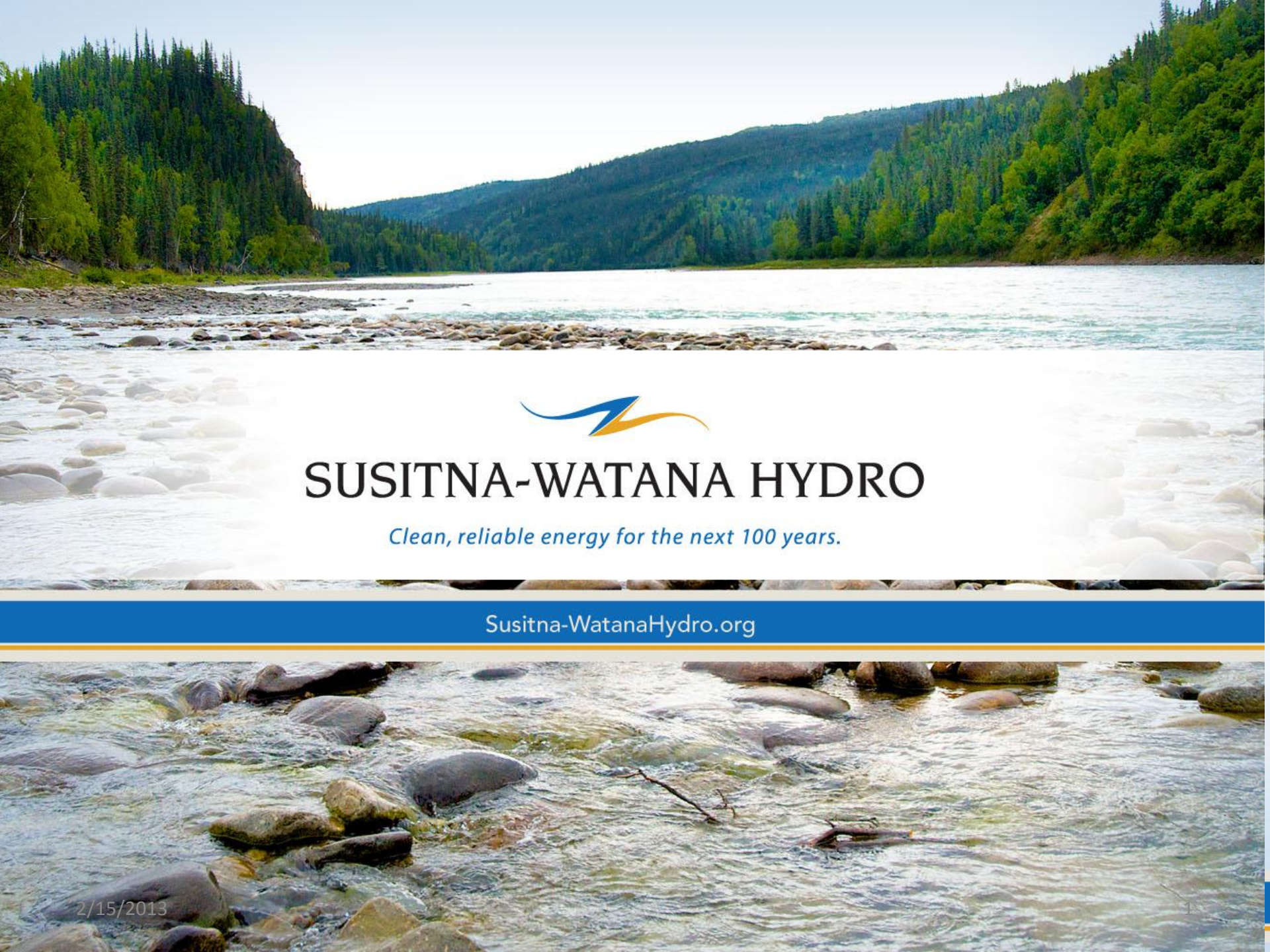
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Alaska Energy Authority

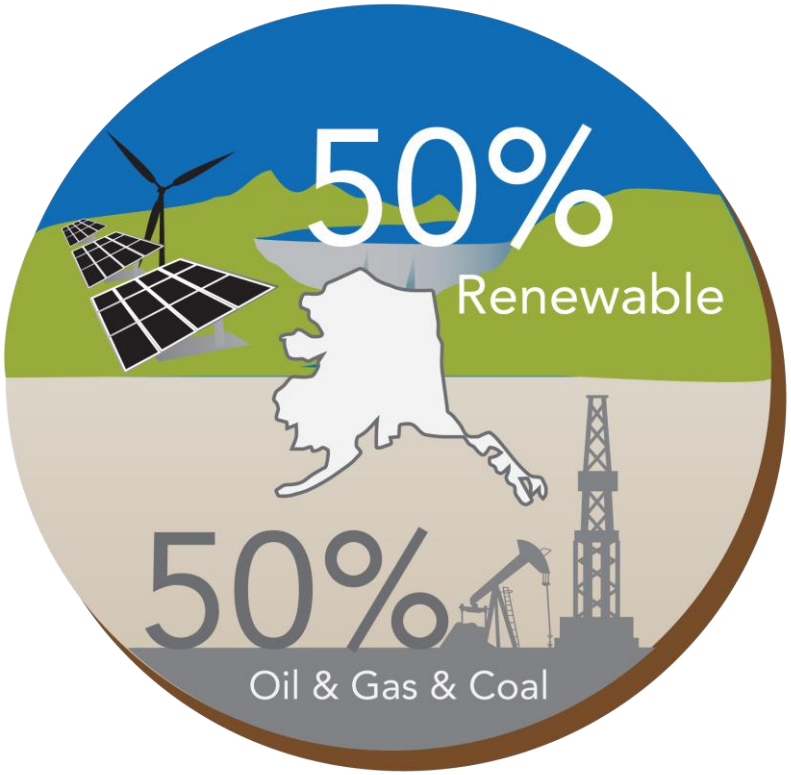
Mission: Reduce the Cost of Energy in Alaska

- Investing in Alaska's energy infrastructure
- Diversifying Alaska's energy portfolio
- Energy Planning and Policy
- Training and Technical Assistance

Alaska's Energy Challenges

- Varied energy costs by region
- Declining oil production / highly volatile fossil fuel costs
- Aging facilities
- Dispersed communities, no central grid
- Short and long-term solutions necessary

