nome as examples of best practices and to learn from, but they need a battery to work. Applying for state funding for this project is difficult because funding switches between railbelt and rural every other year and it is not consistent.	Process Basic infrastructure/ Hybrid systems Battery storage
The Borough's plan depends on state funding. The Borough is waiting to do wind-diesel in Kaktovik, and the community really needs it. Starting with Point Lay and then work to other villages, and Point Hope is next. They need to get another permit. The Borough needs to reduce carbon footprint, but all of the power generation depends on diesel. There is a meeting on LNG November 12, 6-8pm in Barrow. Barrow has its own utility, but the Borough public works manages Kaktovik, Nuiqsut, Anaktuvuk Pass, Atqasuk, Point Lay, Point Hope, and Wainwright.	Energy planning
Controls need to be changed to integrate wind into power plant. In the North Slope all the power plants have been funded by Borough, but that funding is going down while operation is going up. At some point the Borough could go to 80% renewable energy eventually, but they must start small. A current technology barrier is that when the energy is needed the most, the windmills stop working (30 below zero, wind too strong).	Basic infrastructure/ Hybrid systems Basic infrastructure/ Hybrid systems
What are research and development needs, including micro-grid components that do everything they need to? Also, are there any workforce	

development challenges/goals that the participants wanted to see included in the plan?	
There is a need for qualified people and a need to take training to the villages. The Borough is sending people from Point Lay, Point Hope, and Wainwright train at AVTEC (Alaska Vocational Technical Center) in Seward on wind-diesel operations and maintenance. The village power plants provide enough work for a full time operator in each village.	Training/ Workforce
We could have micro turbines to provide heat and energy when the power plant goes down. BIA and HUD could work together to lead by example. There could be more collaboration with the school district as well. There is a need for input from other entities on this, and the City of Barrow is reluctant to pass resolutions.	Innovative technology/ R&D Coordination
The schools are working on waste heat.	Waste energy
The regional government or the Inupiat Community of the Arctic Slope (ICAS) could go for a grant for a regional training center, but there would need to be a fool-proof plan. There is regional interest in development but no load bank. The village of Atqasuk is looking at an intertie from Barrow and they're also looking into ceramic heaters. Atqasuk is arguing that they need a diesel generator and an electric boiler. The village could use ceramics as a load bank from wind generation. Each village needs their own individualized plan.	Training/ Workforce Interties Innovative technology/ R&D Energy planning
Communities on the coast have other issues, and those issues make it unfeasible to have family of windmills. The gap in this region is the level of facilitation and network of support to bring everything together, collaborate.	Coastal communities Coordination Housing and Building standards
The district has 2 new gymnasiums planned, and renovations on current buildings. Teacher housing in Point Lay is also planned.	Energy efficiency Training/ Workforce
There is more that could be done in schools for energy efficiency. There is no commission and a lack of training for operations and maintenance. There should be a policy to improve building standards.	Housing and building standards
The Borough is not going for grants because of reporting requirements and they require too much paperwork.	Regulations/ Resource access
There should be more coordination between federal and state on other programs.	Coordination
Timelines and scheduling are tough in the Arctic. There is a need to extend the life of grants by streamlining logistics. The construction window is 3-4	Coordination

months of the year, and this is a barrier for federal and state grants. Solar in the Arctic is being looked into it for fish camps, but there still needs to be more engagement with the local people.	Solar
I have looked into solar and tidal for villages, and there is a study being done by National Science Foundation on tidal at this time.	Innovative technology/ R&D
The ice presents a challenge when trying hydro and tidal in the Arctic. Ocean River Power Company is doing research and development along the coast for tidal testing. Waste to energy is part of the regional energy plan, including an incinerator in Barrow. There is a need for more technology on waste heat that could be used on a small scale region wide, specifically resolving the challenges with gasification. Greenhouses powered by renewable energy could also address the food security issue. Right now there is a lack of knowledge, and people are only living day to day without looking beyond. The planning efforts will help create snapshot so that everyone can see what's there.	Innovative technology/ R&D Waste energy Food security/ Agriculture Hydro Tidal Solar
The education component of the planning process is getting people involved and aware of their energy. The barrier would be getting curriculum integrated in the schools.	Education
The residential learning program could be a place to start the curriculum. The science camp put on every summer as a place for the curriculum, ANSEP (Alaska Native Science and Engineering Program).	Education

