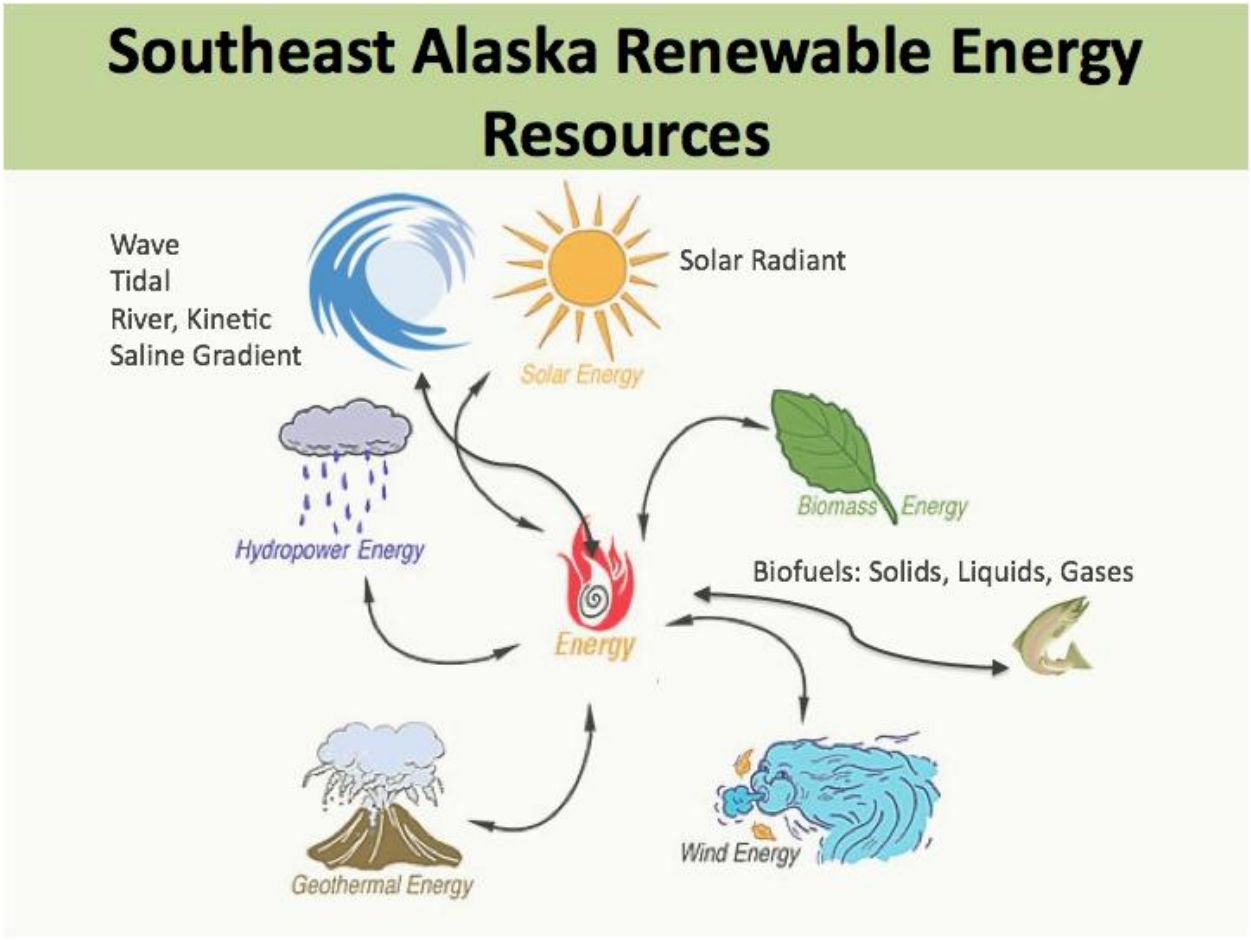
Southeast Alaska Renewable Energy Seed Cluster



Renewable Energy Seed Cluster Strategy Development Process

The Southeast Alaska Renewable Energy Seed Cluster Working Group (CWG) was organized to determine the conditions under which the Southeast Alaska renewable energy industry could develop, adding more jobs, wealth and prosperity in the region. Unlike the Ocean Products and Visitor Products cluster, which are "mature", renewable energy in the region is a less developed "seed cluster", that is it lags behind other regional industries in terms of employment concentration; however, it has potential to grow and flourish beyond its current form.

Because Renewable Energy does not have an established industry presence in the region, a first meeting of private sector entrepreneurs, public sector agencies, economic development organizations and consultants was convened to gage interest in participating in the formal Cluster Working Group process. It needs to be stressed that the renewable energy cluster approach is not focused exclusively on providing affordable energy to regional communities, but also on supporting the development of a renewable energy industry. The next step was formation of a steering committee to prepare for subsequent CWG

meetings. At the conclusion of a second group meeting, action initiatives were chosen for developing into actions plans in preparation for a third meeting. JEDC has committed to providing one more facilitated large group meeting for the Renewable Energy Seed Cluster Working Group.

A full roster of the Working Group membership is below:

*Southeast Alaska Renewable Energy Seed Cluster Working Group Membership**

Name	Affiliation	Position
Bryan Farrell	AEL&P	Engineer
John Sandor	AK/Can Energy (Self)	Former Commissioner
Brandon Smith	Alaska Brewing	Plant Engineer
Paul Southland	Alaska Canada Energy Coalition	Special Projects Director
Kirk Hardcastle	Alaska Center for Energy and Power	Research Technician
Bart Watson	Armstrong-Keta, Inc	President
Jackie Stewart	Business Works	Entrepreneur
John Hickey	Coast Guard	Commanding Officer of Shore Maintenance Command, Seattle
Ross Good	Elcon Corp	Renewable Energy Project Development
Heather Hardcastle	Fisherman's Daughter Biofuels	Entrepreneur
Nathan Soboleff	Ha'ani/Sealaska	Natural Resource Planner
Ben Haight	Haight & Associates	Principal Electrical Engineer
Duff Mitchell	Juneau Hydropower, Inc.	Business Manager
Peter Naoroz	Kootznoowoo	CEO
Lew Madden	Ma-Su owners representative	Entrepreneur
Brian Hirsch	National Renewable Energy Laboratory	Senior Project Leader-Alaska
Dan Lesh	SEACC	Energy Coordinator
Rob Holman	Self	
Robert Venables	Southeast Conference	Energy Coordinator
Zach Wilkinson	SpringBoard	Technology Transfer Associate

**Attended one or more meetings*

Name	Affiliation	Position
Bill Leighty	The Leighty Foundation/Alaska Applied Sciences, Inc	Consultant/Investor
Bob Deering	USCG	Environmental & Energy Branch Chief
Barbara Stanley	USDA Forest Service	Energy Coordinator
Jon Martin	USDA Forest Service	Tongass Transition Framework Coordinator
Larry Miles	Wind Turbine Company	Co-founder

Renewable Energy Foundations

Why are we looking at Southeast Alaska renewable energy as an industry?

"*clean, local and inexhaustible,*" – definition of Renewable Energy as defined by the CWG

Southeast Alaska has historically been hamstrung economically by the high costs of energy, transportation and labor in this relatively isolated region. However, Southeast is endowed with a bounty of renewable energy resources: hydro, wind, geothermal, wave, tidal, river kinetic, radiant solar, ocean thermal, osmotic, biomass and biodiesel. As fossil fuel prices rise based on increasing demand exceeding limited supply, and as oil price spikes occur due to political instability, fear, speculation, and political crises, Southeast AK will have an inherent competitive advantage by being able to provide hydroelectric energy at stable and relatively low prices. The development of a local renewable energy industry beyond, aside from, and synergistic with large hydroelectricity, would build on the region's natural resource assets and turn its traditional competitive handicap of high energy prices into a competitive advantage.

This is also an industry that could especially benefit rural communities, where unemployment rates remain high with the fading of the timber industry and decreases in government spending. Southeast is currently suffering net population losses, partly due to the high cost of energy in small communities that depend on diesel-fueled electricity and on gasoline and diesel for transportation. Not only would the development of renewable-energy generated electricity help with living and manufacturing costs, but also many of the rural communities are located close to attractive Renewable Energy resources. Putting these resources into production would create planning, construction and maintenance jobs. The skills gained in those projects would tend to spin off in the form of new businesses to market Renewable Energy development to the other areas of the world, those with similar isolation from major power grids or similar affordable Renewable Energy resources to develop.

Many assets critical to an emerging industry are abundant, such as a willing workforce, community support, existing infrastructure, zoned "industrial" sites, deep water ports near many communities, and the legacy of heavy equipment from former industries.