2025 Renewable Energy Goal



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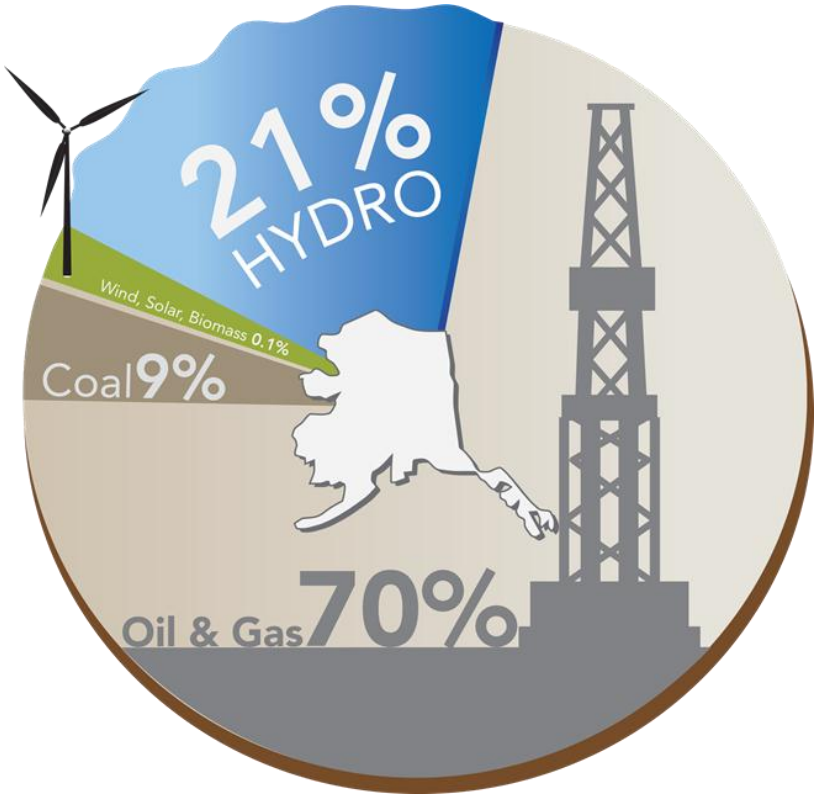
Alaska: Electricity Sources



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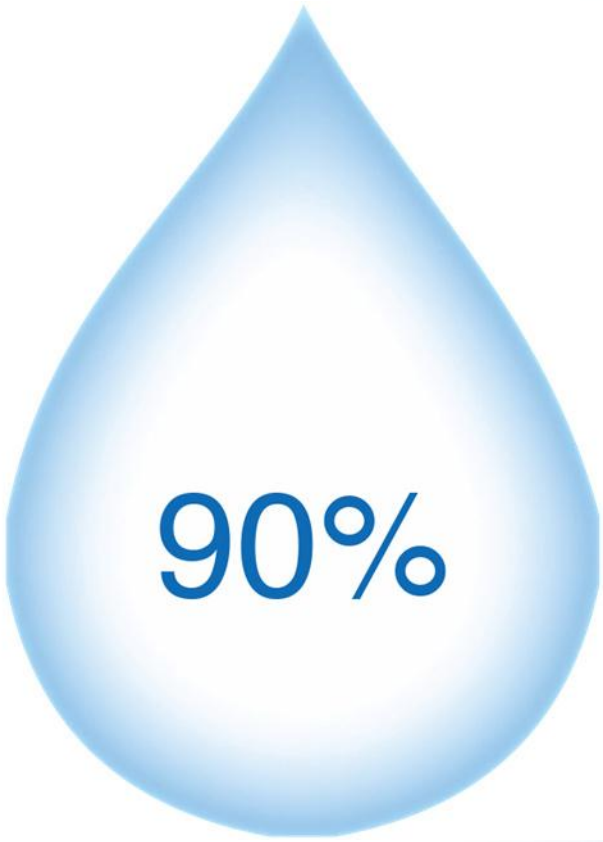
Renewable Electrical Power

Hydropower

all others 10%



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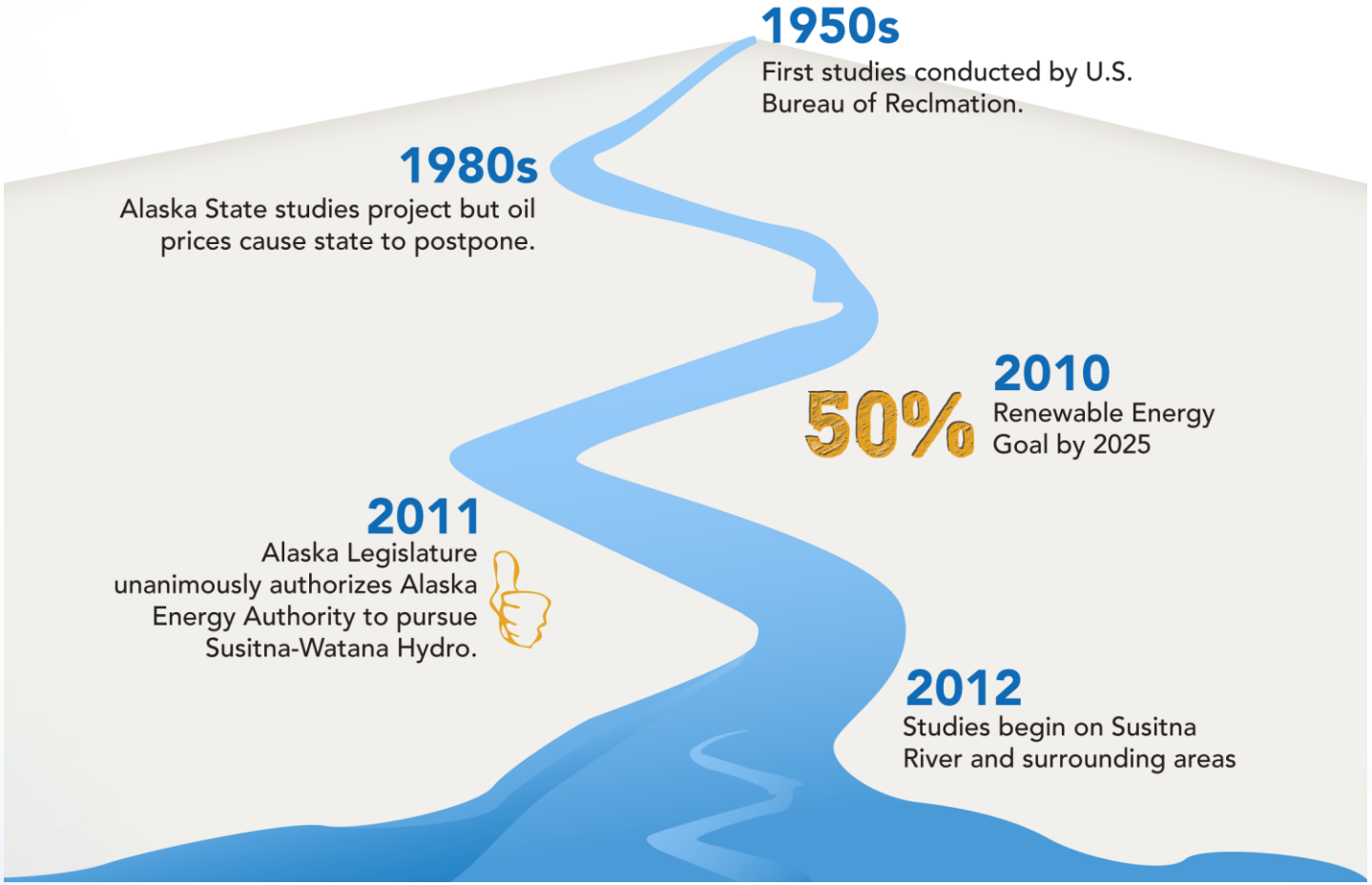
Susitna Hydro: History