Tribal Consultation – Barrow

November 12, 2014 – 1:30 to 3:30 p.m. – City of Barrow Chambers

DOE Participants

Pilar Thomas was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Charles Brower, Native Village of Barrow Thomas Olemaun, President, Native Village of Barrow Ava Edwardson, North Slope Borough Grants Tim Rowe, North Slope Borough Grants Jackie Schaeffer, WH Pacific, Inc	Bob Harcharek, Mayor, City of Barrow Annie Akootchook, Natural Resources and Environmental Protection Director, Inupiat Community of the Arctic Slope Doreen Lampe, Executive Director, Inupiat Community of the Arctic Slope

After an overview presentation by Pilar Thomas, the following discussion took place.

Notes	Themes
The role food security and sustainability should be involved in this plan.	Food security/ Agriculture
International laws to protect natural resources as the sea becomes ice free, mainly marine traffic affecting marine subsistence. Currently there is no law to protect local residents of high Arctic on subsistence. There is lots of development already, but there has been no impact study of this development on the people of the North Slope.	Coordination Economic development Subsistence
228 vessels went through the Northwest Passage last summer and there has already been a Russian warship close to here. While studies and development have been happening around the Arctic, the people are the only ones that have been missed. He asked about the types of coordination and communication capabilities DOE has across the region, and emphasized that all the entities need to communicate on this plan. Comments seem that they are never acted upon.	Coordination
The problem in Alaska that the state government doesn't recognize tribal entities but they are recognized by the federal government. This prevents tribal entities from working with the state.	State support
Another issue on the North Slope is the lack of qualification for subsidy, because the Borough provides an energy subsidy on consumer cost of energy.	Funding Public/private

There is a need for policy change here, so that consumers are able to access electricity and so the North Slope Borough is able to compete. A second challenge is that the Borough is the provider of energy, so in the public-private partnership, entities would be partnering with the Borough.	partnerships
The true production cost should be identified in the regional plan.	Cost
Diesel is not cheap and it is the fuel that all the villages are relying on for heat. Lower cost of heat would be a major benefit to villages. A barrier to wind power is the Borough ordinances.	Data: Heat Wind Regulations/ Resource access
The cost to do things on the North Slope is high. The Borough will have to add 2/3 of funding to AEA to see if there is a possibility that a project will work. Federal programs generally don't take into account high cost for development in the Arctic.	Cost
The Cold Climate Housing Research Center house that worked in Anaktuvuk Pass.	Best practices
There is a need to integrate policies of building standards. There is work being done with ICAS (Inupiat Community of the Arctic Slope) in Anaktuvuk Pass for a local plan.	Housing and building standards
Tagiugmiullu Nunamiullu Housing Authority (TNHA) could work with tribes to put in more of these houses.	Energy leaders
Solar panels are a hard sell up here.	Solar
Most villages have certain concerns and dreams of renewable energy, but they want to see funding.	Funding
There needs to be a change in policy from the tribal level. There was methane-hydrate development happening in Wainwright by DOE, but then they pulled out all of a sudden. The Borough often has to come up with money because the federal government abandons a project. The Borough and villages can't maintain basic infrastructure because of lack of expertise, so they end up flying people up for operations and maintenance. The Borough has built infrastructure to the best standards but then it can't be maintained. Dust and air pollutants are also an issue.	Innovative technology/ R&D Coordination Basic infrastructure
Research and development needs to happen for appropriate technology for the Arctic. Workforce development for operations and maintenance should be integrated into funding and policy. The educational component to change human behavior hasn't been included in this discussion. There are also	Innovative technology/ R&D Training/

logistical challenges and nothing is free. If people are not taught how to manage new technologies, they'll go back to whatever they were doing before.	Workforce Education
The Borough works on energy efficiency, but maintenance is a challenge.	Energy efficiency Operations/ Maintenance
More innovative technology with methane coming out of permafrost, specifically in more emission free energy.	Innovative technology/ R&D
Another challenge is working with private investment because the people here are skeptical of outsiders coming in to develop/invest money. There would need to be a panel to review groups/individuals who want to invest.	Funding Public/private partnerships
Biomass is not a simple switch. Challenges are greater for a smaller community, including dealing with land ownership, etc.	Biomass
Point Lay has access to coal, but developing that resource is not feasible at this time.	Innovative technology/ R&D
Studies and pilot projects should be part of the plan.	Programs
Lots of studies were done in the 1980s.	Innovative technology/ R&D
What development realistically and holistically makes sense in each location? Impartial energy reviews should be done for each village for feasibility.	
Significant natural gas is available, but the Borough can't access it due to subsurface rights belonging to the state.	Natural Gas
The oil resources in the North Slope Borough are completely different from other regions. Energy affects everything, and the plan needs to benefit everyone and work together.	Energy planning
The regional energy plans will show differences and similarities between sub-regions.	Energy planning
The DOE representative was invited to the ICAS government to government monthly meeting on Dec 11.	
It is frustrating that the North Slope Borough is purposely excluded from state grant programs. Money from North Slope Borough resources is pulled out of the region and not given back.	Funding
My concern is with food security and impacts to coastal residents. Interest	

