

ALASKARENEWABLES

The background of the slide features a serene winter landscape. Two large wind turbines are visible, their blades slightly blurred to suggest motion. They stand tall above a dense forest of evergreen trees heavily laden with snow. The sky is a soft gradient of blue and orange, indicating a sunset or sunrise. The overall tone is clean and sustainable.

Working to harness the vast potential of renewable energy to deliver a transformative, clean, sustainable, reliable, and cost-reducing energy supply for Alaska.

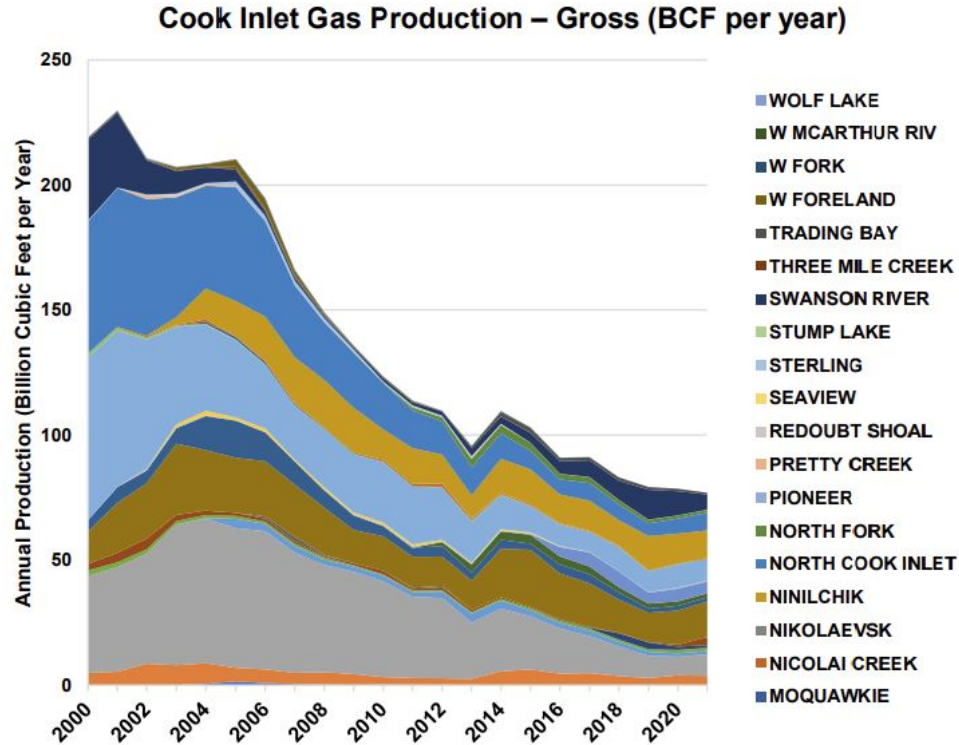
Our Approach

- Community-centered
- Solution-oriented
- Technology-agnostic
- Engineering-first
- Committed to collaboration

Andrew McDonnell
Vice President

Natural Gas Production in Cook Inlet is in Decline

Driven by the economics of new gas development in a depleted basin



Note: State + Federal + Private Lands

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Energy

Railbelt utilities again scramble to fill expected Cook Inlet gas shortages

Senate group briefed on future of Cook Inlet gas

Demand for Cook Inlet gas could outpace supply as soon as 2027

By [Ashlyn O'Hara](#) • February 9, 2023 2:30 am

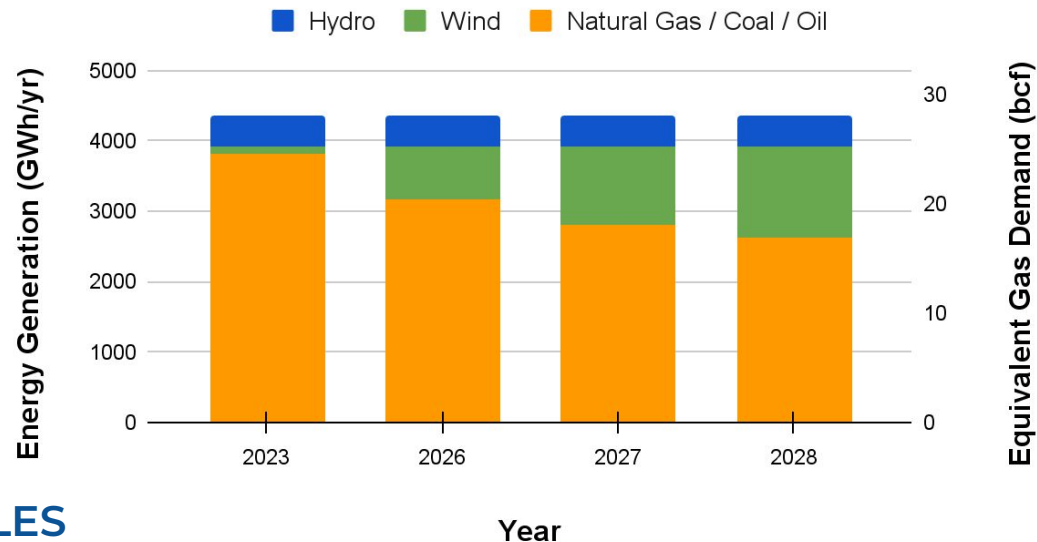
Tags: [Alaska Legislature](#), [Homer Electric Association](#), [news](#), [State News](#)