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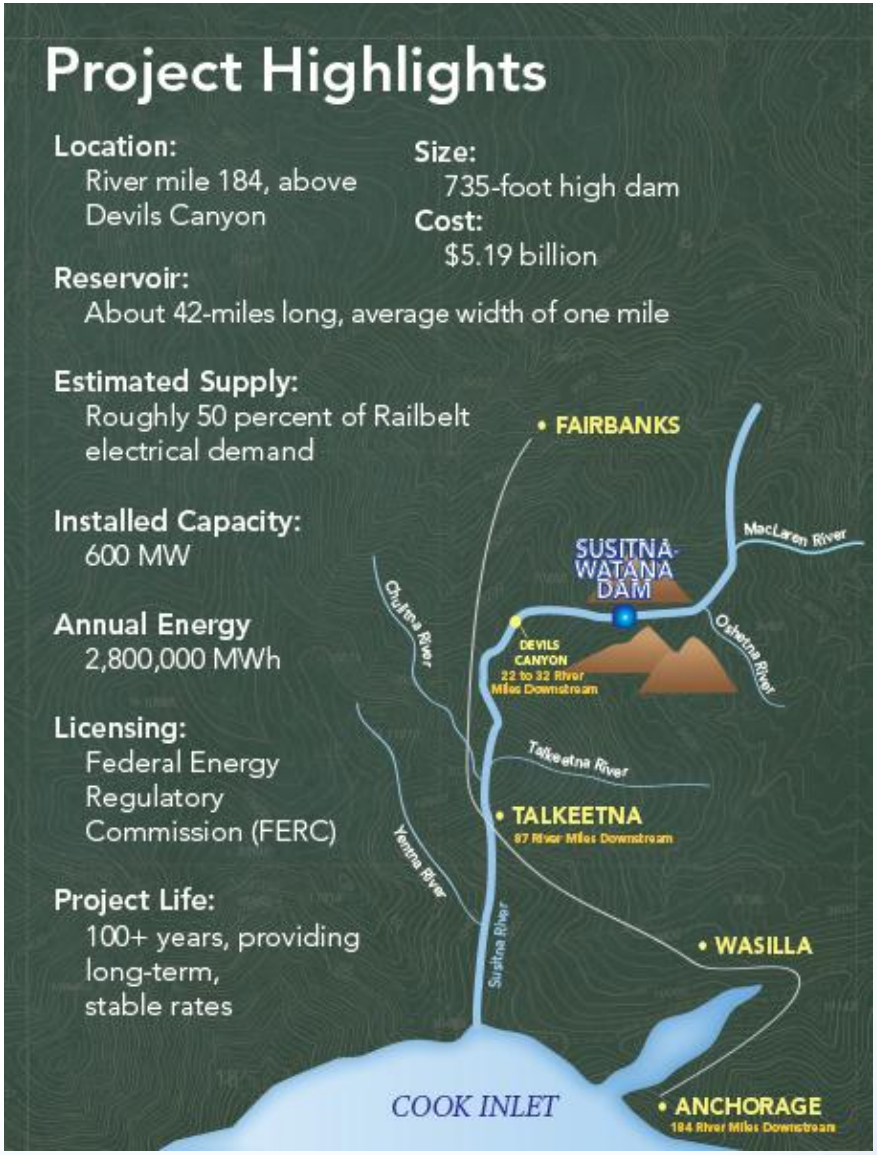
Why Susitna-Watana Hydro

- Serves ~80% of state's population
- 1,000 jobs during peak construction
- Stable electricity rates for 100+ years
- Long-term diversification
- Clean, reliable energy source
- Promotes integration of variable power sources

Project Highlights

- Susitna-River Mile 184
- 87 River Miles from Talkeetna
- 22-32 River Miles upstream from Devils Canyon
- ~50 percent of Railbelt's Energy Demand