Ultimately, SE Alaska has a unique potential to shift to a 100% Renewable Energy economy, and at the same time build a Renewable Energy industry based on that affordable energy and the skills, technologies

and enterprises developed in building out that capacity. This economic shift could help define a new self-identity for the region, a pride in being at the cutting edge of new sustainable energy technologies to export to the rest of the world, and a confidence that a contribution is being made to better the world.

Working Group Leadership and Meetings

The full working group met twice with additional meetings of a smaller steering group. During the course of these meetings, the participants worked collaboratively and reached consensus on various areas, including the vision, definitions related to Renewable Energy, Purpose of the CWG, meeting objectives and expectations, and finally, the nine draft action initiatives.

The vision is for a Renewable Energy Industry to exist in Southeast Alaska in 2020. Renewable Energy is defined as, "clean, local and inexhaustible," though members of the group pointed out that the renewable sources being talked about are not necessarily local (hydro connected to intertie), not inexhaustible (wood pellets), and not always clean (burning wood, fish waste). The definition of a Renewable Energy Industry in Southeast Alaska is, "a set of firms that meets markets needs for energy and energy services within and outside of Southeast Alaska," which excludes large-scale hydro.

The purpose of the Seed Cluster Working Group is, "to outline a plan that will provide the foundation for a renewable energy industry in our region." The objectives of the first meeting were to introduce participants to the Southeast Cluster Development Initiative, identify critical issues and brainstorm a list of industry challenges to address, which can be found in a separate list below. Furthermore, the objectives of the second meeting of the working group were to identify potential action initiatives that address gaps in the foundation for a renewable energy industry in Southeast Alaska and to suggest potential demonstration projects that would best support this industry.

Through facilitated group exercises, participants were also asked to share their expectations and/or objectives for the second meeting, discuss opportunities for the renewable energy industry in Alaska in terms of business and profit potential, and finally, identify the most critical obstacles for this industry's development in the region.

Expectations of the second meeting ranged from very general ideas to specific issues. The overarching themes were to have a space for dialogue on solutions related to renewable energy, learn from the multi-stakeholder process, provide expertise and input, address social injustices in Alaska, be involved in a network and get to know the key players, think outside the box, identify items not on the radar, create jobs in the renewable energy sector, share knowledge/lack of, understand how to move forward with the current resources in the region, visualize sustainable energy as the new economic engine for Alaska without compromising quality of life, and help people in our communities.

On the other hand, the more specific expectations for the meeting dealt with issues like converting fish waste to biofuel, how different companies already involved in Renewable Energy projects (ie; Alaska Brewing) can contribute to as well as benefit from the cluster process, showcase SE Alaska as an example to the rest of the state, better utilization of the Tongass for renewable resources (ie; sawmill waste to pellets),

interest in developing a transmission line to bring stranded energy to lower 48, bring renewable resources to market, energy efficiency issues, applying for grants, asking industry what they need to further develop, and including projects related to hydro/wind/biomass.

The opportunities, obstacles and discussion projects' summaries that took place at the second meeting are listed in separate sections below.

By the close of the second CWG meeting the group had identified nine action initiatives that addressed themes emerging from the Cluster discussions, and elected Champions that would lead the development and follow through of each initiative.

The group agreed that future meetings and/or the Steering Committee should include more leadership from the university community. In addition, it's important to recognize the pioneering and valuable work of the Renewable Energy Alaska Project (REAP), UAF's Alaska Center for Energy and Power (ACEP), and the potential of projects funded by the Emerging Energy Technology Fund (EETF), and collaborate with them in "new partnerships."

Renewable Energy Industry Challenges, Opportunities and Obstacles

Challenges

"We need the courage and conviction to take advantage of Southeast's obvious and abundant Renewable Energy resources- tidal, wave, wind, geothermal, solar, ocean thermal, osmotic, biomass - Southeast Alaska can become a model, a leading industry outside of this region."

At the first seed cluster working group meeting the following industry challenges were discussed:

- Currently importing Renewable Energy expertise and equipment from outside Southeast Alaska.
- Improve economic foundations of the region to build up the industry.
- Potential of the renewable energy industry to become an economic engine in Southeast Alaska.
- Manufacturing potential in Southeast Alaska.
- Research and Development – R&D, and demonstration sites.
- Solving the transmission and firming storage problems of bringing Renewable Energy from their large, stranded components to distant markets as firm and dispatchable energy at competitive prices.
- Identify the starting point for a more robust energy industry. In order to accelerate it, it has to exist.
- Potential for developing renewable energy firms in the region that could export their skills, expertise, and electricity or "electrofuels" at competitive prices, to outside of Southeast Alaska.
- Conditions to foster increased industry development.

Opportunities

"We are looking ahead to the next economy of the region. While renewable energy is not one of the region's driving engines, we see faint signals for a renewable energy industry other than large-scale hydro in Southeast Alaska for the future."

At the first seed cluster working group meeting the following industry opportunities were discussed:

- Communities as a test bed - take communities with higher energy prices and use those communities as a test bed for new/emerging technologies. Develop unique, decentralized Renewable Energy solutions for individual communities.
- Develop and leverage forest resources as renewable energy resources – work on developing process on Federal lands (FSC) that can be sustainably managed. Use scrap material as a high installation value, densified wood products (pellets) for space heating and woody biomass resources to create jobs.
- Advanced Education Level – Southeast Alaska has one of the highest educated workforces in the United States with professional engineers and economists that could be used as modelers.
- Use of Diesel – convert and promote the conversion of current diesel use to lower-cost electricity to create market demand.
- Abundance of renewable resources – the region has vast natural energy resources like biofuels, fish waste, hydraulics, pyrolysis (burned wood turns into a liquid).
- Hub for research and development – SE Alaska could become a hub for R&D for one or more technologies (i.e., tidal power, wet/dry biomass, etc). There are world class labs at the federal, state and university levels (and should still be further engaged in this process), which could be used to promote and attract more research and development as well as bring in private industry and capital.
- Starting from scratch – the opportunity exists for the region to develop its own renewable energy industry with limited obstacles because there isn't an industry and nothing has to be torn down to start over again. Wind-hydro, HV DC Transmission, Wave Energy Conversation, Marine Hydro-Kinetics and a "Smart Grid" all have the potential to be developed.
- Focus on the market – develop local electric transportation and support legal changes to enable more private industry.
- NH3 Production – anhydrous ammonia production could be exported and used as a transportation fuel from renewable energy produced electricity. It is also a potential way to address the fundamental issues of capturing and transporting the stranded renewable energy produced in remote sites to markets, and for storing the energy from periods of high output to periods of peak demand.

- High cost of imported energy – the high costs of current imported energy in the region represent an economic opportunity to capitalize on money already being spent, as well as a reason to develop new technologies (creates an environment for testing otherwise non-viable technologies).
- Technical resources – there is an opportunity to develop the region's technical resources and know-how. When Juneau was founded it was THE world expert in mining technology and hydro and exported its technology internationally. This could be done again for the renewable energy industry.
- Hydro sites – there are currently 27 hydro projects under consideration by the Forest Service (as well as some geothermal) and therefore additional hydro sites with long distance DC transmission could be developed.
- Recognized need – the population knows how important energy is to the region (and how expensive it is too).
- Waste-to-energy resources – find and develop waste-to energy resources in the Southeast Alaska region.
- District heating – making use of thermal energy from non-fossil fuel sources.

Obstacles

At the first seed cluster working group meeting the following industry obstacles were discussed:

- Public policy deficiencies
- Permitting – can be expensive and time consuming
- Underperforming building environment (inefficient buildings and homes)
- Underdeveloped technologies to produce and store energy
- High transportation cost for fuels – which adds onto project costs
- Lack of energy transport infrastructure
- Competition from low-cost, imported natural gas via "AK Interstate Gas"
- Stranded resources and markets: "transmission costs"
- Lack of RPS (Renewable Portfolio Standard) to push us beyond the easy and obvious. The RPS requires that a certain percentage of resources come from renewable energy
- Culture and Myth: entitlement, last frontier attitude
- Lack of awareness (about viable RE alternatives to the energy problem) in most citizens
- Small businesses have trouble entering market because of large capital costs, economic barriers to entry

- Failure to adequately engage University of Alaska Southeast (UAS) and City & Borough of Juneau (CBJ)
- Financing difficulties for small RE businesses: high initial capital costs, despite low or free fuel costs
- Policy: limitations to market energy at fair value – net metering concept, feed-in tariffs and independent power producer guidelines
- Financing
- Lack of private land in Southeast Alaska, land use and rights
- Developing sufficient market demand for renewable energy to both support fledgling energy industries as well as enable conversion of existing energy use from non-renewable sources.
- Imagination and motivation ("when the pain of not doing it becomes greater than the pain of doing it, we'll get it done!)
- Tendency to preserve status quo in use of diesel fuels
- Hesitancy to "see outside the box"(supporting fledgling UAS engineering department for example) – to continue to do things as we've always done them, which can lead to continuing import knowledge/technology and exporting our resources instead of creating an industry that remains "in-house"
- Lack of incentives – the money available to small enterprises and green entrepreneurs
- Institutional bias towards specific means of generation to accomplish goals

Demonstration Projects

The participants of the Renewable Energy Seed Cluster Working Group discussed many options for potential demonstration projects that would best support a renewable energy industry in SE Alaska, and which included the following ideas: wind, wind/hydro, wave energy conversion (ie; Yakutat) , hydro-kinetic, small hydro, NH3 for transmission storage and fuel, geothermal, marine hydro-kinetic (in prime area), run of the river hydro-kinetic and world class technology at NOAA lab. Further, the group thought it would be important to have a list of criteria for how to decide if a project is viable, and should take into account the following: capital costs of the project, technical readiness, time to readiness, scale, benefits, developing industry/market potential (Return on Investment).