was expressed in studies on how Arctic people are being impacted, and the North Slope Borough coastal management plan should be started again. This presentation should be given to the North Slope Borough assembly which needs to change an ordinance.	Food security/ Agriculture Coastal communities Energy planning

Stakeholder Outreach – Bethel

November 14, 2014 – 10:00 a.m. to 12:00 p.m. – Association of Village Council Presidents Regional Housing Authority (AVCP RHA)

DOE Participants

Givey Kochanowski was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Denali Daniels, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Senator Lyman Hoffman, Alaska State Legislature Representative Bob Herron, Alaska State Legislature Ron Hoffman, AVCP Regional Housing Authority Allan Joseph, AVCP Regional Housing Authority	Tiffany Zulkowsky, Executive Director, Nuvista Corporation George Guy, Manager of Kwethluk, Inc. Mark Charlie, AVCP Regional Housing Authority

After an overview presentation by Givey Kochanowski, the following discussion took place.

Notes	Themes
The Alaska Arctic Policy Commission provided input to the National Strategy for the Arctic Region, and outlined their gaps to the federal government. There is a high cost of infrastructure in the Arctic and a need for workforce development and access to affordable energy. The state should share revenue based on resource development. The NSAR effort needs to be spread out across all federal agencies and it needs to start with the grassroots, and work with state. The state is going to take an aggressive position on this policy, which is in our best interest. Appreciation for this opportunity was given, and the DOE efforts will be brought up at the next AAPC.	State support Coordination
There is a knowledge of the increase in reserves in the seas and those resources should be utilized. All Alaskans benefit from Trans Alaska Pipeline System (TAPS), and all Alaskans get energy. Working on negotiations for 30% of all LNG revenues to benefit rural Alaska, and offshore reserves should do the same thing. Federal government needs more involvement in infrastructure development in Alaska. Once the gas starts flowing, LNG reserves could be as much as $2 billion. There should be a plan to determine how to get the energy to rural communities once the gas starts flowing. Parks, reserves, wildlife ranges prevent development of local/regional energy source, access, energy corridors. There should be federal matching funds if the state invests. There is a proposed transmission line from Crooked Creek to Bethel, but crossing the national wildlife refuge lands is a major barrier. The revenue source and fuel has been identified. What will need to happen	Funding Natural Gas Regulations/ Resource access Regulations/ Resource access Coordination Energy planning Energy efficiency

between now and when this gas gets to market in 15 years. Energy efficiency needs to increase if we want to reduce energy costs. There is no federal funding for energy efficiency, but the state has invested significantly. AEA and DOE should have a formal memorandum of understanding (MOU).	Cost
A share of the LNG royalty will need to go to rural Alaska and Alaska Natives. Shine a spotlight on this provision. The federal government should do something to enhance this and become our cheerleader for this.	Funding Natural Gas
The region plans to weatherize all homes in the next 10 years.	Energy efficiency
Private stakeholders don't have a say, and they're the last entities to receive funding from the state or federal government for infrastructure projects. If DOE can bypass the state and go directly to independent power generator producers, they would create greater community impact. The state of Alaska will take a big chunk of the funding if federal funds are first given to the state to distribute. Distribution lines, diesel fuel, and rural areas are being forgotten. When power goes down in rural Alaska, the state doesn't help out, but if urban areas lost power, they would get help immediately. Barriers exist in over regulation, licenses, and high cost of energy. These barriers need to be removed to explore renewable energy and 21st century infrastructure. This boils down to community leader's power. Energy efficient generators, distribution lines, and technology is available but people are still struggling. The rural communities have to choose between heat/fuel and groceries. If the power goes down and the whole community goes down, it is a scary scenario if the people need medications, food spoils, and there are no communications.	Independent Power Producers Funding Basic infrastructure/ Hybrid systems Emergency response
There is a need to start utilizing renewable energy resources and combine renewable energy with current generators, to look to the future.	Basic infrastructure/ Hybrid systems
What entity will start implementing reduced energy costs in western Alaska and will Senator Murkowski help with this.	Federal support
What are people saying will be the next national imperative in the Arctic?	
Need better answers on how to coordinate with Russia.	International relations
I will formulate a response and provide recommendations with the Nuvista board. Appreciation for coming out to the region for this conversation was expressed, and encourage involvement of the smaller communities as well. Rural Alaska has been left out of energy opportunities. Housing standards over time have improved significantly, and the region's new homes are 6 Star rated. There is an opportunity to explore and incorporate regional energy plans that are being created, and explore the cost of transportation, which is related to the high cost of energy - 50%	Local control Housing and building standards Energy planning 8(a) options

