Economic Evaluation of Renewable Energy Projects

Sean Skaling, Deputy Director, Alternative Energy and Energy Efficiency

DOE Indian Energy Conference, Anchorage, Alaska
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REF Project Evaluations at AEA

- Renewable Energy Fund provides a major benefit to the state by evaluating applications on a level playing field
  - Also, saved 12.9 million gallons last year
- Honed and crafted over 7 years of annual applications
- Selected good projects

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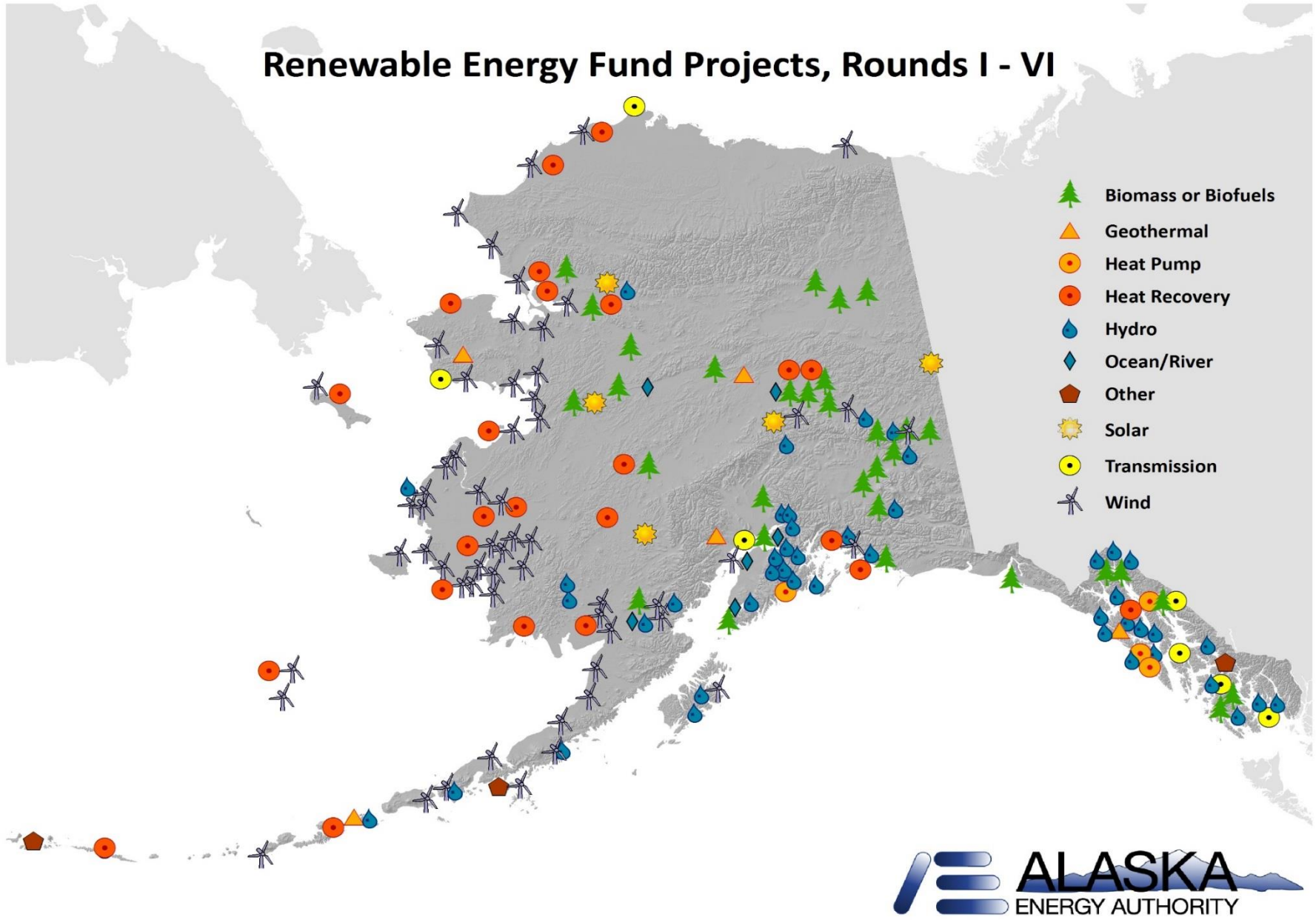
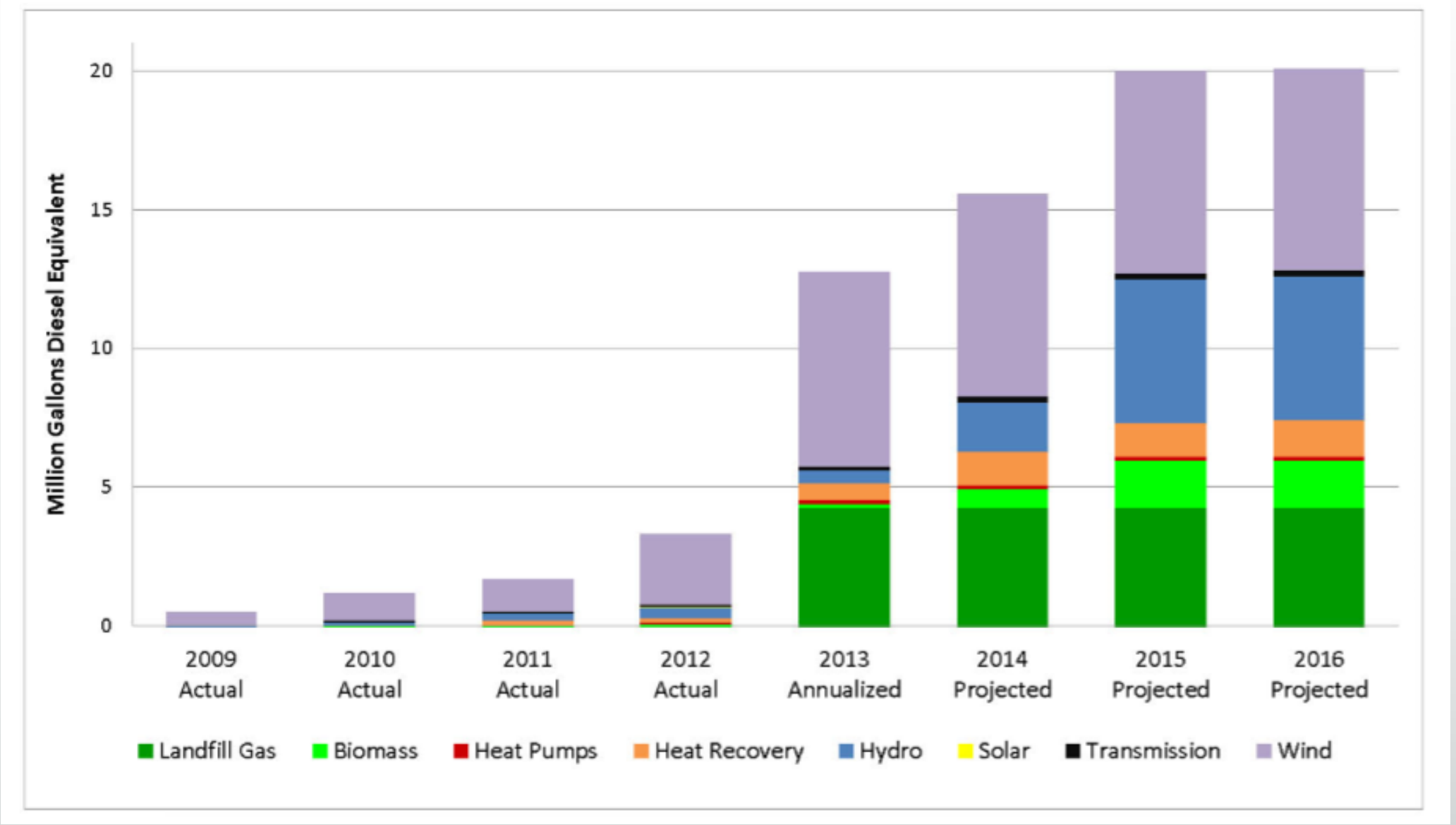