Renewable Energy Draft Action Initiatives

The following pages present the draft action initiatives that are currently under development by the Working Group for inclusion in the regional strategic plan. Work on these initiatives will continue into June to review suggestions for strengthening each initiative and to discuss the final initiatives.

In addition, the group discussed many other possible ideas that were not included in the final draft action initiatives, but had the support of many participants. The following were some of the other proposed initiatives:

- Promote intergovernmental partnerships between fed/state/local governments and with Canada
- Develop a complete/searchable database of industry resources and provide access via a website
- Draft and advance legislation to promote energy efficiency and eliminate utility Renewable Energy disincentives
- Identify public/private partnership projects with model industry impact; develop prospectus for targeted projects; advance prospectus with likely public/private partners
- Document, educate and promote legislative and public understanding of short-term vs. long-term cost of energy generation models
- Draft and advance legislation proposing creation of a State of Alaska Department of Energy
- Identify models for a statewide energy plan, articulate components and advocate for adoption of a comprehensive strategy as an umbrella plan for regional and community energy strategies
- Renewable Portfolio Standard

The initiatives developed by the working group for further refinement at this time are:

1. Propose Net Metering Legislation
2. Establish a Renewable Energy Revolving Loan Fund for Residences and Small Businesses to Promote Local Installation and Fueling Industries
3. Market SE Alaska to the existing and emerging renewable energy industry as a test venue for new technologies and specifically taking advantage of our diverse, unique Renewable Energy Resources and high-cost energy markets
4. Market-driven Renewable Energy Economic Modeling for Southeast Alaska, including Multiple Transmission and Energy Storage Strategies
5. Explore Opportunities for Connecting SE Alaska Intertie to North American Grid to Improve the Economy and Quality of Life throughout the Region
6. Biomass Energy Demand Development
7. Discovering best practices from around the world to overcome barriers & what is being done to incentivize change regarding renewable energy and energy efficiency
8. Streamline Permitting and Schedule Acceleration
9. Renewable Energy Education for SE Alaska Residents, Students and Businesses

Draft Action Initiative 1: Propose Net Metering Legislation

Cluster Working Group:	Renewable Energy
Initiative Champion:	Ben Haight
Initiative Implementation Team:	Kirk Hardcastle, Heather Hardcastle, Bart Watson

Description & Motivation: The requirement for utilities to allow for "net metering", "fee tariff", and independent power production is quite limited by regulation. The regulation generally allows the utilities to limit allowances to quite small power plants with a total connection of less than 1.5 percent of the system demand. As a result, the utilities have not incorporated many renewable energy sources or combined heat & power (CHP) facilities into their systems. The incorporation of small power plants on the utility grid brings technical challenges to the utilities, challenges they have not experienced in the past. The integration may involve implementation of higher level control systems or "smart grid" type applications.
Objective: Research, understand, and define improved legislation proposed to expedite application of renewable energy and CHP resources. Better understand the technical limitations experienced by the utilities. Foster technical solutions and promote better education of both the utilities and the rate payers. Develop new legislation improving the opportunities for application of renewable energy and CHP resources.

Draft Action Initiative 1: Propose Net Metering Legislation

ACTION PLAN

Describe the specific steps/tasks.	**Key People: Who needs to be involved to accomplish step (ID business, agency, or people)**	**Resources needed to accomplish step**	**Timeline to accomplish step**
1. Review and understand current Alaska Statutes, as well as those of the other states where regulations for such have been implemented.	RCA Legislative Legal staff. Regulatory commissions from other states that have allowances for "net metering", "fee tariff", and "independent power production"	Legal support required.	12 weeks
2. Determine limitations of current regulations	RCA AEA ACEP	Legal support required.	8 weeks
3. Determine desired modifications to the legislation improving integration of renewable resources and CHP generation.	RCA REAP	Legal support required.	8 weeks
4. Develop an education program and analysis of minimum technical requirements to allow connection to the utility grid.	REAP AEA ACEP	Electrical engineers Educators	12 weeks

Draft Action Initiative 1: Propose Net Metering Legislation

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
5. Develop new legislation for regulation rehabilitation, to promote utility technical support, and to promote education.	REAP RCA Legislative Legal staff.	Legal support required.	6 weeks
6. Develop legislative champions.	Legislative Energy Committees	REAP Lobbyist	4 weeks

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
The greatest obstacle is the utilities. Many of them oppose such regulation. Continue education for both the utilities and the rate payers to provide a better understanding of issues, and to better define common grounds. Find incentives for the utilities to implement "net metering" practices and develop relationships for independent power production.	REAP can be valuable resource for education with assistance from AEA and ACEP. Work with the RCA to find incentives, as well as to refine regulations to permit more allowance for renewable energy.
Technical incompatibilities can be used as the reason to deny connections. Again, this involves education for both the utilities and the rate payers. Define and illustrate minimum practices to	AEA and ACEP can be a valuable resource. This can be supported by engineering consultants familiar with utilities.

Draft Action Initiative 1: Propose Net Metering Legislation

safely allow connection of non-utility energy sources to the utility grid.		
Funding:		
Phase:	**Budget:**	**Funding Source:**
Research existing statutes and regulation from other states		State of Alaska
Develop new legislation		State of Alaska
Education and technical support		State of Alaska
Promote new regulation through legislation		State of Alaska

Outcome/Results:

The direct result will be legislation establishing regulations and incentives making allowances to incorporate renewable energy and CHP generation. Allowances for larger plants, greater portions of the system demand including renewable plants, and CHP plants will be addressed. Additionally the fee tariffs will be better defined. Additional legislation to fund technical support and education will be implemented.

Draft Action Initiative 2: Establish a Renewable Energy Revolving Loan Fund for Residences and Small Businesses to Promote Local Installation and Fueling Industries

Cluster Working Group:	Renewable Energy
Initiative Champion:	Bart Watson
Initiative Implementation Team:	Bart Watson and Jackie Stewart

Description & Motivation:

One of the fundamental steps in moving Southeast Alaska to a renewable energy economy is for residences and small businesses to convert from fossil fuels to using renewable energy sources such as heat pumps and pellet stoves. These renewable fuels have many advantages: they can be relatively inexpensive, the supply is local and therefore more reliable, and the consumer is protected against future oil price shocks and supply disruptions. However, despite potential significant savings on fuel costs, the initial equipment installation costs can be high and create a significant impediment to adoption for most potential users. While performance contracting is widely available for large businesses, no similar financing mechanism exists for small businesses and residences. A revolving loan fund would provide a very attractive means for enabling the installation of, or conversion to, renewable energy heating systems, with the savings in utility costs being used to pay back the capital improvement loans. This revolving loan fund could be designed to assist in converting from gas to electric vehicles as well.

Besides promoting the development of a SE renewable energy industry and an energy conversion industry, this initiative would address a major issue confronting electrical utilities throughout the region. Most electric utilities have no current plans on how to cope with sudden surges in demand by consumers plugging in portable electric heaters to cope with sharp increases in oil prices. The jump in demand would inevitably exceed supply and force utilities to ration electricity to the consumers or fire up backup diesel generators to meet the load at exorbitantly high prices, since burning oil to generate electricity is much less efficient than burning the oil for heating buildings directly.

Draft Action Initiative 2: Establish a Renewable Energy Revolving Loan Fund for Residences and Small Businesses to Promote Local Installation and Fueling Industries

Objective:

Transitioning homes and businesses to renewable energy heating and transportation systems represents a major business opportunity for vendors and installers of new equipment (pellet and biofuel stoves; geothermal, water and air heat pumps; electric vehicles) and for providers of the local Renewable Energy fuels (wood pellets and other biofuels; Renewable Energy electricity from wind, small hydro, geothermal, tidal, wave, and hydrokinetic resources). These conversions would involve significant expenditures within the SE Alaska economy and could become the core of a new Renewable Energy industry in this region. A widespread transition to Renewable Energy fuels is capable of supporting many small businesses in several SE Alaska communities.

