
8th International Conference on Environmental, Cultural, Economic and Social Sustainability

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Mission Statement:

ISER enhances the well-being of Alaskans and others, through non-partisan research that helps people understand social and economic systems and supports informed public and private decision-making.
Impacts of rising energy costs

- ISER research estimates that the poorest households in remote rural villages spend nearly half their household income on home energy.
Transportation and Heating Requirement per household, Kongiganak
Source: Intelligent Energy Systems, LLC
Alaska Renewable Energy Fund

• 2008 historically high crude oil prices
• Alaska State Legislature created Renewable Energy Fund (REF) grant program
• Intent to appropriate $50 million annually for five years
• Placed Alaska near the forefront of the 50 states in funding for renewable energy
Project review and selection process

- Request for applications
- Clear, objective review procedures
- Four-stage review process:
  - One—eligibility and potential feasibility screening
  - Two—technical and economic review
  - Three—comparative cost of energy, local match, sustainability, public benefits
  - Four—geographic balance of funding
## Stage 2 Engineering and economic feasibility evaluation

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Management, Development, and Operation</td>
<td>20%</td>
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<tr>
<td>2. Qualifications and Experience</td>
<td>20%</td>
</tr>
<tr>
<td>3. Technical Feasibility</td>
<td>20%</td>
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<tr>
<td>4. Economic Feasibility</td>
<td>40%</td>
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### Stage 3 Evaluation for local support and sustainability

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Cost of energy per resident relative to other areas</td>
<td>25%</td>
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<tr>
<td>Matching funds and other resources committed</td>
<td>20%</td>
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<tr>
<td>Project feasibility</td>
<td>20%</td>
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<tr>
<td>Project readiness</td>
<td>10%</td>
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<tr>
<td>Public benefits including economic benefit to the Alaska public.</td>
<td>15%</td>
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<tr>
<td>Sustainability – the ability to finance, operate and maintain the project for the life of the project</td>
<td>5%</td>
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<tr>
<td>Local Support</td>
<td>5%</td>
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<tr>
<td>Statewide balance of funds</td>
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<td>Compliance with previous grant awards and progress in previous phases.</td>
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Request for Applications

- More than 450 applications requesting more than $1.1 billion for rounds one through four.
Project funding

- $154.8 million awarded for 181 projects
Project funding
$109.3 million initial funding to 150 projects in remote villages; or 83% of funded projects
Bottom up versus top down

- Assumed better information leads to match up between applicant led versus agency identified project but that is not the case.
- Good match with wind (80%), medium with biomass (54%), poor with hydroelectric (12%).
- Tendency to go with more proven technologies even if the economics are poor?
- Over focus on electricity rather than space heating—biomass also provides local employment.
How Alaska compares

• Most other U.S. state programs ratepayer financed
• Directed at demand-side distributed generation systems
• Clean Energy State Alliance over 52,000 projects
• 1,300 MW installed through 2009
• About half wind and half solar but wind ended with federal production tax credits
• Over next decade, $7.2 billion ratepayer collections, $4.6 billion in California alone
Lessons learned

• Clear, transparent public and appealable process is critical and worth the time and cost
• Need for more feedback and higher expectations on applications
• More project vetting via feasibility studies
• $4 million grant cap might undersize projects; led to artificial phasing
• Grant reimbursement process difficult for small operators without access to capital
Lessons learned

• Increased RE installations but loans or more leverage for urban projects may be warranted
• Leveraging of public funds 1: 1.7; most leverage from urban projects; below other states (1:3)
• Left federal production tax credits “on the table”
• Growing a fledgling industry—critical to provide enough but not too much funding
• Alaska becoming a leader in non-grid connected renewable energy systems
Challenge “to think out of the box”

- Agency fiduciary obligation for funds tends to stifle innovation
- Projects with more risk or more engaged with communities take longer to show success
- Fine line between supporting innovation and new solutions to enduring challenges and “wasting” funds
Estimated annual per household savings on space heating

Current price of fuel oil: $5.35
Electric rate for heat: $0.09/kWh

37% reduction

Current | Expected
--- | ---
$4,000 | $2,500
$3,500 | $2,000
$3,000 | $1,500
$2,500 | $1,000
$2,000 | $500
$1,500 | $-
$1,000 | $-
$500 | $-
$- | $-
Cultural, economic and social sustainability

Critical for rural villages transition to alternative sources of energy providing:

• Financial benefits keeping more money in villages
• Increasing economic development opportunities
• Increasing human capital
• Potentially slowing the rate of rural to urban migration
Contact

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