Alaska's Wind Energy Deployment Opportunity

- Adding 400 MW of Wind Capacity could displace 8 billion cubic feet (33%) of natural gas demand per year
- Could be deployed by 2028
- Protects consumers from rising costs of energy

Railbelt Energy Sources



Why Wind Energy in Alaska?

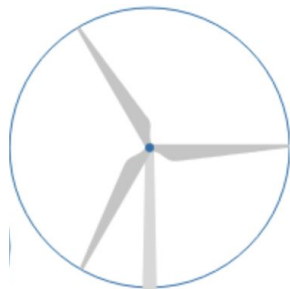
- Low cost of power
- Proven, mature technology
- Financeable
- Known, near-term development cycles
- Availability of resource
- Matches Alaska's winter peak loads
- Energy security



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Improved Efficiency and Reliability

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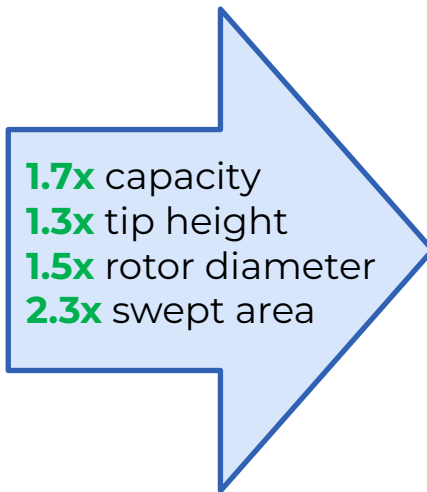
Eva Creek

2011 Technology

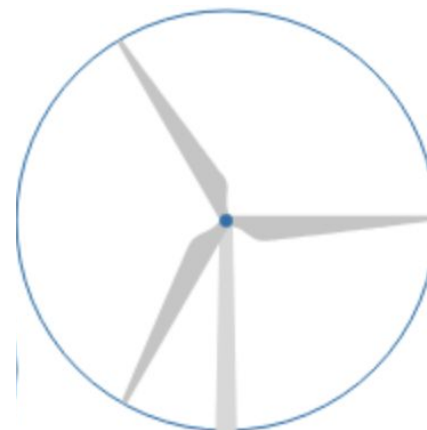
Senvion MM92

2.05 MW

80 m hub height
92.5 m rotor diameter
126 m tip height
6,719 m² swept area
(1.2 football fields)