Statewide Impacts

Renewable Energy Fund: Annual Fuel Savings

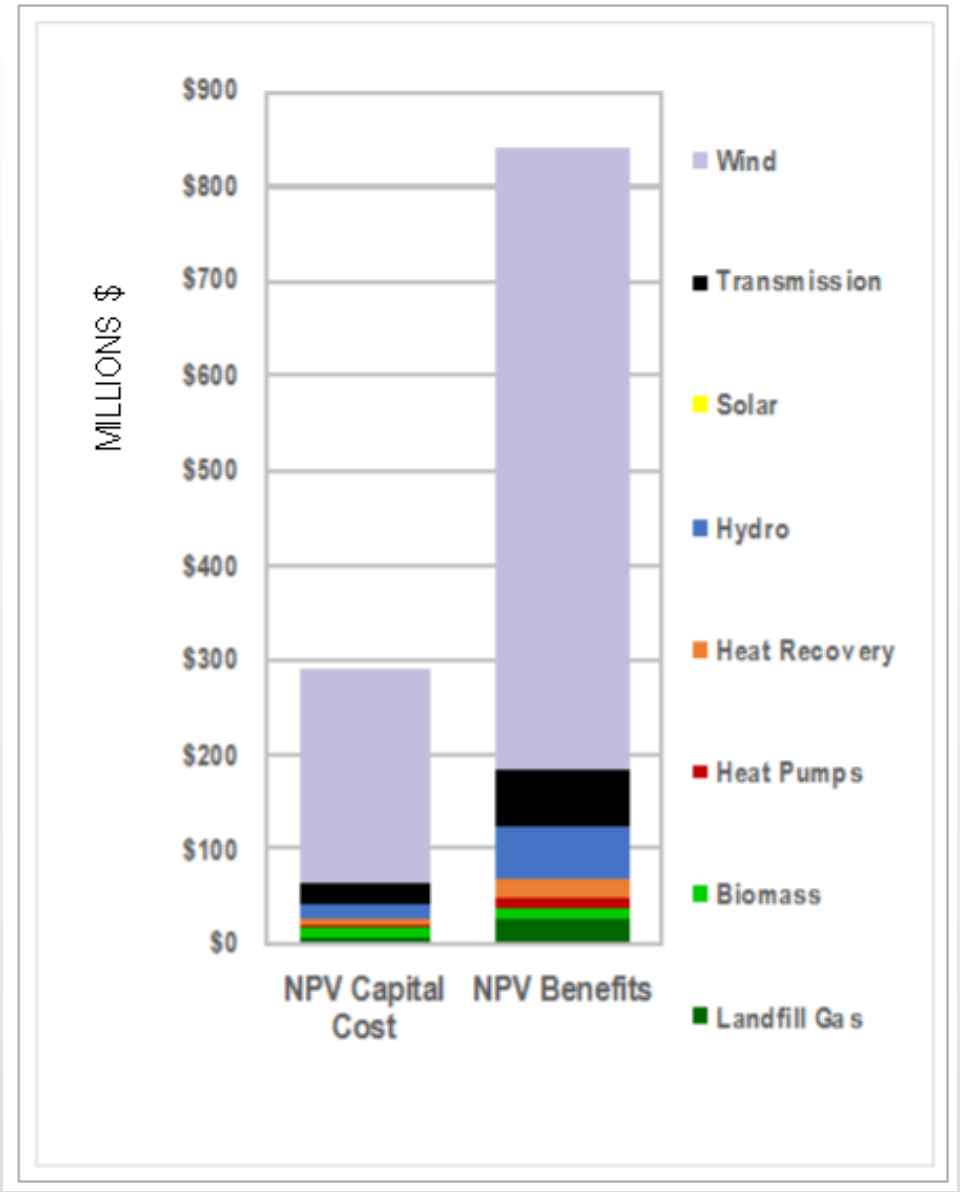


Renewable Energy Fund: Value Generated

- For first 36 projects in operation
- Fund Investment of $82M
- Total NPV cost of $290M
- NPV Benefits: $840M

NPV Benefits/ NPV Costs

2.9



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Four-Stage Review

- Stage 1: Eligibility, completeness, commitments
  - Pass/fail
- Stage 2: Technical and economic evaluation
  - Minimum score required to advance
  - Partial funding may be recommended
  - Special provisions may be made
- Stage 3: Project ranking
  - Based on criteria
- Stage 4: Regional spreading

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Stage 2: Technical & Economic Evaluation

- Project management, development and operations
- Qualifications and experience
- Technical feasibility
  - Resource availability, permits obtainable
  - Site suitability
  - Technical and environmental risk evaluation
  - Energy system assessment
- Economic feasibility
  - Lifetime economic evaluation (B/C ratio)
  - Financing plan
  - Other benefits to Alaska public

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Stage 3:
Project Ranking

- Cost of energy (currently)
- Matching funds
- Feasibility (Stage 2 score)
- Project readiness
- Public benefits
- Sustainability
- Local support

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The Economic Evaluation

- Based on Benefit/Cost (B/C) ratio
- Lifetime benefits / lifetime costs
- Compares against base case
- Places all applications on level field
  - Includes price projections for fuel
  - Accounts for inflation
- Primary benefit: displaced hydrocarbon fuels

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The Economic Evaluation

- Economic model available with RFA in July
- In Excel, with instructions
- Demonstration of the model…

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Calendar for Round 8

DRAFT -- RFA will have final dates

- July 1, 2014 Request for Applications announced
- Aug. 22, 2014 Designs due
- Sept. 22, 2014 Application deadline
- Sept 23-25, 2014 Rural Energy Conf.
- Jan. 6, 2015 REF Advisory Committee
- Jan 29, 2015 AEA makes recommendations to legislature

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Community Assistance

- Contact community assistance staff or project managers for guidance and ideas
- Also available:
  - Economists to help with model
  - Grants staff
  - Finance staff
  - Directors
- We're seeking the best applications possible!