ACTION PLAN

Describe the specific steps/tasks.	**Key People: Who needs to be involved to accomplish step (ID business, agency, or people)**	**Resources needed to accomplish step**	**Timeline to accomplish step**
1. Research what specific plans other utilities, municipalities, and states have adopted for similar revolving loan funds.	REAP.	Funding for one position with REAP for one month.	I month.
2. Contact potential funders and administrators, including utilities and government agencies, to discuss concepts and structures for the revolving loan funds that would best suit local conditions and statutes.	REAP, SEC, AHFC, Dept of Commerce; local economic development organizations; Interested residents of each town.	Funding for one position with REAP for three months.	3 months.
3. Research whether enabling legislation to establish	REAP, Alaska Department of Law,	Funding for one	1 month.

Draft Action Initiative 2: Establish a Renewable Energy Revolving Loan Fund for Residences and Small Businesses to Promote Local Installation and Fueling Industries

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
appropriate revolving loan funds is required of the Alaska Legislature. If so, draft the legislation and recruit sponsors in the legislature.	AHFC, AEA.	position with REAP for one month.	
4. Formulate specific language to establish appropriate revolving loan funds at the state and/or local level.	REAP, interested residents of each town, municipal governments and utilities, REAP.	Funding for one position with REAP for one month.	1 month.
5. Seek funding from the state legislature, municipal governments, utilities and other potential sources to secure financing for the revolving loan fund(s).	REAP, municipal governments and utilities, legislators.	Funding for one position with REAP for six months.	6 months.
6. Involve public interest groups such as REAP and private special interest groups such as Sealaska along with as many of the utilities as possible to push for adoption of the legislation at the state and local levels.	REAP, Sealaska, utilities, chambers of commerce, SE Conference, et al.	Ongoing involvement of interested parties. . Utilities are a natural ally, in that they must guard against sudden increases in electricity	One year.

Draft Action Initiative 2: Establish a Renewable Energy Revolving Loan Fund for Residences and Small Businesses to Promote Local Installation and Fueling Industries

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
		consumption.	
7. Market the revolving loan fund to homeowners and small businesses to encourage high participation rates; track participation rates.	Revolving loan fund administrators.	Internal resources created by the enabling legislation.	Ongoing.

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Competition for the funding necessary to seed the revolving loan funds is likely to be the biggest obstacle. However, the state of Alaska has enormous cash reserves and income – the political will is really the only missing ingredient to bring such funds into existence. The legislature has demonstrated strong support for moving the state toward greater adoption of renewable energy and for the development of an in-state Renewable Energy industry. With a concerted push from interested parties, the establishment of a renewable energy revolving loan fund should be an achievable goal.	Recruit REAP, utilities, city assemblies, legislators. The creation and funding for 12 months of a full-time position at REAP to promote the establishment and implementation of revolving loan funds in SE Alaska communities would be invaluable. REAP has effectively taken the lead in promoting Southcentral and Western Alaska as well as statewide programs but has been conspicuously absent in Southeast. They have expressed interest in establishing a presence in Southeast but require funding for a position based here.

Draft Action Initiative 2: Establish a Renewable Energy Revolving Loan Fund for Residences and Small Businesses to Promote Local Installation and Fueling Industries

Funding:

Phase:	Budget:	Funding Source:
1. Research other existing programs.	$4,000.	State, Federal or foundation grant.
2. Contact municipal governments and utilities.	$12,000	State, Federal or foundation grant.
3. Research whether state legislation is required.	$4,000.	State, Federal or foundation grant.
4. Formulate specific language	$4,000.	State, Federal or foundation grant.
5. Secure financing	$24,000	State, Federal or foundation grant.
6. Push for state and/or local adoption.	$0	
6. Market the loan fund to potential users.	$0	

Outcome/Results:

The establishment of one or more revolving loan funds available to all Southeast Alaska residents and small businesses will be the primary objective. A broader goal will be to maximize the number of homes and businesses that are able to make use of these programs to convert from fossil fuels to renewable energy. The revolving loan fund administrators should be required to track participation rates and provide statistics to the public on the number of conversions funded.

The ultimate measure of success is to quantify the creation of a home-grown renewable energy industry involved in selling equipment, installing the systems, and providing fuels for their ongoing operation. JDEC and the Southeast Conference as well as the Alaska Department of Commerce and Economic Development should be able to conduct surveys to measure the new economic activity based on this initiative.

Draft Action Initiative 3: Market SE Alaska to the Existing and Emerging Renewable Energy Industry as a Test Venue for New Technologies and Specifically Taking Advantage of Our Diverse, Unique Renewable Energy Resources and High-Cost Energy Markets

Cluster Working Group:	Renewable Energy
Initiative Champion:	Zach Wilkinson
Initiative Implementation Team:	Bill Leighty, Kirk Hardcastle, Jim Rehfeldt

Description & Motivation:

We would like to provide motivation and incentive for entrepreneurs to bring their technologies to southeast Alaska for trials and prototyping. Due to the unique variety and abundance of renewable energy resources in southeast Alaska, coupled with the current high energy costs in SE Alaska, an opportunity exists for projects to be successful here, that would not be economically feasible in most other geographic areas of the United States.

We must provide transmission and, in some cases, firming storage so that they may market their energy product, for cash flow and for authentic testing. This presents valuable additional opportunities for this initiative.

Objectives:

Inform companies and entrepreneurs of this opportunity, and to convince them of its valu;

Bring new renewable energy harvesting, gathering, transmission, and storage technologies to SE Alaska, and beyond;

Build a Southeast Alaska – centric renewables industry;

Build State of AK interest in funding renewable energy systems R&D&Demonstrations, via enhanced funding for Emerging Energy Technology Fund, and other pathways.

We anticipate research and other investment opportunities to follow these investments in demonstration projects.

Draft Action Initiative 3: Market SE Alaska to the Existing and Emerging Renewable Energy Industry as a Test Venue for New Technologies and Specifically Taking Advantage of Our Diverse, Unique Renewable Energy Resources and High-Cost Energy Markets

ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Clearly define the opportunities that exist, and the benefits as compared to the opportunities that exist elsewhere geographically. GIS mapping of Southeast Alaska renewable resources: location, type, apparent markets (location and size, including export from SE), potential electricity or other transmission to markets.		JEDC's Asset map, Other research materials?? Meeting	June 1
2. Agree on a set of specific benefits we would like to market, and how we would like to market them, i.e. "what picture do we want to paint, and how will we paint it?" Describe extant Southeast Alaska resources to facilitate this initiative: transport, comm., workforce, support businesses (construction, rental equipment, concrete, etc.)		Meeting	June 1
3. Decide what marketing tools we will use (email, website, paper mailers or flyers, magazine advertising, word of mouth, conventions, brochures, telemarketing, social networking etc.????) Discuss costs/resources required, effectiveness, individual ability to perform the task etc and desired results. Assign responsibility for creating. Determine if funding is needed, if so how much and where from.		Meeting	June 15

Draft Action Initiative 3: Market SE Alaska to the Existing and Emerging Renewable Energy Industry as a Test Venue for New Technologies and Specifically Taking Advantage of Our Diverse, Unique Renewable Energy Resources and High-Cost Energy Markets

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
4. Create some marketing tools and documents based on step 4		Time/possibly money, computers, printing, internet	July 15
5. Distribute marketing material a.k.a actively market the idea.		Time/possibly money, computers, printing, internet, business networks, JEDC, Springboard, state research committee, AEA	July 30
6. Follow up on marketing responses and assist entrepreneurs via existing local networks.		Time, business networks	Undefined…

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Some of these efforts may have some financial cost	Very small amount of funding
Time-We are all very busy, so we will need to make time to accomplish this work	
Actively marketing	Participation from as many resources as possible to distribute and follow up. Funding will likely be required but will be dependent on the SOW determined by the group. Other resources required would be meeting space, computers,

Draft Action Initiative 3: Market SE Alaska to the Existing and Emerging Renewable Energy Industry as a Test Venue for New Technologies and Specifically Taking Advantage of Our Diverse, Unique Renewable Energy Resources and High-Cost Energy Markets

STEP:	Help needed:
	marketing expertise, time, travel, networks.