1.7x capacity
1.3x tip height
1.5x rotor diameter
2.3x swept area



New Wind

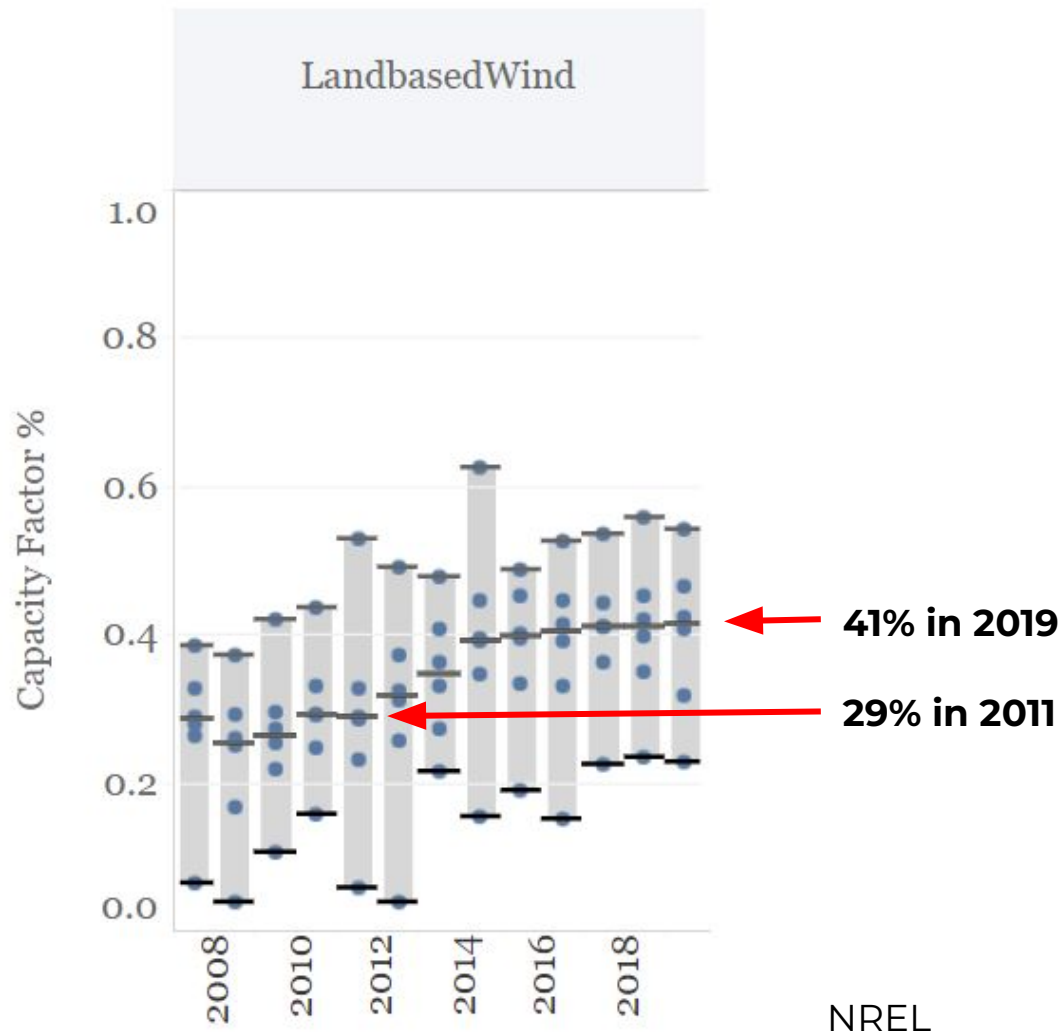
2025 Technology

GE 3.4-140

3.4 MW

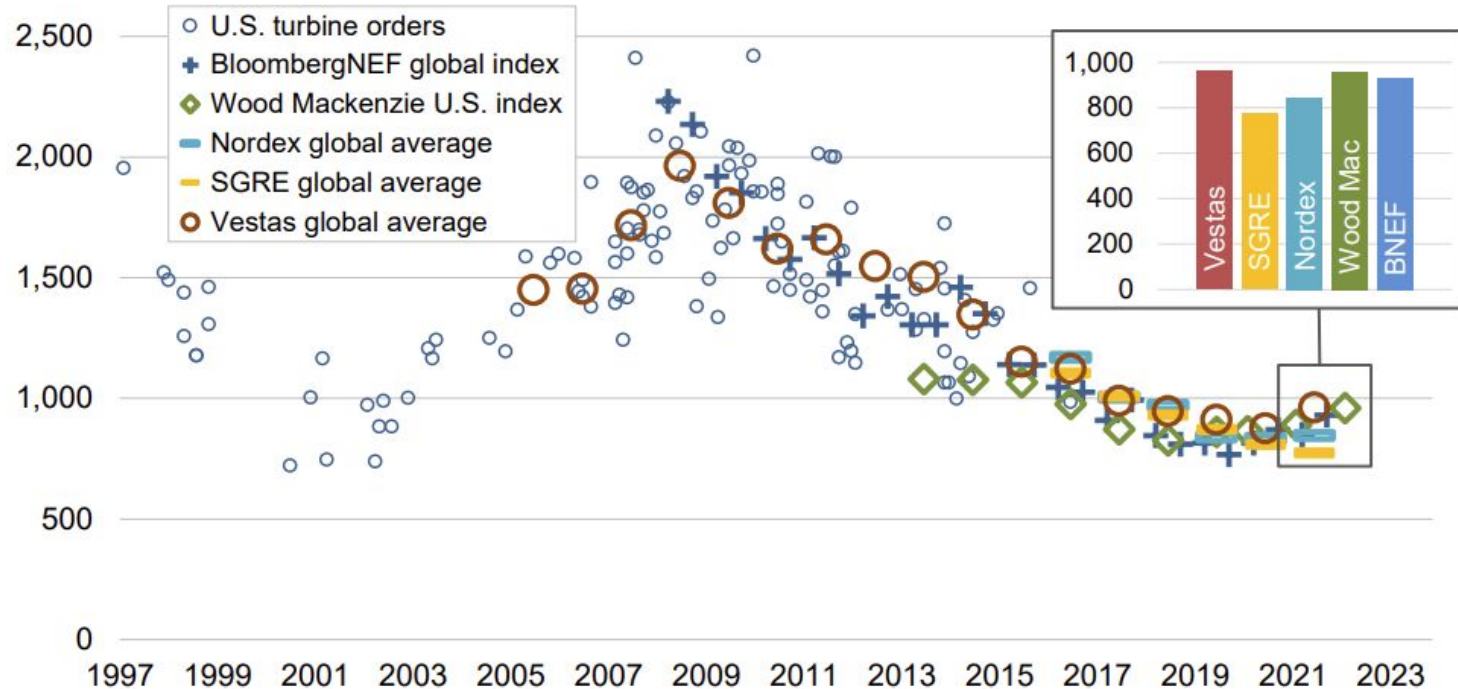
98 m hub height
140 m rotor diameter
168 m tip height
15,394 m² swept area
(2.9 football fields)