of material cost is transportation. Majority of homes in the region rely on fossil fuel. The region needs a 5 year, not 10 year, plan, to include relocation to urban areas. Recommendation to look at 8A services, provide employment opportunities to shareholders. Our reliance on gasoline is critical for subsistence activity. Another recommendation would be to develop refineries in Alaska, not ship it down to California just to ship it back. Statewide generation system has to be explored, not just generation in villages. There should be a regional, if not statewide, energy system to benefit rural and urban areas.	Training/ Workforce Refinery in Alaska Statewide generation system
Weatherization dollars come from the state. The region has weatherized 8-9 thousand units. We develop new housing and provide other housing services that must meet the state standards.	Housing and building standards Energy efficiency
The stakeholder meeting kickoff for the regional energy plan will be in December. Barriers that were brought up include access to capital. The state of Alaska has partnered with regional entities for infrastructure development, but there is not an avenue through federal funds for flexible capital, no agency that we can turn to, to build a project. How much of the DOE funds can go to building projects in rural Alaska? The majority of USDA funding goes to lending, this is a barrier in the way the programs are developed. Community leaders can't utilize USDA funding because of hoops. Where could funding be channeled so that Alaska can share in revenue funding? Federal programs don't make sense for rural Alaska.	Energy planning Funding
The number one major barrier to economic and regional development is capital intensity. Federal government has so many fronts they are working on and Alaska is a small one.	Coordination
Senator Murkowski needs to get revenue sharing for Alaska, so that the state is treated equal. Federal royalties from Alaska resources should fund infrastructure in the state. Get the cost of oil down – maybe by adding a refinery here. The region and state needs affordable energy, and the current infrastructure gives no insurance that costs will be low. Look into the Shell drills that were capped in 1980s, other things that are available, such as natural gas if it's out here.	Funding Refinery in Alaska
Efficiency might be only option in some communities. The region is also looking at interties and micro-grids. How will this plan account for continued lack of federal funding? What other programs can we put in place to help communities?	Energy Efficiency Interties Micro grids
Who should be invited to the public-private partnership meetings?	Public/private partnerships
Who are future potential consumers of energy?	
They couldn't get a buyer for renewable energy when we had a tax credit project. Companies need to be interested for a tax credit to work. An option could be to	Tax incentives

give preference to rural Alaska and make it as high as 80-90%. Give the regional corporation a tax break if they give money for energy development. We aren't seeing the benefits of these structures.	Programs Funding
Partnerships aren't economically viable due to economics of scale. There needs to be a federal government subsidy. Are your recommendations going to be consolidated as all of Alaska or by region? The other energy source can come from the Northwest Passage for Arctic communities. That energy will be right at our doorstep, and we need to make sure we're able to access this. There should be tax incentives for international shippers to stop in Alaska and not Russia.	Scale Coordination
Engage the funding model from the Denali Commission and Cold Climate Housing Research Center (CCHRC). There is a threshold where grants are no longer appetizing and also a level of interest in investing at the community level. Feasible options to borrow or have matching funds should be explored. Heat costs are breaking the backs of people in rural Alaska, but conversations about solutions aren't happening at retail level.	Federal support Innovative technology/ R&D Cost Economic development
Representative Liz Vazquez and other legislators need a formal presentation on this effort. As individuals they could provide comments before Dec 12. The genesis of Porcupine, Yukon, Kuskokwim (PYK) boundary came from President Eisenhower when Alaska was becoming a state.	State support
It is $2/gallon gas in Toksook Bay.	Cost
Is there a connection to fisheries in the implementation plan? We are over-studied people. I can give National Oceanic and Atmospheric Administration (NOAA) feedback on fisheries.	Coordination
Grants don't work for rural Alaska. Windmills weren't approved, so the community is trying for solar now. There is a strong correlation between public and private funding, and a need for both.	Public/private partnerships Funding