Funding:

Phase1 : Meetings to define scope of work (steps 1-3 from above)	Budget: $0	Funding Source: No funding required
Phase 2: Actively develop and deploy marketing	Budget: $0	Funding Source: This will likely require funding. Amount depends on what we decide as a SOW. Could include printing, travel, booths at conference, web design etc. Possible sources for funding may include but are not limited to: Private donations, AEA, NOAA, City of Juneau, donated time (in lieu of $$), springboard, ONR

Outcome/Results: We will successfully attract companies who will complete renewable energy projects in southeast Alaska that may not have come otherwise. Could be measured by # of companies that come as a result of our marketing or estimated:

- annual expenditures in SE AK;
- annual and total capital investments in SE AK;
- new employment: jobs, payroll;
- success of products developed via this initiative on world markets
- value of renewable energy exported from SE, via any means of "transmission", electricity or as fuels

Draft Action Initiative 3: Market SE Alaska to the Existing and Emerging Renewable Energy Industry as a Test Venue for New Technologies and Specifically Taking Advantage of Our Diverse, Unique Renewable Energy Resources and High-Cost Energy Markets

Draft Action Initiative 4: Market-driven Renewable Energy Economic Modeling for Southeast Alaska, including Multiple Transmission and Energy Storage Strategies

Cluster Working Group:	Renewable Energy
Initiative Champion:	Bill Leighty, The Leighty Foundation
Initiative Implementation Team:	Zach Wilkinson, Bryan Farrell

Description & Motivation: *What is the nature of the problem the initiative will address?*

-Need for Collab's and P'ships, by which to [Attract + Pool resources, discuss modeling results with them]

-Need for credible modeling: Mktg and Econ

-Immature technology needs R+D+Demo, to discover + demo tech+econ potential powermanes, if any of Southeast Alaska RE

Objective:

-Credible business case(s) to encourage firms to consider investing in nascent Southeast Alaska Renewable Energy industry be able to present and discuss

-Credibly promote Southeast Alaska as an R+D+Demo Site (Region)

-Raise funds for the modeling consulting study (IFS) necessary to accomplish the above

Draft Action Initiative 4: Market-driven Renewable Energy Economic Modeling for Southeast Alaska, including Multiple Transmission and Energy Storage Strategies

ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Compose RFT/RFQ for Mktg+Econ Consulting Modeling Study	Zack, Bill, REAP, SEACC, SCS (Sitka Conservation Society) Brian Hirsch, NREL		1-6 Months Concurrent With below
2. Find funding for Step 1.	AK Legis Delegation	Real $: Depends on responses to RFP/RFQ ($10-100K Estim)	6 months
3. Contract for the modeling study; supervise it. Approve and receive the report	Real $: $10-100K		6 months
4. Meet with public + private potential collaborators, to discuss report and form durable collaborators	All RE Cluster Working Group Members join these discussions		3 months
5. Agree on + propose a list of candidate projects, consistent with above			2 months

Draft Action Initiative 4: Market-driven Renewable Energy Economic Modeling for Southeast Alaska, including Multiple Transmission and Energy Storage Strategies

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
R+D+Demo			
6. Fund one or more of above projects		Real $ (-M)	

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Compose RFP/RFQ for modeling	Expert help, various
Funding for (1)	Funders; Funds
Contracts	Responses to RFP/RFQ
Supervise contractor	Experts on JEDC Subcommittee
Proposed project list	Discussions with collaborators
Fund Project(s)	Sponsors, collaborators, investors, funds, supervisors some projects may "cash plow" or be profitable, from energy sales revenue.

Draft Action Initiative 4: Market-driven Renewable Energy Economic Modeling for Southeast Alaska, including Multiple Transmission and Energy Storage Strategies

Funding:

Phase:	Budget:	Funding Source:
1.	Small	
2.	$100k	State of AK, US DOE, US DOD, others
3.		
4. Supervise contract	? work as group volunteer?	JEDC O'HD
5.	?	
6.	Depends on Project cost	

Outcome/Results:

-RFP/RFQ is credible; responses from potential contractors

-Consulting modeling is funded

-durable + capable collaborative formed

-Project(s) are built and work; tech + econ success

Draft Action Initiative 5: Explore Opportunities for Connecting SE Alaska Intertie to North American Grid to Improve the Economy and Quality of Life throughout the Region

Cluster Working Group:	Renewable Energy
Initiative Champion:	Duff Mitchell and John Sandor
Initiative Implementation Team:	Paul Southland

Description & Motivation:

Problem #1. Renewable energy projects are more profitable and economically viable if all the energy resource can be fully utilized. Stand alone projects that leave stranded or underutilized capacity lead to higher Alaskan costs for power.

Problem #2. Low water periods, growing seasonal local demand in winter months combined with water reservoir management issues can lead to supplemental requirements for diesel generation to meet local demand needs.

Problem #3. Continued increases in cost of diesel and fossil fuels leads to consumer substitution of electricity where lower price electricity exists.

Problem #4. Canada, with First Nation participation, has completed their environmental analysis and other plans for bringing more affordable renewable energy to improve the economy and quality of life values of central British Columbia by 2014. Alaska can benefit by understanding how Canada is achieving these objectives.

Problem #5. Intertie disconnected communities in both Alaska and Canada find their economies depressed by the lack of affordable power.

Objectives:

Objective #1. The objective of the initiative is to provide a means to fully utilize the developing and growing renewable energy resource in Southeast Alaska. This is accomplished by providing the opportunity for the sale of 100% project potential capacity as a surplus export. Local cost savings are achieved economies of scale inherent with the full and wise use of resources. The certainty of full utilization of the energy resource significantly increases the viability of energy projects and provides increased incentive for public and private financing of high dollar investment energy projects.

Objective #2. A North America interconnection would fully displace the need for future SE diesel electrification generation because the

intertie could import electrical energy resources in periods that Southeast utilities and hydropower facilities experience high demand or low water periods thereby saving ratepayers of all diesel backed up SE utilities.

Objective #3. Intermittent renewable energy firming options. An integrated intertie provides firming capabilities for small intermittent renewable energy developers to firm their resource with firm energy providers outside their immediate market space and thereby increase the value and economic viability of future wind, solar, and hydrokinetic energy developments.

Objective #4. Water Management assistance to Western USA. Southeast Alaska's resource peak and power needs are inverse to Western USA. Integrating renewable energy from Southeast Alaska provides better conservation of Western USA rivers by allowing utilities to purchase SE Alaska surplus during their periods of low water which occurs at our high water periods. This objective provides unique ecological benefits to Western USA river systems and aquatic species dependent in these systems.

Objective #5. With an Alaska-Canada partnership and transmission line interconnection, we can enable Alaska and British Columbia to explore opportunities to bring more affordable renewable energy to economically depressed communities in both countries. This would resolve a social injustice while also serving small communities paying exorbitant costs for energy, but also serves as a financial means to develop infrastructure through the export of surplus energy generated in Southeast Alaska to the North American Grid.

Draft Action Initiative 5: Explore Opportunities for Connecting SE Alaska Intertie to North American Grid to Improve the Economy and Quality of Life throughout the Region

ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Initiate and conduct Economic Feasibility and Benefit Analysis of North American electrical intertie integration with Southeast Alaska for these identified problems and objectives.	State of Alaska Dept. of Commerce; ACE coalition, JEDC.	Authorize and Require already appropriated $650K held by AEA for this very purpose. Study should be conducted by independent energy infrastructure financial institution or brand name firm like KPMG or Lloyds of London as recommended and used in British Columbia study. Budget $225,000	1-3 months
2. Plan and propose an Alaska Canada partnership that will enable Alaska and British Columbia to explore opportunities to bring more affordable renewable energy to economically depressed communities in both countries and develop the means and infrastructure to export surplus energy to the North American Grid.	Alaska Governor, Lt. Governor, Dept. of Commerce, ACE coalition, JEDC.	Authorize and Require already appropriated $650K held by AEA for this very purpose. Budget $125,000	1-12 months

Draft Action Initiative 5: Explore Opportunities for Connecting SE Alaska Intertie to North American Grid to Improve the Economy and Quality of Life throughout the Region

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
3. Upon completion of Economic Feasibility and Benefit Analysis of North American electrical integration with Southeast Alaska, develop business plan and organizational structure for Intertie	State of Alaska Dept. of Commerce, JEDC, ACE Coalition, AIDEA	Budget $125,000	6 -12 months
4. Execute Business plan	ACE Coalition, JEDC	Budget $125,000	12 month +

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Alaska Energy Authority resistance to utilize AKBC funds as legislatively intended.	JEDC recommendation to proceed.
The lack of knowledge within Alaska of the Canadian, British Columbia and local governments in partnership with First Nations have made their goals for economic growth through the development of affordable energy..	JEDC recommendation to proceed.
The resistance to consider possible benefits from an analysis of the experience and renewable energy achievements in British Columbia.	JEDC recommendation to proceed.

Draft Action Initiative 5: Explore Opportunities for Connecting SE Alaska Intertie to North American Grid to Improve the Economy and Quality of Life throughout the Region

STEP:	Help needed:
The lack of appreciation of the potential benefits of an Alaska Canada Renewable Energy partnership.	JEDC recommendation to proceed.