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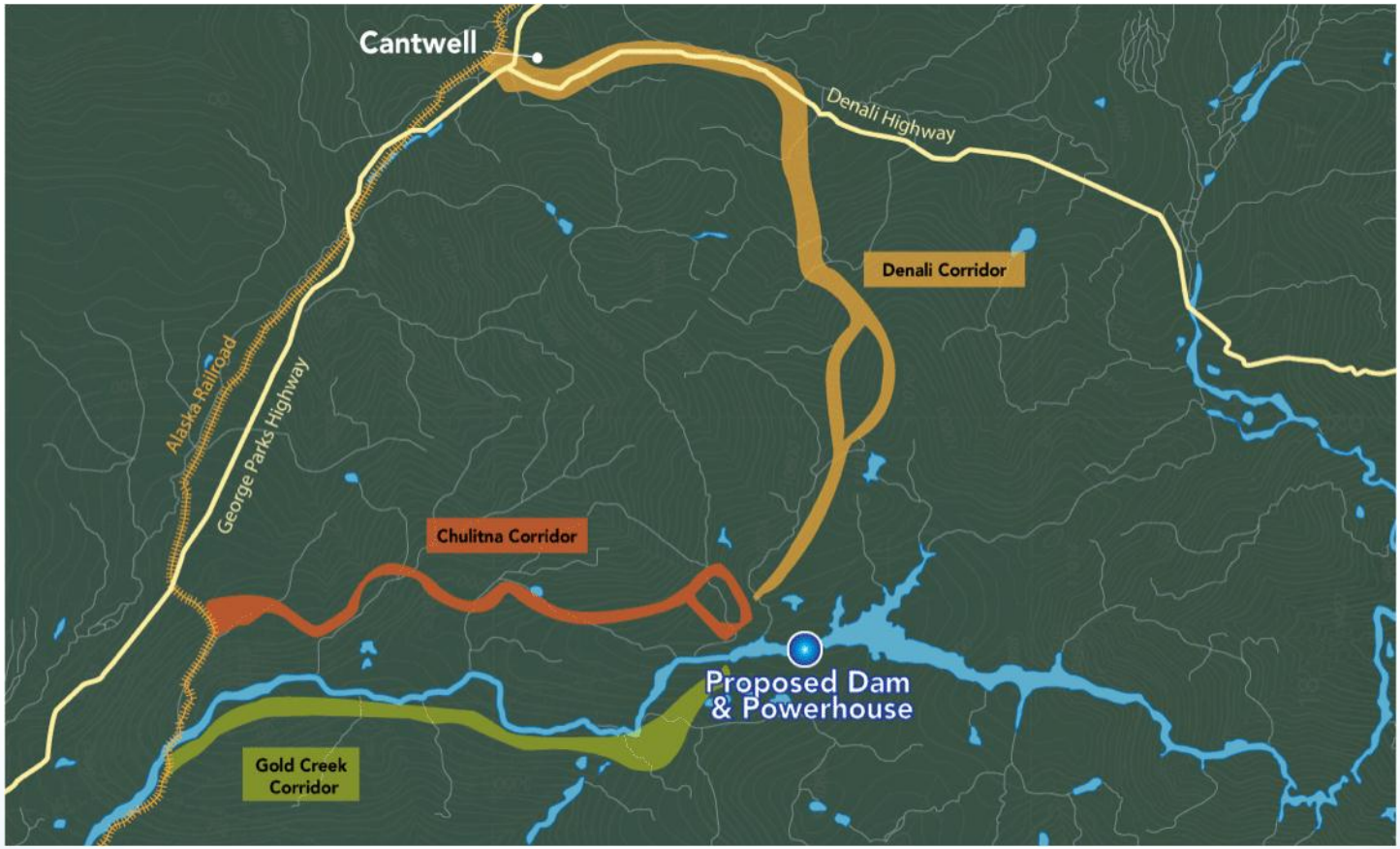
Access and Transmission Alternatives



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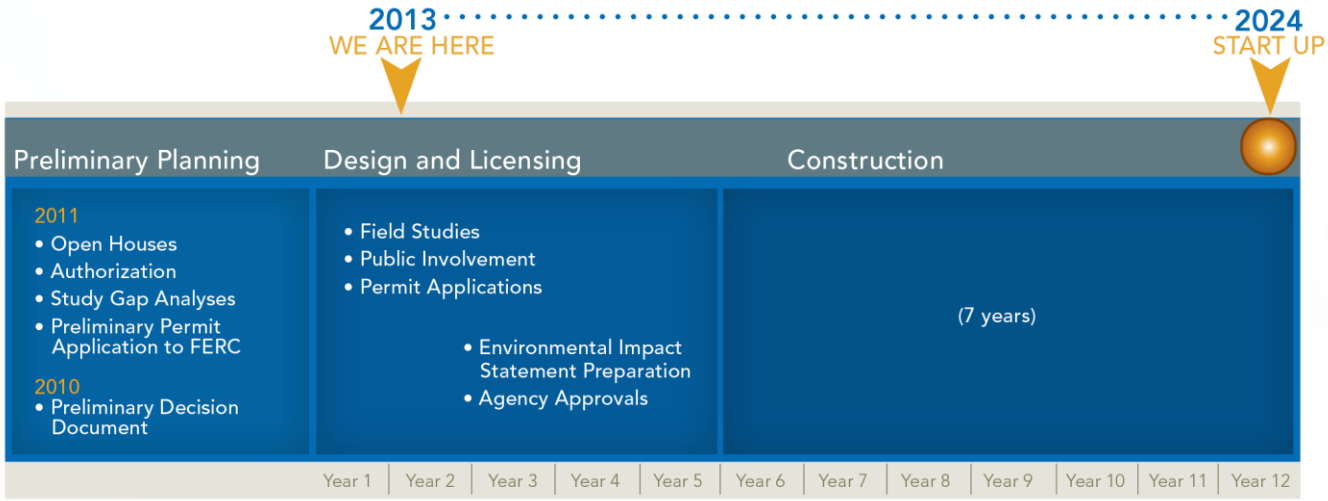
Project Timeline

TIMELINE



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Employment

- 385: Total individuals contracted to work on Susitna-Watana Hydro (Outside AEA)
- Majority of workers are Alaskans
- Hydropower licensing experience in the Pacific Northwest
- 180 individuals anticipated to be in the field 2013

Revised Study Plan

- Unprecedented effort
- Proactive approach
- 58 studies
- 186,000 acres

Susitna-Watana Hydro Environmental Program

- Early 2012 fieldwork, including important fish studies
- Development of a Revised Study Plan
  - significant stakeholder involvement
  - filed with FERC in 12/12
  - FERC Study Plan Determination on 44 studies 2/1/2013
  - FERC Study Plan Determination on 14 studies 4/1/2013