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Handouts

- Round 7 Recommendations list
- 2014 REF Status Report
- Energy Atlas

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New This Year

- Deeper economic evaluations
- Better base-case
- Improved O&M and R&R estimates

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Kodiak's Terror Lake Hydro

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Kodiak's Pillar Mountain Wind

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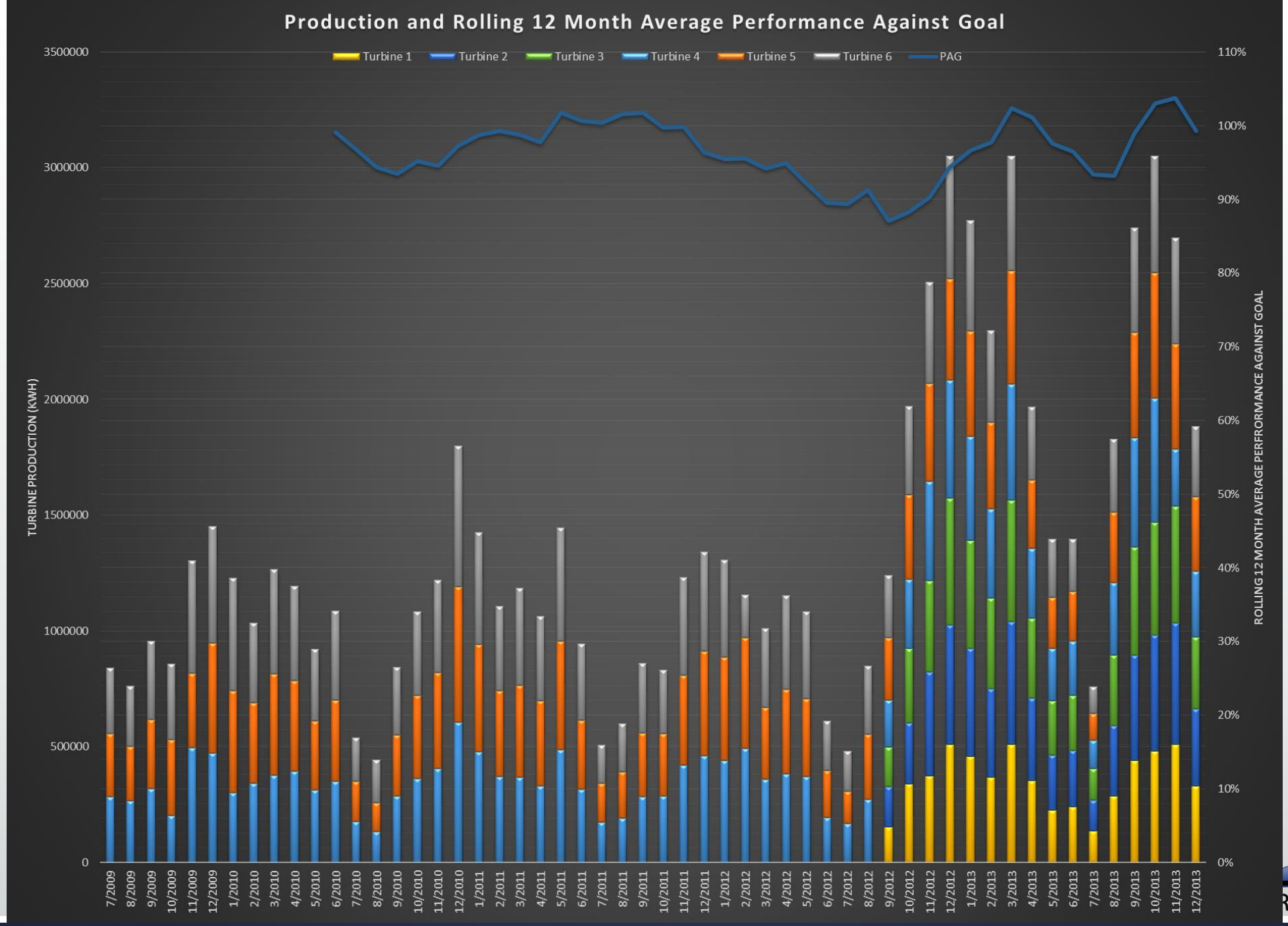

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Pelican Hydro Before, During & After

- Wood stave and blue tarp penstock before
- Aerial view of site during construction
- AEA project manager with new surge tank

Unalakleet, Alaska

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Heat Exchanger

Delta Junction Biomass

- High-efficiency, low-emissions wood chip biomass heating system in school
- Wood chips from Dry Creek Saw Mill waste product
- Funding $2 million grant/$2.8 million total
- Simple Pay Back: 13 years for Renewable Energy funds,19 years on total cost
- Successes:
  - During the first winter, saved $153,000 and 53,000 gallons in heating
  - Allowed the school to save 2 teacher positions, reopen music program and remodel the school kitchen
  - Potential to add additional facilities
  - Easy maintenance

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Thank you. Questions?

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St. Paul Island Wind

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