Funding:

Phase:	Budget:	Funding Source:
Economic Feasibility and Benefit Analysis of North American electrical intertie integration with Southeast Alaska	$250,000	AEA AK/BC monies appropriated and held by AEA ($637K balance)
Alaska Canada Energy Partnership	$125,000	AEA AK/BC monies appropriated and held by AEA
Develop Business Plan and Organizational structure.	$125,000	AEA AK/BC monies appropriated and held by AEA
Execute business plan	$125,000	AEA AK/BC monies appropriated and held by AEA and seek additional public and private funding sources based on organizational structure and business plan.

Outcome/Results:

The Economic Feasibility and Analysis (conducted by a qualified and experienced infrastructure financial services/institution) provides factual and objective benefits that outweigh the costs that incorporate the four objectives and considers the identified problems of this AIT in the Economic Feasibility and Analysis study.

The Study will provide objective analysis to evaluate whether or not the next steps should be implemented and a business plan developed.

We will evaluate if we are successful or not by creating a body of knowledge that does not currently exist to determine if this Intertie connection is, in fact, a pathway and a means to assist Southeast Alaska citizens and help spur a renewable energy development industry

Draft Action Initiative 5: Explore Opportunities for Connecting SE Alaska Intertie to North American Grid to Improve the Economy and Quality of Life throughout the Region

in Southeast Alaska by providing:

Firm power alternatives for all renewable energy developers;

A full utilization of energy resources by providing a 100% market access for excess surplus power;

Providing a revenue stream to bond intertie segments between southeast communities by having excess surplus power sales contribute to paying off bond debt through wheeling fees;

Providing access and opportunity to justify expansion and continued build out of the Southeast Intertie which can connect diesel dependent communities along the routes (Angoon, Kake, Hoonah).

Draft Action Initiative 6: Biomass Energy Demand Development

Cluster Working Group:	Renewable Energy
Initiative Champion:	Bob Deering
Initiative Implementation Team:	Bob Deering, Ross Good, Nate Sobolef

Description & Motivation:

Biomass energy has tremendous potential to meet the region's energy needs with a local renewable energy source. Hydroelectricity, the other major energy supply in the region, is approaching its practical capacity limits – the 'easy' hydro has been tapped, and future sites are expensive and risky to develop. Transmission lines are cost prohibitive, running ~$1.5M per mile, and ~$5M per mile of undersea cable, and are constrained by geographic and land use limitations.

Oil, which provides about ¾ of the region's energy, is expensive and suffers unpredictable price spikes which make energy budgeting a guessing game for consumers. As oil prices rise, residents in the region have demonstrated that they can rapidly shift to other energy sources for building heating – and that source is mainly electricity. As discussed above, hydro capacity cannot easily respond in a timely manner, and even a relatively percentage small shift from oil heating to electrical heating (even using heat pump technology) can quickly consume the utility's reservoir capacity, causing higher rates and supply issues.

Electric cars are an emerging mainstream technology with the potential to demand an additional 20% of AELP's capacity. SE Alaska, with its limited road infrastructure, represents an excellent location for electric cars because 'range anxiety' isn't a factor. If oil prices remain high, and go higher, the shift to electric cars could proceed faster than anticipated, and faster than our hydro capacity can keep up.

Objectives:

The objective of this initiative is to identify a transition strategy to biomass energy to complement our hydroelectric energy supply, with the ultimate goal to wean the region off of oil to the maximum extent possible.

If successful, this region could shift from one of the most oil-dependent regions in the country to one of the least. We could be a model for the rest of the nation, and possibly the world. We have world class resources at our fingertips.

What this initiative will NOT be focusing on is the biomass supply side of the equation. That is a key aspect to making biomass a successful energy player in the region, but this issue will be addressed by the biomass energy team in the Forest Products Cluster Working Group. The Supply and Demand teams will coordinate their efforts to grow this 'new' industry from the ground up, approaching it from both directions.

Draft Action Initiative 6: Biomass Energy Demand Development

ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. 1. Identify the scope of the challenge. Get a clear handle on our current energy usage and available hydroelectric capacity.	Regional electric utilities, State and city policy makers and planners, key local engineers/experts, local heating contractors/suppliers, UAS	Data gathering and analysis – need smart people with access to the data.	3 months
2. Educate key decision makers in the region – governments, utilities, major facility owners, property developers. Help them understand the scope of the problem and the range of possible solutions	Same as above	Smart, articulate people. Access to the ears that need to hear this.	3 months
3. Identify opportunities to 'move the needle'. The Willoughby Development district heating concept is one such possibility which could displace well over 500,000 gallons of annual heating oil consumption. Integrate this energy source with other energy efficiency and planning efforts in a complementary fashion.	Community planners, engineers, government decision makers	Pretty much the same as above.	1 year
4. Seek out financing opportunities. There are numerous federal and state grant and loan programs out there to help turn these projects into reality. There may also be venture capital to finance startups. And there are the traditional federal, state, and city appropriation processes.	Grant writers, federal and state program managers, financial analysts	Same as the box to the left	1 year

Draft Action Initiative 6: Biomass Energy Demand Development

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
6. Implement biomass projects. Whether federal, state, city, or private. Facilitate the implementation of these projects as much as possible. Add pages as needed.	Designers/engineers, contracting specialists, construction contractors, equipment suppliers	Funding authority and sound project management for starters.	1-10 years, depending on the projects

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
The biggest obstacle will be inertia. Resistance to change.	A concerted effort from a broad spectrum of people, to educate and initiate action. Getting a 'cause to action' campaign kicked off.
Denial of the problem. Many people will maintain that our current energy sources are adequate to meet our needs.	A strong education campaign, from credible sources.
Misperceptions about biomass energy. There will be those who view biomass as a source of pollution, or possibly a threat to the Tongass.	Education by knowledgeable sources. Successful demonstrations of the technology. Thoughtful consultation with resource managers and conservation groups.
Supply worries. If the supply can't be delivered at a (better than) competitive price, in the quantities needed, the initiative will fail.	Success by the biomass team on the Forest Products Cluster Working Group.

Funding:

Phase:	Budget:	Funding Source:
Education and research	3-4 dedicated people, with appropriate skills, for one year	Unknown – could be a variety/combo of sources

Draft Action Initiative 6: Biomass Energy Demand Development

Phase:	Budget:	Funding Source:
Planning/design/implementation	Difficult to say. Depends on the scope and magnitude of the effort.	Varies with the activity

Outcome/Results:

The simplest measures will be to determine what percentage of our overall energy needs is coming from biomass, and how much our usage of heating oil and transportation fuel usage intensity has decreased.

Draft Action Initiative 7: Discover Best Practices From Around the World to Overcome Barriers & What Is Being Done To Incentivize Change Regarding Renewable Energy and Energy Efficiency

Cluster Working Group:	Renewable Energy
Initiative Champion:	Nathan Soboloff, Haa Aaní, LLC/Sealaska
Initiative Implementation Team:	Bob Deering, Duff Mitchell

Description & Motivation:

governmental/regulatory barriers (ex burn ban exemptions for pellets but not densified firelogs)

Price of technology – products are not always made locally (even nationally)

Distribution barriers – heating oil distribution network exists and has a 100+ year head start in development

Some heating technologies (oil) operate on their own without any care whereas even the best pellet boiler needs to have ash removed at least 2x a year or more

Patent barriers may exist

Technology is not being sold or promoted locally… if at all (people don't know about it, people can't get it if they do)

Licensing… ASME and UL listing requirements take money to get and time to approve

Cap and Trade system for CO2 emissions

The cost of heating keeps rising

Objective:

Make renewable energy technologies (and energy efficiency technologies) cheaper and locally available. Technology and industries exists worldwide that are not present in Alaska today. A more aggressive objective would for products to be manufactured locally.

Draft Action Initiative 7: Discover Best Practices From Around the World to Overcome Barriers & What Is Being Done To Incentivize Change Regarding Renewable Energy and Energy Efficiency

ACTION PLAN

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
1. Identify products and technologies that exist today that could help, and identify why those products and technologies are not present in Alaska.	USFS	Time, little $	1 month
2. Analyze the information and conduct an economic analysis comparing the various technologies against one another (in a matrix form?)	USFS	Time, little $	1 month
3. Make the technology affordable by creating US industries to manufacture the goods here. Example some pellet boilers must be imported from Austria which adds cost.	Some US company…	Time, relationship building	Long term
4. Streamline licensing and engineering process to make existing products legal for sales and installation in the US that are currently deployed through out the rest of the world. (ASME approval and UL licensing).	US Federal Government	Time, internal government $	1 year
5. Incentivize people/businesses, public facilities to convert to Renewable Energy and EE technology. (Tax credits, or change out programs etc)	Someone in the US Govt that deals with Tax credits. Maybe JEDC, who runs the Fairbanks wood stove changeout program?	Time, $Millions depending on how big you want the program to be for a changeout Tax credits?	1 year
6. Encourage & help local businesses to sell and service the	Maybe JEDC?	Time relationship building… maybe no	Long term

Draft Action Initiative 7: Discover Best Practices From Around the World to Overcome Barriers & What Is Being Done To Incentivize Change Regarding Renewable Energy and Energy Efficiency

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
technology.		cost	continuous

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
The biggest obstacle will be locating good products and technologies and cultivating relationships to make those items legal for sale within the US AND to bring economies of scale to the project such that the cost/unit decreases to become cost competitive with a fossil fuel based heating device	Time and a Champion on a product by product basis
Look at the OkoFEN wood pellet boiler (Austrian) and what Maine Energy Systems has done to license and approve the technology what was once a cost competitive product in Austria (affordable to many) is now more expensive than the most expensive condensing oil fired boiler. We need to make products a lot less expensive.	

