A Retrospective and Prospective Look at Energy in Southeast Alaska

Sean Skaling, Assistant Executive Director
Alaska Energy Authority

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Southeast’s superb natural resources

- Fish and seafood
- Human cultural heritage
- Human capacity
- Hydropower
- Wood for biomass heat
- Energy efficiency opportunities
- Heat pumps
- Transmission
- Transportation
- Natural beauty (tourism)
Where the water hits the hydro turbine

• Rubber meets the road
  = Equals =
• Good projects successfully implemented

• Southeast has many examples
Statewide Electricity Generation in Alaska

- Gas: 52.9%
- Oil: 13.6%
- Hydro: 24.9%
- Coal: 6.1%
- Wind: 2.5%

Source: 2013 Alaska Energy Statistics
Alaska Net Generation by Fuel Type 1973-2013

Source: 2013 Alaska Energy Statistics
Renewable Energy Fund: Annual Fuel Savings
AEA Funding in Southeast (FY15-present)

• 35 projects
• $101M State, $7M Denali Commission
• Mostly Renewable Energy
• Rural Power Systems
• Bulk Fuel
• Energy Efficiency

• 28% of funding still in the pipeline
Southeast Projects
Completed (Sample)
Hoonah, Gartina Falls
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Sitka, Blue Lake Expansion
Gustavus, Falls Creek
Other Projects Completed

- Whitman Lake, Ketchikan
- Snettisham Transmission, Juneau
- North POW Intertie
- Thorne Bay School Biomass
- Haines Central Wood Heating
- Juneau Ground Source Heat Pump
- Juneau Aquatic Center GSHP

- Edna Bay Bulk Fuel Facility
- Kasaan Bulk Fuel Facility
- Yakutat Diesel Powerhouse
- Hoonah Heat Recovery
- Energy Efficiency Yakutat (VEEP)
- Sitka Centennial Hall & Library Air Source Heat Pump
Projects in the Pipeline

• Thayer Lake, Angoon
• Hiilangaay (Reynolds), POW
• Hoonah Biomass District Heat
• Kake Diesel Powerhouse
• Kake Bulk Fuel Facility
• Gunnuk Creek, Kake??
• Indian River Hydro, Tenakee Spr.
• Angoon THRHA Pellet Heating
Kake Powerhouse Module
Powerhouse Innovations

• Oil level sensor example
• Prior had high failure rate
• Prior was high or low alarm
• New is ultrasonic
• Always indicates fill level
• Can trend fill level
• Mounted to floor to reduce vibrations
• One of many innovations
Financing Projects
Hydro can be a smart investment decision – with grant funds
And without
Example: Pelican

650 kW run-of-river
Powers entire community
$61,000 loan to match DOE and REF grants
Example: Hiilangaay, POW Island

- Project development through REF grants
- Construction financed $20M PPF loan from AEA
Example: Waterfall Creek, King Cove

- 375kW run-of-river
- 1,000 MWh/yr
- 75,000 gallons of diesel saved per year
- Renewable Energy Fund and
- $1.9M Power Project Fund Loan
Example: Allison Creek, Copper Valley Electric

$23M REF and State Grant
$32M debt financing
Displaces 700,000 gal fuel annually
Current News

• Renewable Energy Fund
  • Recommending same 39 projects from last year
  • None were funded last year
  • 9 of 39 from Southeast
    • 4 hydro
    • 3 biomass
    • 2 heat pump

• Emerging Technology Fund
  • Soliciting for targeted scope
  • Solve an integration issue with potential widespread benefit
  • No new funding, returned/unused funds
The Alaska Affordable Energy Strategy

• Preliminary findings relevant to Southeast:
• LNG use in southeast does not currently appear feasible
• Energy efficiency is an opportunity
• ASHP underutilized in some communities with:
  • Low cost of power
  • Excess hydro capacity
• Biomass: pellets appear to have lower operating cost than cordwood, but cordwood operational costs are local jobs
• AkAES provides data-driven decision making
Other AEA Activities

• Commercial Property Assessed Clean Energy (C-PACE)
• Volkswagen Settlement
• Hydropower Vision Report from DOE
• Other states using creative policy & financial tools
  • On-bill financing
  • Voluntary solar gardens
  • Offshore wind
  • Energy Efficiency Resource Standards
Link between PCE and AEA programs

• AEA’s programs are all oriented around our mission: 

  **Reduce the cost of Energy in Alaska**

• By providing AEA’s services, energy costs are lower:

• Without AEA’s services, technical problems would lead to expensive emergencies or equipment damage

• Every day we field calls that avert larger expenses in the future

• Those expenses would raise energy rates for customers, which would raise the cost to the Power Cost Equalization program.

• PCE covers 2/3 of kWh sales in 193 PCE communities
AEA assistance to Diomede power outage

• Last Friday morning learned of emergency power outage
• Phones down too
• AEA lined up a contractor to dispatch if no phone established
• Community used portable generator to get phones up to call AEA
• Resolved by phone by 9pm Friday evening
• Saved thousands through technical assistance by phone
AEA Today and Tomorrow

• AEA small organization with large mission
• AEA’s operations and projects significantly impact cost of energy in communities
• Positive impact to Power Cost Equalization program costs
  • PCE is fully endowed
  • 193 PCE communities
  • Higher energy costs cause greater burden on PCE program cost
  • AEA’s operations and programs keep downward pressure on energy costs
• We are retooling for the new economy
Thank you

Sean Skaling
Assistant Executive Director, Energy Policy Director
sskaling@aidea.org
771-3079

WWW.AKENERGYAUTHORITY.ORG