Wind Technology Has Become More Efficient



Cost of Wind Energy Has Declined

Turbine Price (2021 \$/kW)



Sources: Berkeley Lab, annual financial reports, forecast providers

Wind Energy Development Fundamentals

Market Assessment

Land Agreements

Wind Resource Assessment

Operations and Maintenance

Engineering

Construction

Procurement

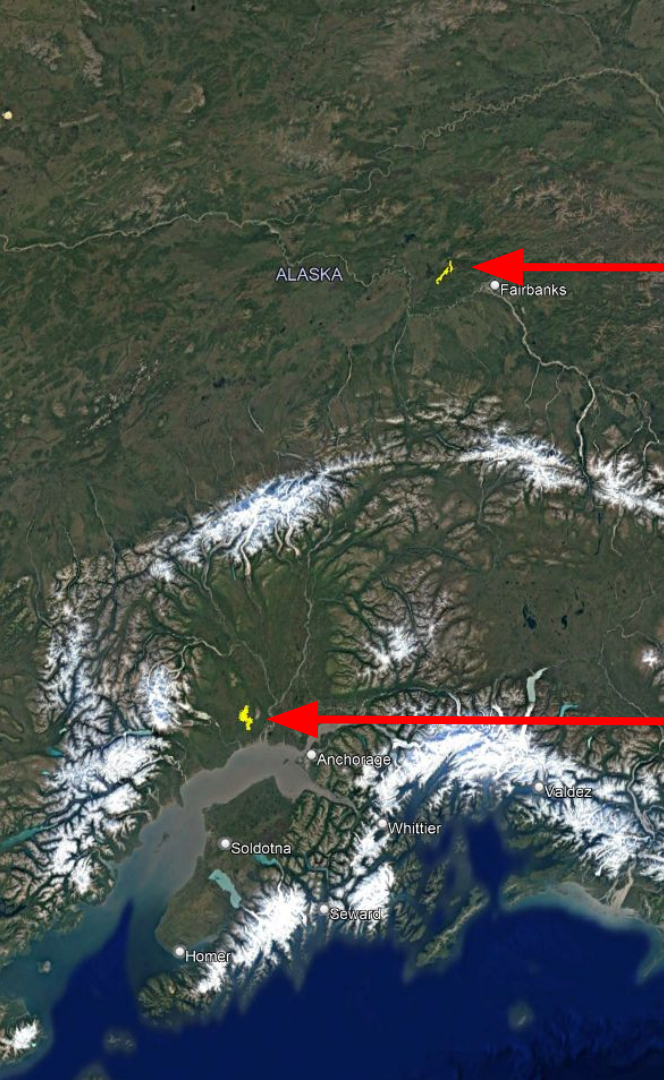
Financing

Permitting

Community Engagement

Power Purchase Agreements



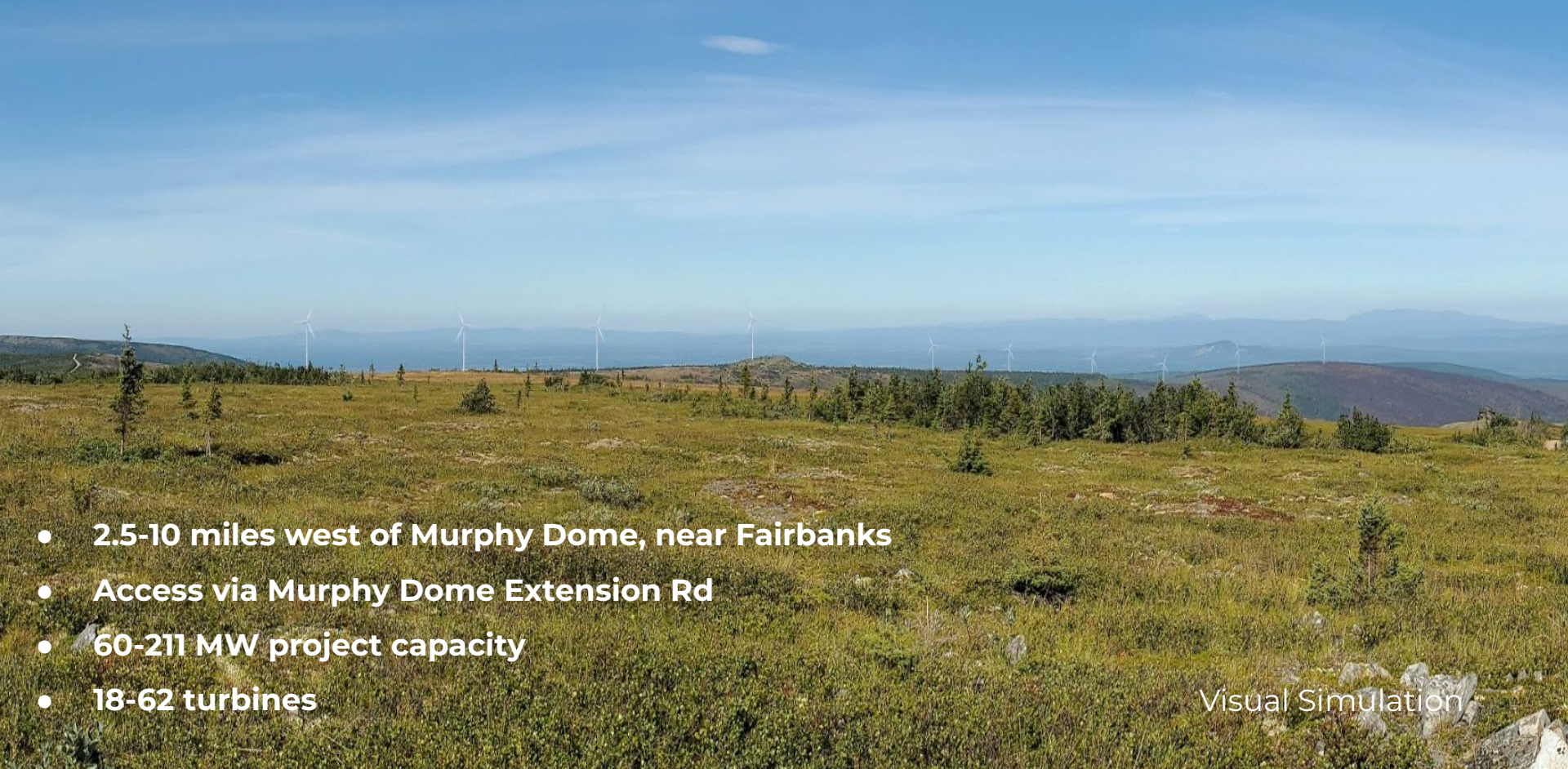


Shovel Creek Wind

Little Mount Susitna Wind



Shovel Creek Wind Project



- 2.5-10 miles west of Murphy Dome, near Fairbanks
- Access via Murphy Dome Extension Rd
- 60-211 MW project capacity
- 18-62 turbines