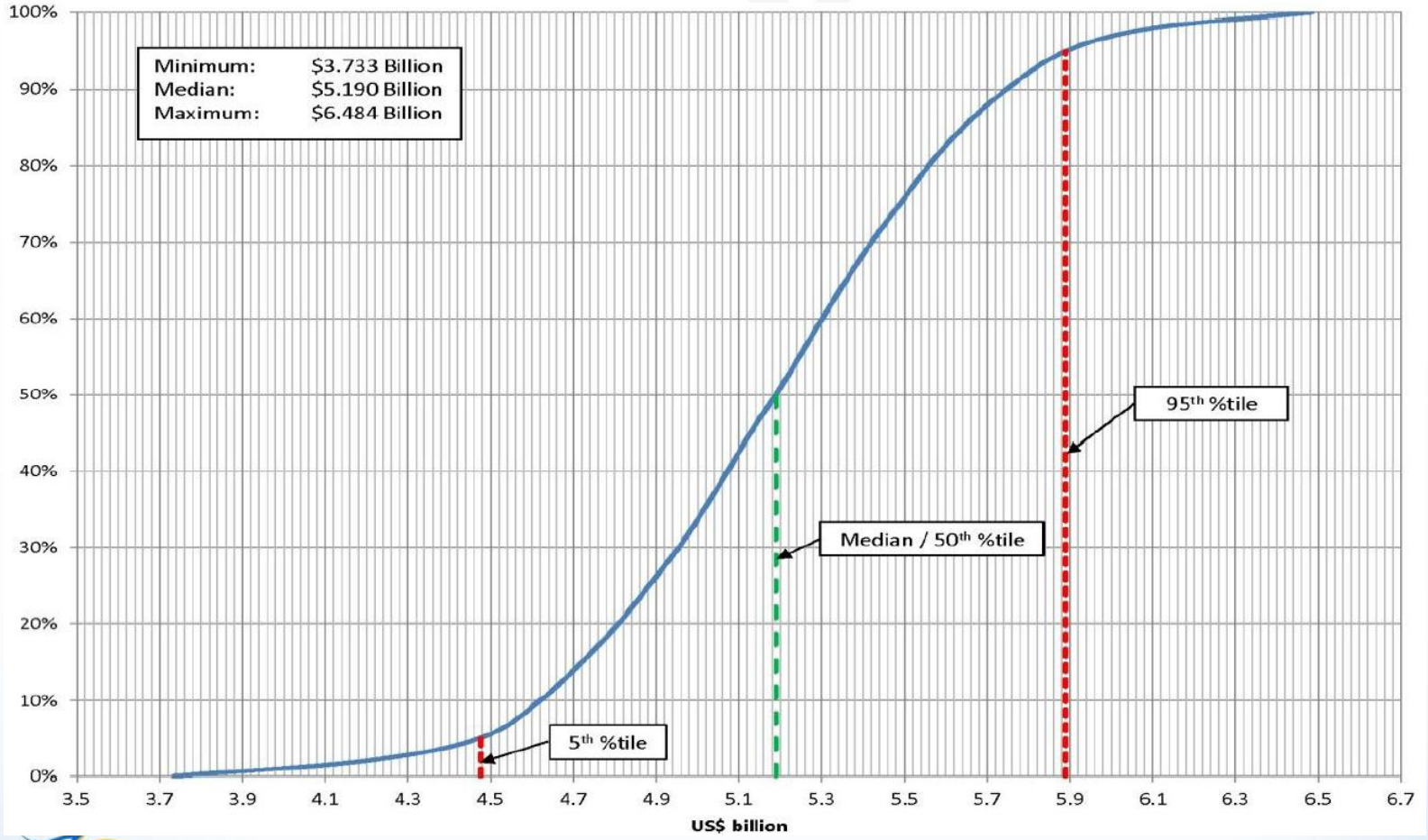
Susitna-Watana Hydro Additional 2012 Accomplishments

- Licensing progress and meeting milestones
- Synthesized historical 1980s information
- Engineering
  - Progress refining design models
  - Identified three potential access routes
  - Brought on panel of international experts as board of consultants
  - 2012 geotechnical fieldwork and surveying
  - Development of engineering and project safety study plans
- Independent Cost Estimate

Independent Construction Cost Estimate: Results

- AECOM tasked with unit-price estimate and independent construction schedule
- AECOM confirms
  - Feasible timeline
  - Roller-Compacted Concrete (RCC) dams constructible in cold climates
- AECOM recommends
  - Year-round construction
  - Consideration of early reservoir filling for early power generation
- Comparison between original and AECOM estimates within 9%
- Accuracy of the most probable estimate: -11% to +26%

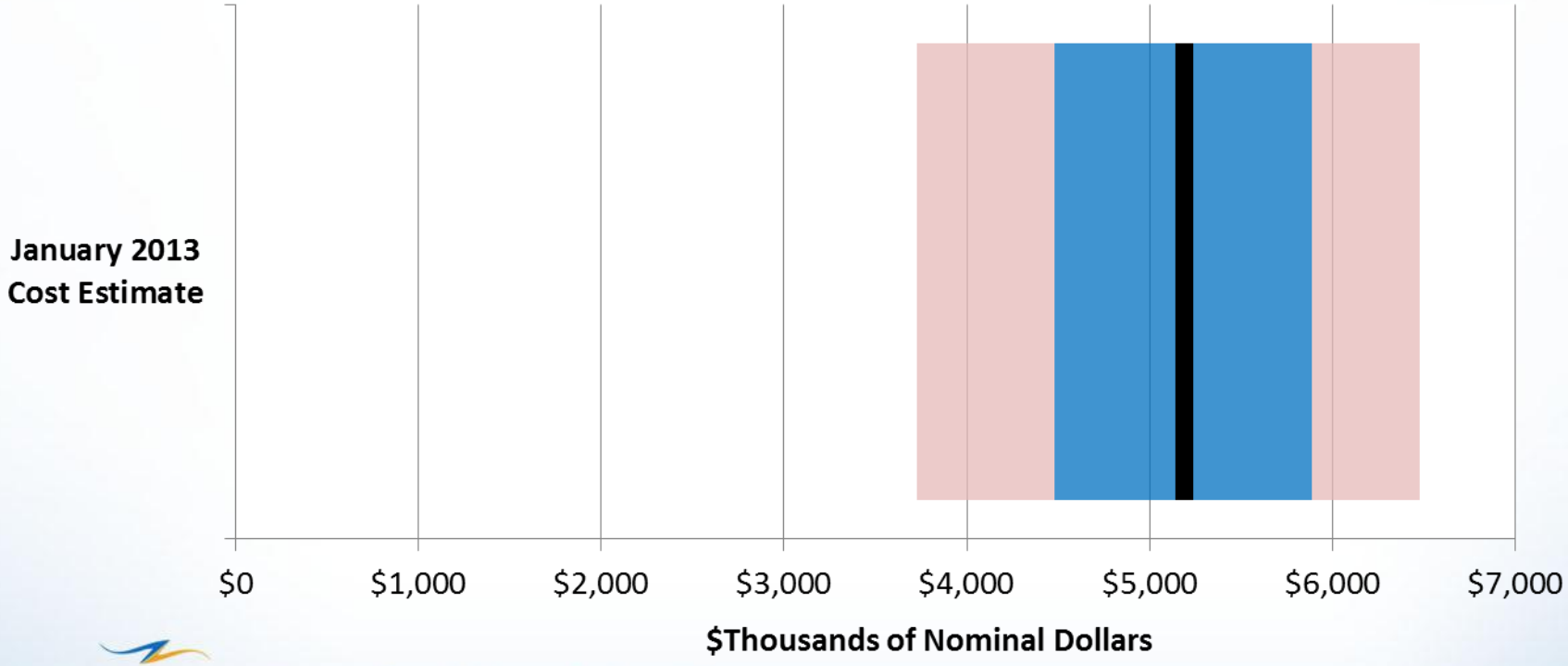
Probabilistic Range of Total Project Costs