Draft Action Initiative 7: Discover Best Practices From Around the World to Overcome Barriers & What Is Being Done To Incentivize Change Regarding Renewable Energy and Energy Efficiency

Funding: ***What is the estimated cost of this initiative, in phases beginning with design, the 'ramping up' phase, and then for ongoing annual costs? Note potential sources of funding for each phase if possible.***

Phase:	Budget:	Funding Source:
1) Investigate	.5 Million	USFS
2) Legalize technology for US consumers (ASME approval and UL listing)	Maybe 1 Million per technology	USFS?
3) Continue to create the relationships between technology providers and products and the local companies to sell and install/service them	1-2 FTE	USFS or DOE

Draft Action Initiative 8: Streamline Permitting and Schedule Acceleration

Cluster Working Group:	Renewable Energy
Initiative Champion:	Ross Good, Elcon Corporation
Initiative Implementation Team:	Ross Good, Elcon Corporation

Description & Motivation: Citizens in SE Alaska are all aware of projects and initiatives gaining traction to address the high cost of energy. The people expect these projects to accumulate measurable progress on a daily basis. They regard this progress as a method to determine whether or not their elected state officials are spending their time efficiently. Needless to say, the constituents of SE Alaska are growing increasingly impatient with the influx of interest groups, government bureaucracy and the countless layers of oversight which have extended project procurement periods out 10 to 20 years. While citizens are forced to address a $1,000 electrical bill, a policy maker in Washington DC, an individual who's never once visited the great state of Alaska, is voting on policies which will never have an impact on his way of life. It's this layer of nonsensical oversight and bureaucracy that has branded the term 'progress' as nothing more than sales pitch for politicians. The people have lost faith in their government to hone in on the true needs of their people; means for survival, growth and prosperity. To sustain any one of these basic needs, one must have access to affordable energy. Something must be done to win back the people's faith in their government.

Objective:

A central authority must be established to consolidate all decision making, permitting and licensing associated with small and large scale renewable energy projects. This will allow all vested parties to convene at set times during the planning/permitting phase and discuss concerns and achieve measurable progress. As a mediator, this authority can act as a conduit of communication from the federal (FERC, Army Corp of Engineers) to the communal (owner, citizen) level. Having a central authority will provide and serve as a forum for all topics to be debated. It will also make it easier to execute tasks simultaneously to minimize time for project planning.

At one point in Alaska's history, an organization like this existed and was recognized as a valuable asset. Identified as the Division of Governmental Coordination (DGC), the agency operated out of the office of the Governor and had a broad authority over all complex and multi-level governmental projects. For a state that is fundamentally dependent on resource development, investing in a regulatory procedure which expedites the procurement of resource-related projects would seem logical. Governor Murkowski soon terminated the office in an effort to reduce expenditures, deflating any hope the DGC could continue into the future.

Considering the interest in utilizing the abundant water & wind resources in Alaska to meet the state's energy needs, formation of a similar

office is in the best interest of Alaska. This new assembly must consist of personnel who are highly educated in natural resource control. This will enable projects to reach fruition at a much faster rate in comparison to the current non-linear method. If established, you will see a revitalized interest in both standard and entrepreneurial efforts in addressing the energy needs of SE Alaska. The invigorated interest in the region will be complimented by the formation of new industries and job growth. People will soon come to recognize Alaska as a state which embraces new ideas associated with renewable energy. The state's wiliness to dedicate highly-professional staff to guide entrepreneurs through the arduous permitting process will alleviate much of the stress and pains experienced by today's projects. This movement of thinking outside the box will not only be shared by those in government and public utilities, but also in small isolated communities. These people are in desperate need of immediate action and we must find ways to cut through the bureaucracy and deliver meaningful alternatives.

ACTION PLAN

Describe the specific steps/tasks.	**Key People: Who needs to be involved to accomplish step (ID business, agency, or people)**	**Resources needed to accomplish step**	**Timeline to accomplish step**
Perform Procurement Audit of all SE Alaska Renewable Energy projects. Determine procurement timelines of previous projects.	Consultant, Utility Owners	Computers, Travel Allowance, Consultant	12 weeks
Identify procedures which can be improved upon. Identify steps which were identified as unnecessary.	Pull together Project Representatives from past, current and future scopes of work which could benefit from such a system. Identify their frustrations and utilize this to direct your next objective. Engineering firms, utility owners, members from old DGC office.	Large Conference Room and Free Lunch to lure key members.	4 weeks
2. Confirm the items can be approved upon from old method.	Sit down with past members of Division of Governmental Coordination to discuss issues outlined in first step.	Large Conference Room and Free Lunch to lure key members.	4 weeks

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
3. Write up extensive study on findings.	Present to Governor Parnell and other member of finance staff. Request hearing to debate legitimacy of request.	Miracle	8 weeks
4. If approved, moved to confirm the logistics and function of new office and ensure the method mimics method used from 1988 to 1994 in the Division of Governmental Coordination.	Old staff of Division of Governmental Coordination, other professionals.	Double Miracle	8 months

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Turf War on Authority	Reason & Coordination
No branch of government or authority thinks kindly to reducing	If the government agrees to re-instate the DGC, the DNR must
their role in permitting work. The Department of Natural	willingly release its authority to the DGC. The reasons for this
Resources (DNR) inherited much of the function & power once	must be clear in order for the transition to succeed. Parties from
appointed to the DGC. The DNR has watered down the function	DNR must understand their current system is a far cry to the
the effectiveness once practiced by the DGC due to the sheer	original DGC and the past-time methods must be acknowledged

STEP:	Help needed:
magnitude of thei department. We need an office who's only purpose is to oversee & coordinate Renewable Energy projects.	as superior in efficiency and purpose. All parties must engage to improve functionality of new DGC.

Funding:

Phase:	Budget:	Funding Source:
Procurement Audit	$20,000	State Budget
Approval from State of DGC Office	$30,000	State Budget
Hiring/Appointment of DGC Personnel	$1,500,000	State Budget
Transition of Authority from DNR to DGC	$300,000	State Budget
Annual Operation Costs of Personnel	$1,500,000	State Budget

Outcome/Results: Perform audit of all previous Renewable Energy Projects in State of Alaska. Determine procurement periods for project and analyze durations of procurement while DGC was active and after it was absorbed into DNR. After five years of operation, conduct similar audit of those 5 years and determine if procurement period has been reduced due to new DGC office.

List of Individuals Contacted for History of DGC – Division of Governmental Coordination:

Sydney Mitchell - 907-586-1055

Jacky Timothy - Alaska Fish & Game - 907-465-4275

Carry Howard - Department of Natural Resources - 907-465-3176

Randy Bates - Coastal Management Program - 907-465-8797

Glenn Gray - Glenn Gray Associates - 907-789-7822

Diane Mayor - Executive Director of SE Land Trust - 907-586-3100

Lorraine Marshall - Retired, unable to contact but residing in Juneau

Lisa Weissler - Division of Project Management and Procurement 907-465-6720

Draft Action Initiative 9: Renewable Energy Education for SE Alaska Residents, Students and Businesses

Cluster Working Group:	Renewable Energy
Initiative Champion:	Brandon Smith and Heather Hardcastle
Initiative Implementation Team:	Brandon Smith, Alaska Brewing Company Heather Hardcastle, Fishermen's Daughters Ecofuels Kirk Hardcastle, Alaska Center for Energy and Power Ron Holman

Description & Motivation:

Lack of clear understanding among Southeast Alaska's general public of what renewable energy is and how renewable energy projects and products in the region do and/or could relate to them.

Insufficient resources at educational levels (pre-K through university level) for teaching the next generation about renewable energy, including the current and potential renewable energy research and development efforts occurring in Southeast Alaska.

Lack of credible, immediate information for Southeast Alaska businesses [on the demand side of a renewable energy industry] that would allow them to make informed decisions about renewable energy.