Visual Simulation

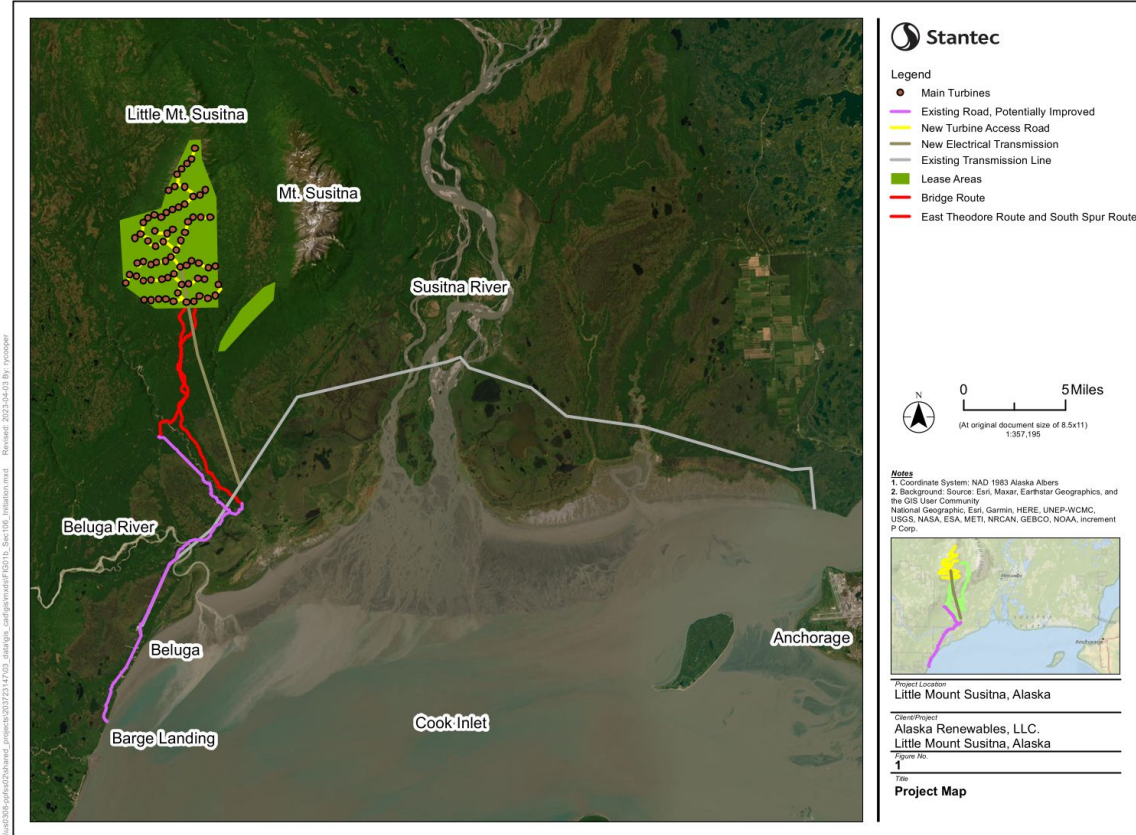
Little Mt Susitna Wind Project

- 40 miles WNW of Anchorage
- Access via barge landing in Beluga and existing gas roads
- 204 – 280 MW project capacity
- 45 – 62 turbines

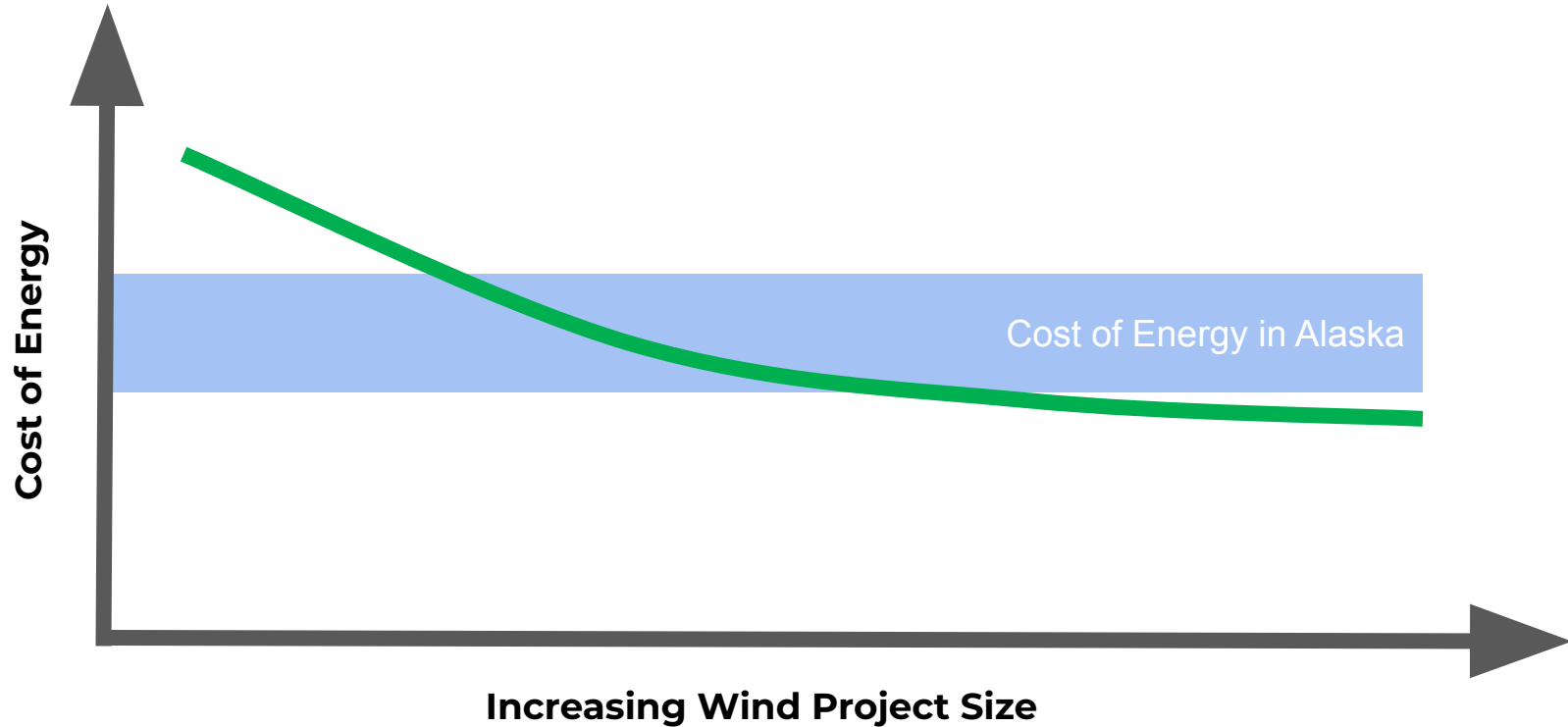
Little Mount Susitna Wind Project

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- Selected from CEA's 2021 renewable energy RFP
- Studies underway to assess feasibility and economics
- Lease under evaluation by DNR
- Environmental assessments and permitting work underway
- Wind resource assessment - meteorological towers and Lidar
- Preliminary engineering design and independent analyses
- Turbine suitability and selection
- Community and Indigenous engagement
- Commercial Operation of 2026