Susitna-Watana Captial Costs

	Best Estimate	Low Estimate*	High Estimate*	Minimum Cost	Maximum Cost
January 2013	$5,190	$4,480	$5,890	$3,730	$6,480

**Low and High Estimates represent a 90% probability*



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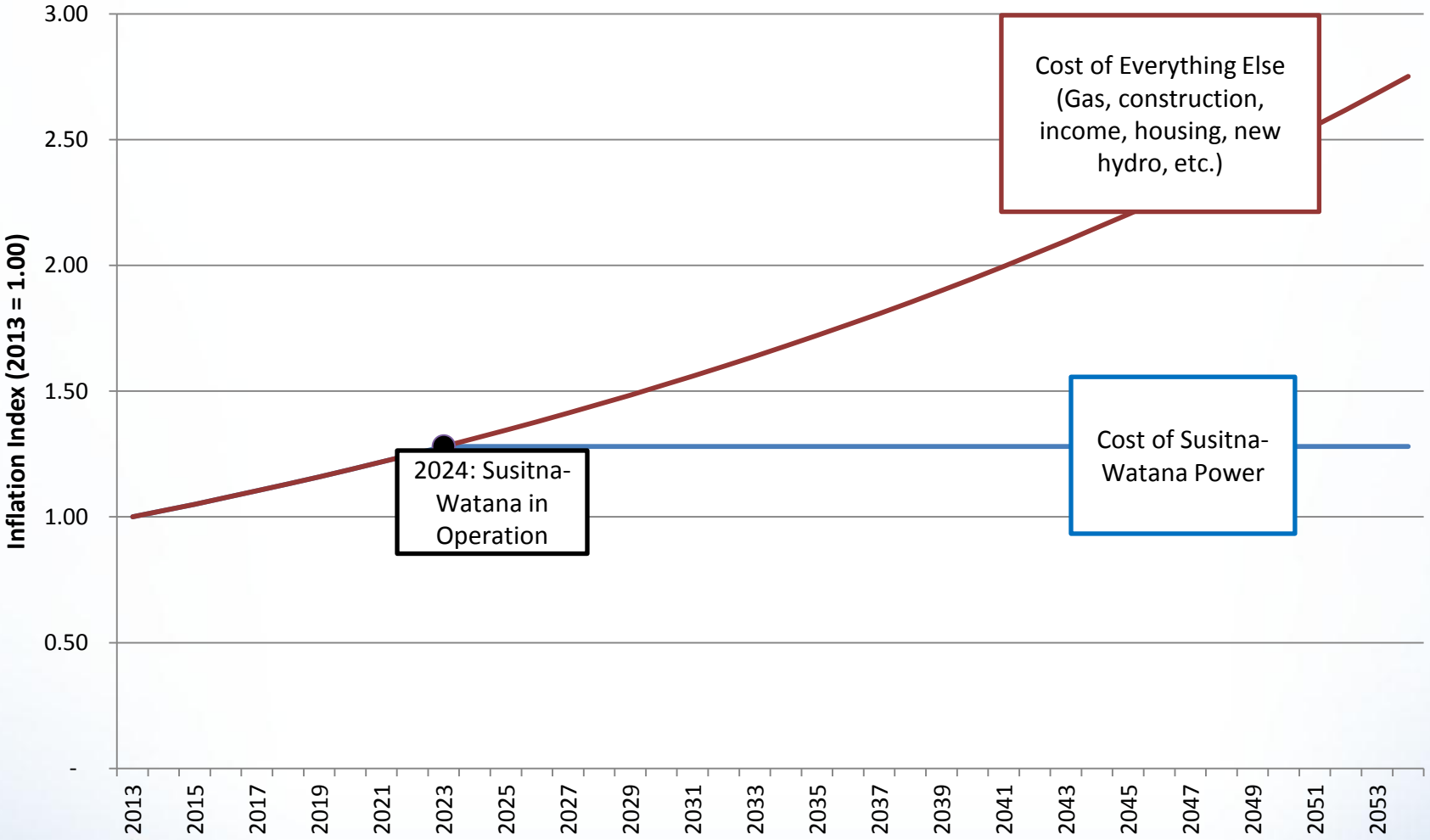
Impacts of Inflation on Susitna-Watana Power Costs



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Base Case Economic Assumptions

Capital Costs ($mill)	$5,190
Power Production (GWh)	2,800
Interest Rate	5.00%
Debt Term (years)	30
Annual O&M Costs ($mill)	$16
Operation Start Year	2024

Susitna-Watana Power Costs ($/kWh)