Stakeholder Outreach – Unalaska

November 17, 2014 – 10:00 a.m. to 12:00 p.m. – Unalaska Public Library

DOE Participants

Givey Kochanowski was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Holly Spoth-Torres, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Jamie Sunderland, City of Unalaska Emergency Manager and Director of Public Safety Melissa Good, UAF Campus Coordinator

After an overview presentation by Givey Kochanowski, the following discussion took place.

Notes	Themes
There is a history here with geothermal and wind. The city just did a big energy audit. The city owns its own utilities and tribal entities don't have a stake except as consumers. There is a small native population here, native for-profit is the major landholder so development can't happen without them outside of city limits. The city has commissioned wind studies over the years, with the last 5 years ago. A few locals have built wind turbines but they haven't lasted, because the change in direction and velocity of the wind is damaging, so city has chosen not to invest. There is a needs for more research on this issue. This community can't get away from diesel, but there is a potential to offset diesel costs with renewables. Unalaska built a $40 million power plant 5 years ago, including 2 Wartsilla generators and 1 Cat generator. There are air quality issues with the plant, which makes permitting tough: EPA standards are a barrier. There is potential to absorb additional seafood plants into load. It would not be simple to manage the large load with wind power, and there would need to be a number of windmills here to absorb entire load. There are permanent consultants who manage data on loads and use here. There is an incentive for the city council to work on wind and geothermal. The last estimate for developing geothermal from the volcano was $180 million, not including permitting or land ownership issue (the transmission line would cross multiple ownerships), which is too high. Unalaska has invested in major undertakings in recent developments of power plants and boat harbor. Akutan harbor, which is not connected to the town, is an example of poor planning by the	Geothermal Wind Energy efficiency Utilities Coordination Regulations/ Resource access Wind Innovative technology/ R&D Basic infrastructure/ Hybrid systems Regulations/ Resource access Economic development Tax incentives Wind Geothermal Cost Interties

federal government. Improving this harbor could be a goal. Unalaska would like a longer term Coast Guard base (currently the Coast Guard only serves 12 months here, about 8 people, with a couple visits a month). Most federal offices have dropped off since 9/11. Also used to have National Marine Fisheries Management Service (NMFMS), the border protection is now just customs, and no Federal Aviation Administration (FAA) or National Weather Service here. The City is heavily involved in Arctic shipping. City manager sits on the State Arctic policy commission. The city looking into LNG prospects rather than renewables due to lower cost and the compatibility with the existing diesel system. Infrastructure such as storage and transition for Wartsilla generators from diesels to LNG is already in place. More diesel is sold here than any other place in the state due to shipping.	Regulations/ Resource access Military presence Coordination Natural Gas
A small hydro generator is in operation that dams the city's water supply. Unisea uses fish oil to power a significant portion of their processing plant. At a city government level, renewable and recyclable is important because the public wants this, but the cost is extremely high. The city pays $500,000/year to ship metal recycling out. Unalaska is an economic powerhouse in the state due to fisheries and sales tax, but there are still many issues. Some effort has been put into waste to energy, and the dump has an incinerator. Heat recovery has been installed on the newest power plant, a big success.	Hydro Innovative technology/ R&D Cost Waste energy
The Environmental Protection Agency (EPA) is a major barrier for the city government right now, due to the recent failed wastewater treatment standards. There are different standards for cities and businesses, and Unalaska is required to build new $20 million wastewater plant for secondary treatment to go online next year due to lost lawsuit with the EPA. The City just completed a new storage tank that cost $3 million. Westward (fish processing plant) paid a $700,000 fine for EPA air quality standards, and missed tier 2 for hazardous materials storage. Unalaska has been number 1 for many years statewide for spills, specifically ammonia, but ammonia dissipates quickly due to the weather here. Currently in negotiation for how much power the city will supply Westward. Emissions are always a concern with new generators, and the standard is related to delivery date. Upgrading a generator without cleaner fuel available is a major barrier. Federal standards constantly change, making it hard to stay in compliance.	Regulations/ Resource access Emergency response Economic development Deep water port Public/private partnerships
Since Unalaska is the last deep water port, Shell and other companies have a great interest in using the port for development going on in the Chukchi. Major infrastructure and workforce development would have to be put in place to support this work. Local landowners who own flat land, gravel, etc., are looking at developing with Shell.	Economic development Regulations/ Resource access
Housing is major issue for town.	Housing and building standards
Currently there is a giant project installing a bigger Cat engine for higher peak capacity, to run more efficiently with larger customers on line. The shipping elevators cause some power issues in town because of their massive changing load. There are 3 different rates for electricity: residential (cheapest), commercial, 'mega'-commercial. Cost-causer is cost-payer. There is incentive here to use less	Capacity/ Technical assistance