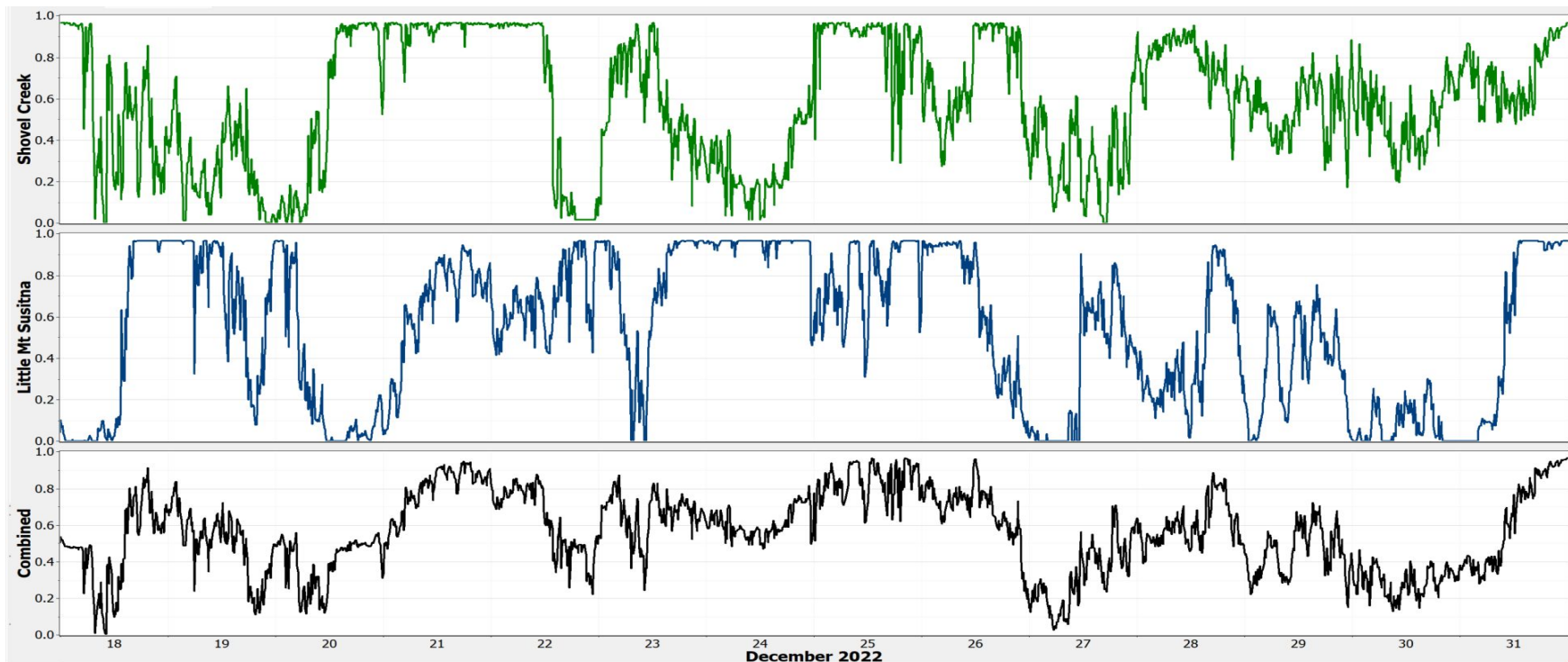


Wind Energy Economies of Scale



Diversified wind supply from multiple sites

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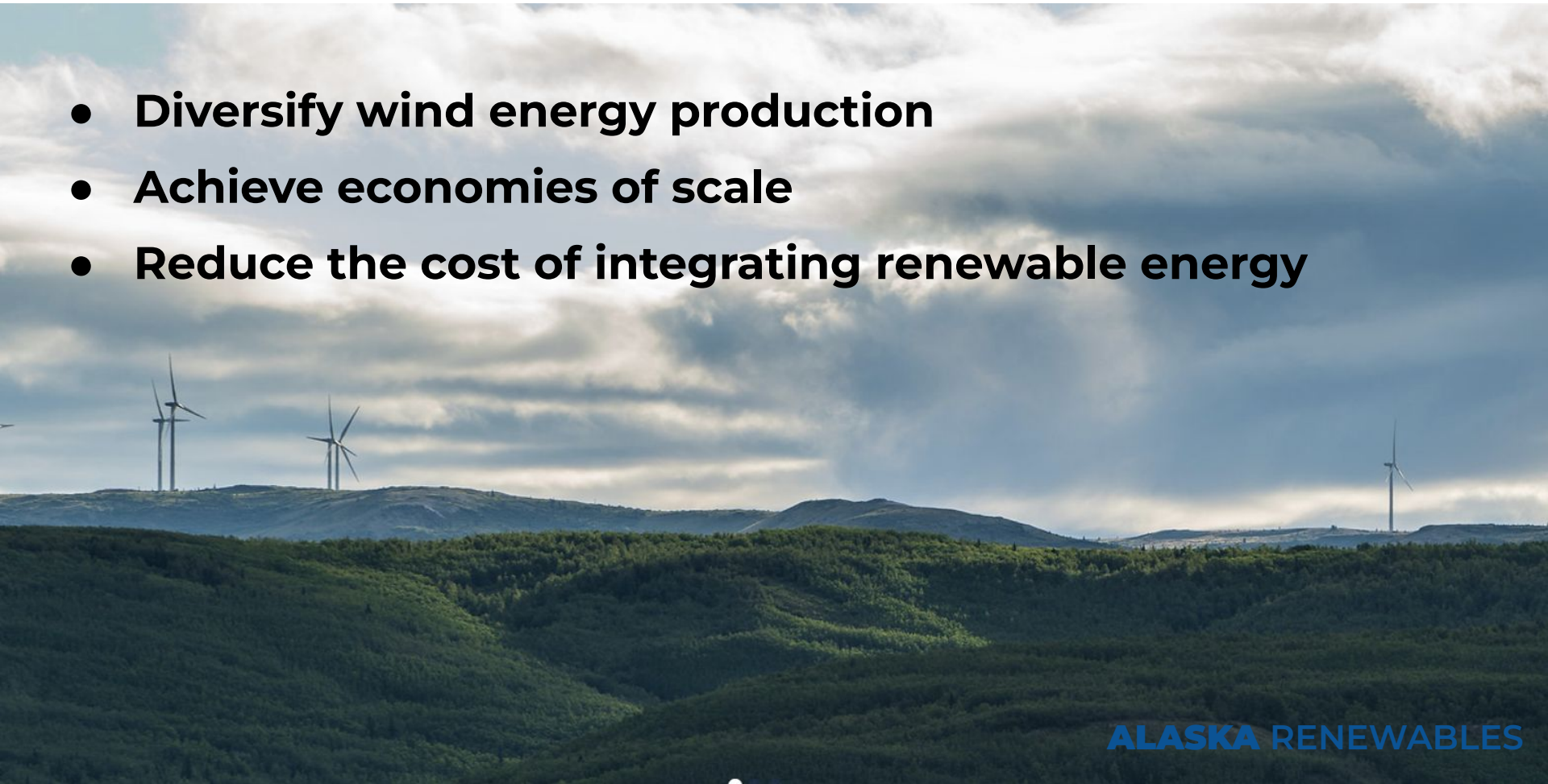
Less time at full/high wind production
Less time at zero/low wind output
Reduced ramp rates
Higher predictability



Less need for curtailment
More economic dispatch
Reduced need for energy storage capacity
Improved nomination of gas supply
Lower maintenance costs

Multiple Large Wind Projects would:

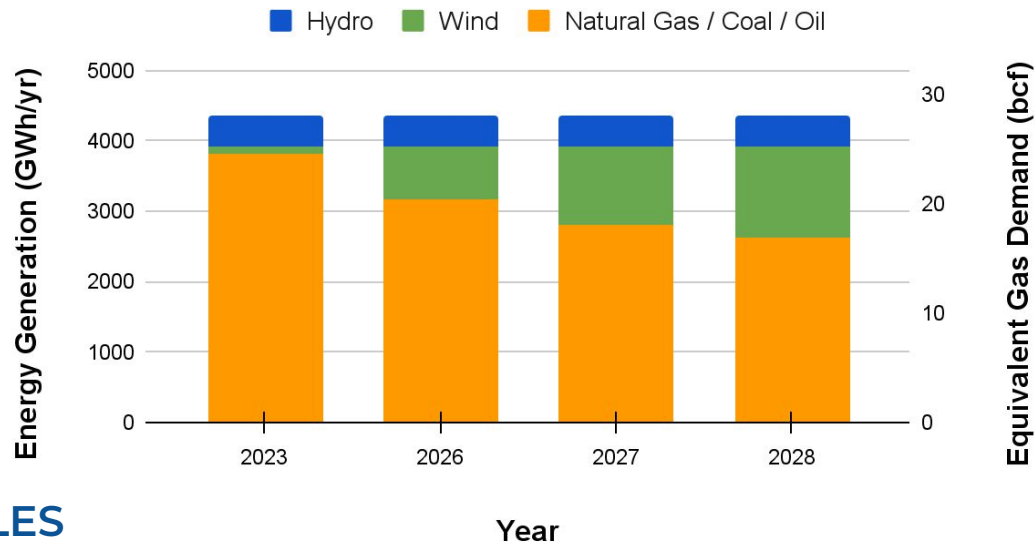
- **Diversify wind energy production**
- **Achieve economies of scale**
- **Reduce the cost of integrating renewable energy**



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Why?

- Energy Security
- Protect Alaskans from rising cost of energy
- Jobs
- Attract private sector investment
- Participate in the energy economy of the future
- Improved health and environment

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**Alaska House
Energy Committee**
April 13, 2023