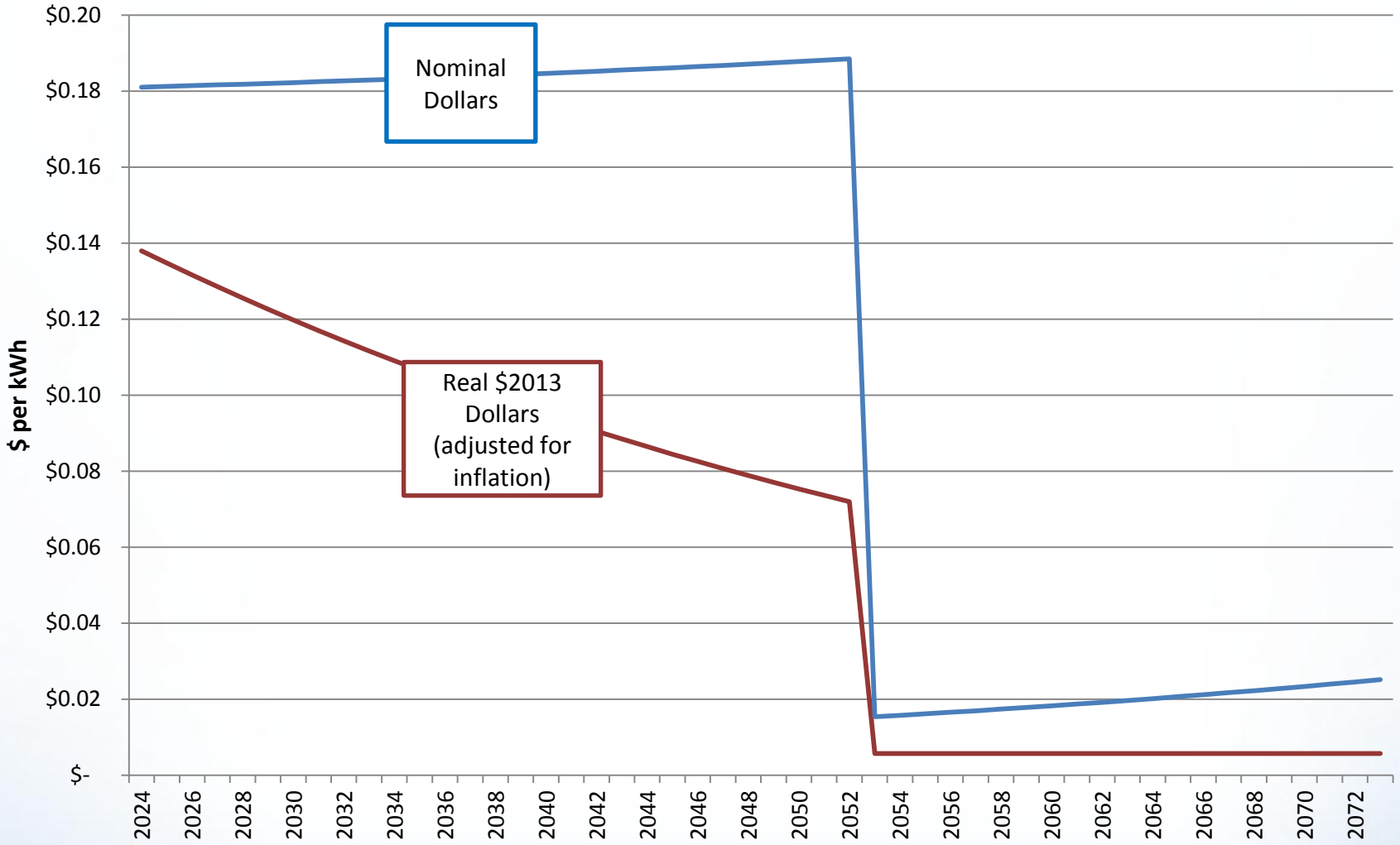
Year 1 Rate ($2024)	$0.181
Year 1 Rate ($2013 Real)	$0.138
10 Year Ave Rate ($2013 Real)	$0.124
25 Year Ave Rate ($2013 Real)	$0.106
50 Year Ave Rate ($2013 Real)	$0.061

Real= Adjusted for Inflation

Assumes no Direct State Financing

Susitna-Watana Power Costs: Real vs. Nominal

(Assumes no Direct State Financing)



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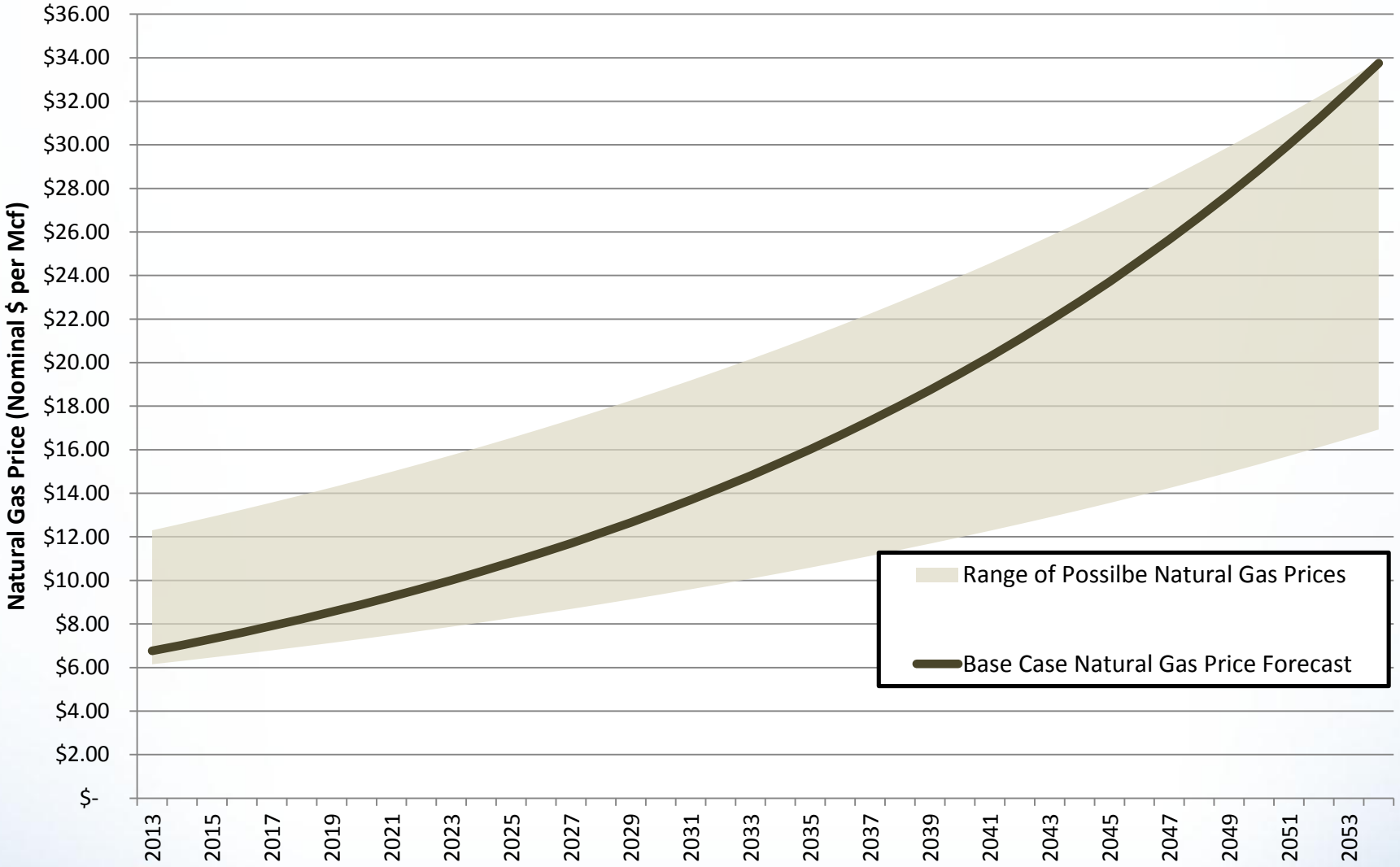
Natural Gas Generation Comparison