diesel here. Fuel delivery scares have occurred, related to weather forcing the barge to be delayed or rerouted. Nikolski was running out of fuel a couple of years ago. The city occasionally hits capacity with fresh water. There are 600 million tons of fish leaving this town, and the industries are so powerful and well represented. What about workforce development? Is there an interest to build another training facility in the Arctic? If so, partnering with university makes sense. I recommend bringing journeyman training to Unalaska. They could receive lots of experience here. Is there potential to build a training center here? What is the output on Kotzebue's wind? Unalaska is already available as a deep water port, with capacity to take on more. The city can handle support to deal with traffic coming through the Bering Strait. Develop more safety measures to deal with increased traffic, especially for vessels in distress, including an emergency tow system. 2 shipwrecks in the last 20 years. Poor satellite-based internet connection is a barrier to development (some days the internet is too slow to open email). Are fiber optics coming? Some residents pay $200/month for bad internet. Follow up with Dan Winters from Public Utilities for more details and information.	Emergency response Innovative technology/ R&D Cost Training/ Workforce Training/ Workforce Deep water port Emergency response Basic infrastructure/ Hybrid systems Utilities

Tribal Consultation – Unalaska

November 17, 2014 – 1:30 to 3:30 p.m. – Unalaska Public Library

DOE Participants

Givey Kochanowski was present on behalf of the Department of Energy, Office of Indian Energy. DOE Contractors, Denali Daniels & Associates (DDA) present were Holly Spoth-Torres, Kathy Mayo, and Chelsea Ward-Waller.

Participants

Thomas Robinson, Tribal President, Qawalangin Tribe of Unalaska Doanh Thi Tran, Environmental Coordinator, Qawalangin Tribe of Unalaska Robin Waldron, Tribal Administrator, Qawalangin Tribe of Unalaska	Rick Miller, CEO, Ounalashka Corporation Patrick Baker, representative for the Aleut Community of St. Paul Island

After an overview presentation by Givey Kochanowski, the following discussion took place.

Notes	Themes
Need for improved oil spill response and GIS of subsistence, migratory birds. A panel should be created, including an indigenous voice. The Tribe is tasking the environmental department for the first time and looking to stand in self-governance now. They have been approached to do oil rig support, looking at deep water horizon. The city has roughly 8-10 burn piles for pallets, and there is interest in seeing the pallets utilized for pellet stoves. The community receives 3-5 container ships per month and goes through 15-25 thousand pallets per year. This development would be a good option for the tribe. Nikita Robinson works at Alaska Energy Authority (AEA), under Sandra Moller. Have you met with Aleutian Pribilof Islands Association (APIA)? As a tribal entity we want to take responsibility for the opportunity that exists in our community by getting 630-8A status. The Coastal Zone management program has been dissolved here. Does the federal program have any jurisdiction here? Wind, geothermal, and tidal development is needed. Affordable energy is needed to grow the community. Unalaska is at a strategic location. The state is not doing enough to promote/develop LNG. Utilizing the LNG could bring down the price of energy. How do we involved the state and get that here? Residents pay for the appetite of industry here. Suggestion for a Coast Guard base and Naval base here. A free trade zone should be created, like Anchorage airport. The city has done the most renewable energy analysis in this community,	Emergency response Innovative technology/ R&D Subsistence Biomass Coordination 8(a) options Coastal communities Wind Geothermal Tidal Military presence Economic development