Objective:

Increase the awareness of the public—including municipal and State leadership--of renewable energy through fact-driven informational campaigns. This education will increase public support for renewable energy issues and projects, which is especially important when public policy changes (regulations, etc.) will be required for the successful development of a renewable energy industry in Southeast Alaska.

Develop renewable energy education programs targeted to different age groups within the State educational system (pre-K through university level), and work with the appropriate entities to implement these programs on an ongoing basis. This will help develop a base of future—and local—renewable energy planners, innovators, and decision makers.

Develop renewable energy informational programs that can be presented to Southeast ALaska businesses, showing the advantages of

Draft Action Initiative 9: Renewable Energy Education for SE Alaska Residents, Students and Businesses

investing in and supporting renewable energy in the region. This would create critical demand-side support for the emerging industry.

***WE RECOGNIZE THIS ACTION INTIATIVE IS VERY BROAD AND ACTUALLY COMPRISES A MULTITUDE OF INDIVIDUAL ACTION INITIATIVES. WE'VE ATTEMPTED TO OUTLINE SOME BROAD DIRECTIONS TO GO WITH A RENEWABLE ENERGY EDUCATION EFFORT AND HAVE*

LISTED SOME POSSIBLE SPECIFIC TASKS/NEXT STEPS. WE HOPE THE SOUTHEAST ALASKA RENEWABLE ENERGY STEERING

COMMITTEE CAN TAKE THESE GENERAL IDEAS AND CHOOSE TO FOCUS ON JUST ONE OR TWO TASKS THAT THEY DEEM TO BE

*MOST "ACTIONABLE" IN THE NEAR TERM.***

ACTION PLAN

Describe the specific steps/tasks.	**Key People: Who needs to be involved to accomplish step (ID business, agency, or people)**	**Resources needed to accomplish step**	**Timeline to accomplish step**
1. Research existing programs that can be used as sources of ideas, resources and/or models for the development and implementation of renewable energy education programs for Southeast Alaska residents, students and businesses. **We don't have to look too far to find a successful renewable energy education model; REAP has been done tremendous work based in the Interior for many years. We see great value in REAP opening a Southeast Alaska office so that their current efforts [focused more on the Railbelt] could take on a Southeast Alaska focus from their "branch" in this region—that has a different lifestyle and different resources and issues than does Southcentral Alaska.	RE Seed Cluster Steering Committee, REAP personnel, NREL (Brian Hirsch) and ACEP personnel	Personnel, funding, time, energy and passion!	
2. Develop and implement renewable energy public awareness campaign for Southeast Alaska:	RE Seed Cluster Steering Committee, REAP personnel (including Stephanie Nowers who	Personnel, funding, time, energy and passion!	

Draft Action Initiative 9: Renewable Energy Education for SE Alaska Residents, Students and Businesses

Describe the specific steps/tasks.	Key People: Who needs to be involved to accomplish step (ID business, agency, or people)	Resources needed to accomplish step	Timeline to accomplish step
a. Develop a media campaign to introduce renewable energy to the region in an organized/targeted way through a webpage/website, newspaper articles [that highlight individual stories of Southeast residents, in particular], radio PSAs, a simple DVD to distribute for free (such as Sitka Conservation Society's "Rain Power"), etc. b. Identify regional renewable energy project(s) that demonstrate the value and potential of renewable energy (i.e. TSMRI saltwater pump, Juneau's new swimming pool ground-source heat pumps, Sealaska Corp.'s pellet boiler, etc.). Develop education pieces around these projects, including guided field trips and presentations for municipal and State leaders, business leaders, students and members of the public-at-large. c. Incorporate renewable energy education pieces into displays at key USFS sites used by tourists AND locals (i.e. Mendenhall Glacier Visitor Center and Ketchikan's Southeast Alaska Discovery Center). d. Incorporate discussions of regional renewable energy research, development and ongoing projects into conference presentations that are *open to the public* (i.e. ACEP's Rural Energy Conference in Juneau Sept. 2011). Specifically invite municipal, State and	maintains a thorough website and frequent newsletter for REAP and whose husband is videographer), ACEP personnel, NREL (Brian Hirsch), Southeast Conference and USFS employees		

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business leaders to these presentations. e. Coordinate renewable energy entrepreneurs, researchers, engineers, policy experts, etc. to deliver "Lunch & Learn" presentations in key venues (Capitol, ADEC, ADNR, USFS and ADF&G offices, etc.).			
3. Develop and implement multi-level education programs for the State educational system: a. Create a series of hands-on, interactive curricula that can be implemented at several education levels, pre-K through university. The STEM program would ideally serve to assist in curricula development and implementation. b. Encourage UAS to support programs that focus on renewable energy R & D (including the fledgling engineering department). c. Foster connections between UAS students and educators with NMFS and USFS research stations with regard to potential renewable energy R & D work that could be accomplished over the long-term in	RE Seed Cluster Steering Committee, REAP personnel (including Hannah Gustafson who is involved with renewable energy curriculum development), ACEP personnel and Alaska Housing and Finance Corporation (may have funding for Renewable Energy curriculum development), State science curriculum specialists, interested Renewable Energy "tinkerers" and entrepreneurs, JEDC STEM educators, UAS administration and educators, NREL (Brian Hirsch) and NMFS and USFS research stations	Personnel, funding, time, energy and passion!	

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Southeast Alaska. d. Host a "Southeast Alaska Renewable Energy Design Fair" for high school and UAS students to get students excited about helping to create a new "industry of the future" for this region. Students could be mentored by local "tinkerers," entrepreneurs and scientists, much like the mentorship program in the annual Science Fair [which may have just had its last event in 2011].			
4. Develop and utilize business-focused renewable energy educational materials: a. Survey (and/or host focus groups with) a sample of business owners from across the region to determine where their Renewable Energy understanding is currently at, how/if Renewable Energy currently impacts their business and how/if they envision Renewable Energy assisting their business in the future. b. Coordinate renewable energy entrepreneurs, researchers, engineers, policy experts, etc. to deliver "Lunch & Learn" presentations in key venues (i.e. Rotary International Club and Chamber of Commerce luncheons, as well as Southeast Conference Summits	RE Seed Cluster Steering Committee, REAP personnel, ACEP personnel, Rotary International clubs and Chambers of Commerce in Southeast Alaska communities, businesses that can extol virtues and potential of Renewable Energy (Alaska Brewing Company, AEL&P, Sealaska Corp., etc.), Southeast Conference	Personnel, funding, time, energy and passion!	

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and Mid-Session Summits). c. Include articles that discuss renewable energy successes and potential in the region in publications like Alaska Business Monthly, Alaska Journal of Commerce and other trade publications.			

Obstacles and Impediments Likely to Affect Implementation:

STEP:	Help needed:
Public awareness campaign: Overcoming opposition to specific renewable energy issues (i.e. use of forest products for energy).	Emulate successful campaigns mounted in other places (network within the global renewable energy industry).
Educational system implementation: Finding the right pathways within local school systems (i.e. High-level entry? Individual sites?).	Need someone well versed in navigating local school system bureaucracies.
Business campaign: Lack of an "in" to local businesses.	Need a champion at local Chambers of Commerce, and at other business groups. Southeast Conference will be an important partner (and possibly REAP—see below) in this effort.
All three subsets of renewable energy education: Numerous, broad tasks are daunting, and it's difficult to know where to begin.	It's important that Renewable Energy Seed Cluster members continually remind one another that work toward accomplishing any one of the suggested tasks is additive, and a step closer toward creating a mature renewable energy industry in Southeast Alaska.
	Additionally, an ideal Renewable Energy SEED Cluster "partner" in this vast education/marketing effort is REAP. It would be ideal if REAP could open a Southeast Alaska office to help in the research, development and implementation of renewable energy education

Draft Action Initiative 9: Renewable Energy Education for SE Alaska Residents, Students and Businesses

STEP:	Help needed:
	programs in Southeast Alaska.

Funding:

Phase:	Budget:	Funding Source:
1 – Research/record/analyze successful renewable energy education/PR efforts in other areas		
2 – Develop/implement renewable energy public awareness campaign		
3 – Develop/implement renewable energy programs in State educational system		
4 – Develop/utilize renewable energy educational programs for businesses that are on demand side of emerging industry		

Outcome/Results:

Given the broad focus of the initiative, the results can be hard to measure. The success of a PR campaign could be measured with before-and-after opinion polls. Implementation in the educational system is ongoing. In the short term, if the program can be integrated into curricula (such as science), teachers and administrators can be asked if they felt that the program was useful in a general sense within the subject area. In the long term, the objective is to ingrain renewable energy into the minds of young people; the success of that is harder to measure. On the business side, a before-and-after assessment might be useful there, as well.