including resources such as wind. Studies that were done indicate inconsistency with turbidity with wind. Geothermal testing might present an opportunity, but it comes at a huge price tag. There has been work done on geothermal exploration. Money is always a barrier, so we can't talk about no barriers. Pallets are wasted resource here, and there is also waste oil. The waste oil or used motor oil could be burned in an environmentally friendly manner or used as accelerant. We are looking at the pilot project in Old Harbor for biomass and exploring pellets. Getting started is the big challenge. There is significant fiber discarded by canneries. There should be a study on re-initiating the recycle program. Can this be mulched, mixed in and then find incinerator? Explore waste energy. The current community landfill has an estimated 20 year lifespan. An investigation should look at any way to convert this to energy use/production. Shell hauled their waste from Chukchi developments back to Seattle. A business opportunity could be to work with industry and find a way to use waste in a friendly manner. Is there a mechanism that would be able to utilize plastics in environmentally-friendly way for waste energy? Unalga Pass should be used for tidal, directly accessible to Unalaska. U.S. Fish and Wildlife Service (USFWS) would be a barrier in terms of land access for tidal and also a barrier for take permits with wind development. Unalga would supersede False Pass's tidal and be a great deep water port. The Aleutian Islands are all part of a wildlife refuge with small exceptions. Makuchin Volcano geothermal site is isolated, with a land access issue. The city utility focus is on Liquefied Natural Gas (LNG). There is an interest to have LNG pilot program, currently working with containerized LNG. The individual processing plants create some of their own power by integrating fish oil. The city sees geothermal as a high bar in terms of the money and location. There must be infrastructure in the Arctic to assist in emergencies. Unalaska could be in a better spot based on our position in the Arctic. We are a key element to success of oil spill response and storage, and offer facilities needed and can utilize this location and deep water port. China has been to Unalaska twice and they are willing to invest a high dollar amount. Unalaska is in a park, with not a whole lot that can be done. We would like to see	Wind Innovative technology/ R&D Geothermal Cost Innovative technology/ R&D Biomass Programs Innovative technology/ R&D Innovative technology/ R&D Waste energy Innovative technology/ R&D Tidal Regulations/ Resource access Geothermal Natural Gas Innovative technology/ R&D Emergency response International relations Funding

military, Coast Guard presence here, and develop geothermal resources. What are the EPA's guidelines around LNG emissions? There is also a coal issue, with a lot to learn from China. Would coal, geothermal, or LNG cost less? The Navy pulled away from at Adak, and there is a need to explore security for the Arctic in Dutch Harbor, homeland security. He brought up an example of bringing in injured Chinese shipper to Dutch Harbor for treatment with no questions asked by the Coast Guard.	Regulations/ Resource access Cost Military presence Emergency response Natural Gas
Is there a community energy plan in Unalaska?	Energy planning
The city has a comprehensive plan, but it includes many components where energy is not high priority.	Energy planning
From the Native perspective, you must determine your ask. In St. Paul, the corporation and the tribe lean toward renewable, clean energy. Working with state, there are funds available to help organize, assist vision from your perspective. Our strategy has a number of tracks, including a community track that is long term. From the tribe perspective, we can help with planning and understanding, take action on facilities and energy efficiency. We don't have control to change the rate, but we can change the consumption. The corporation has been more active in developing wind. If you team up with the corporation you could get more for real estate. There is an opportunity to influence other entities, such as the fish plants. Education first and then you make the plan and vision. Initially there were more contractors, balance between training. Ampy Electric Meters that read the consumption helped reduce energy use by 15-20% per household per month.	Energy planning Energy efficiency Coordination Training/ Workforce Wind
Deploying multiple applications (tidal, wind, hydro, geothermal), with more federal data on the local wind potential. Need for an assessment of the hydro-electric potential to deliver energy on this island. Atka's small wind can be used as an example.	Basic infrastructure/ Hybrid systems Innovative technology/ R&D Wind Best practices
Grid deflection issues are an unintended consequence of renewables, the load has to come off before we can see savings. Cheap energy would make fishing more viable and allow for cheaper tariffs.	Utilities
I'm surprised there isn't more of a national effort to expand hydrogen. I have to haul wastewater into the closest mixing zone. Akutan has a fishmeal plant. If we can figure out how to burn waste oil, combined with pallets and steam, could all be factored into grid. The corporation and tribe will be able to broaden horizons when we get our 630-8(a) status. Tier 4 is not necessarily better, because older	Innovative technology/ R&D 8(a) option Regulations/

generators are easier to maintain. Could there be an exemption on the Arctic for EPA?	Resource access
When is the data expected to be published?	Process
We will respond as a council. Tide doesn't get low anymore. We would like to continue working closely with the corporation on projects as they arise.	Process

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