- Competitive with natural gas in the early years, much lower-cost over long-term
- Future natural gas prices are unknown
- Assume a constant efficiency and non-fuel cost for natural gas generation
  - Heat rate of 8,000 (Btu/kWh)
  - Non-fuel cost of $0.03 per kWh

Natural Gas Price Forecast

- A single forecast was needed for a “Base Case” comparison
  - $6.50 per Mcf in 2012
  - Increases at 4% annually (1.5% greater than inflation)
- Realistically, future natural gas prices are better represented with a range
  - Prices can range $6.00 to $12.00 per Mcf in 2013
  - Range increase with inflation (2.5% annually)

Natural Gas Price Forecast and Range



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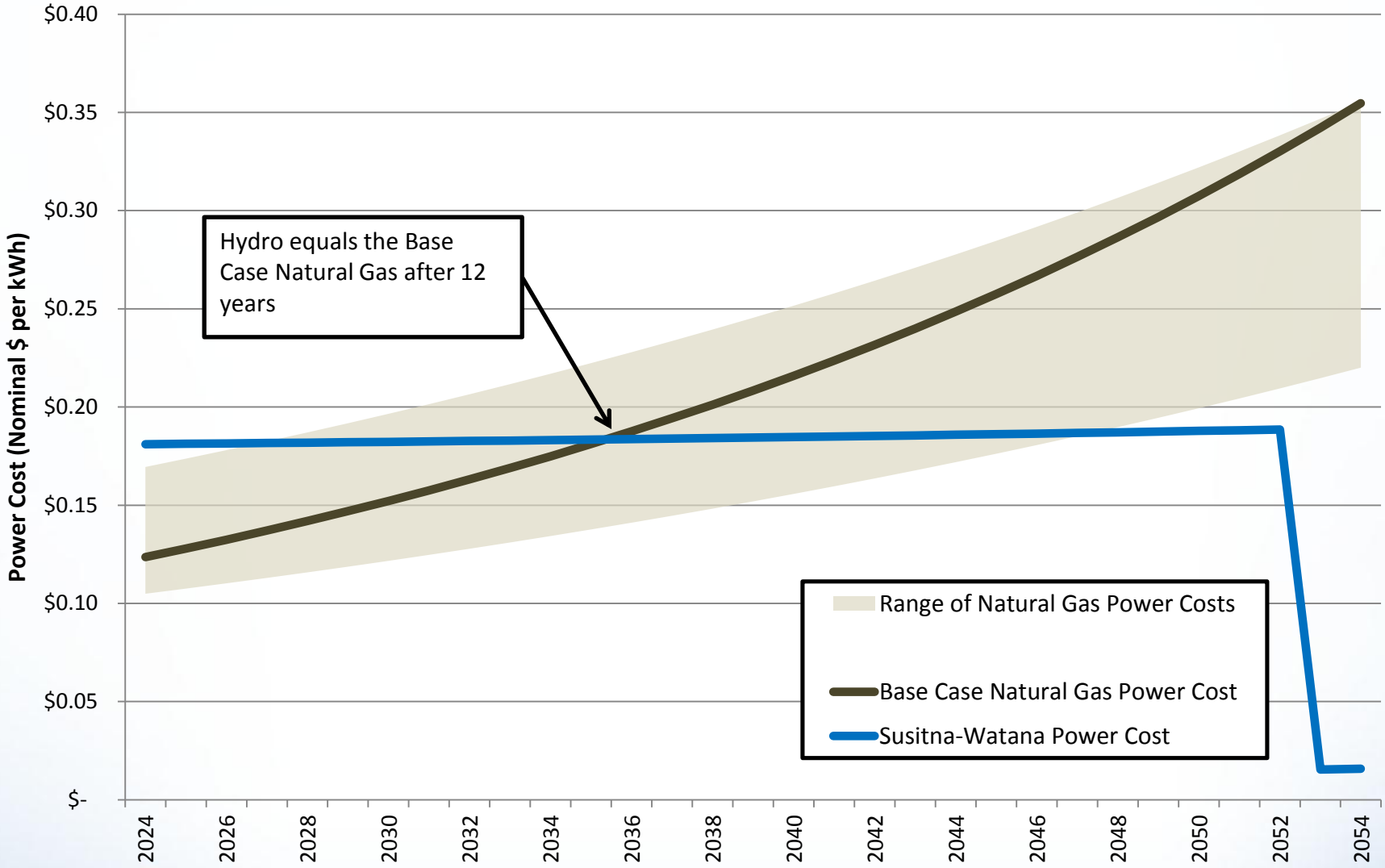
Susitna-Watana vs. Natural Gas Power Costs



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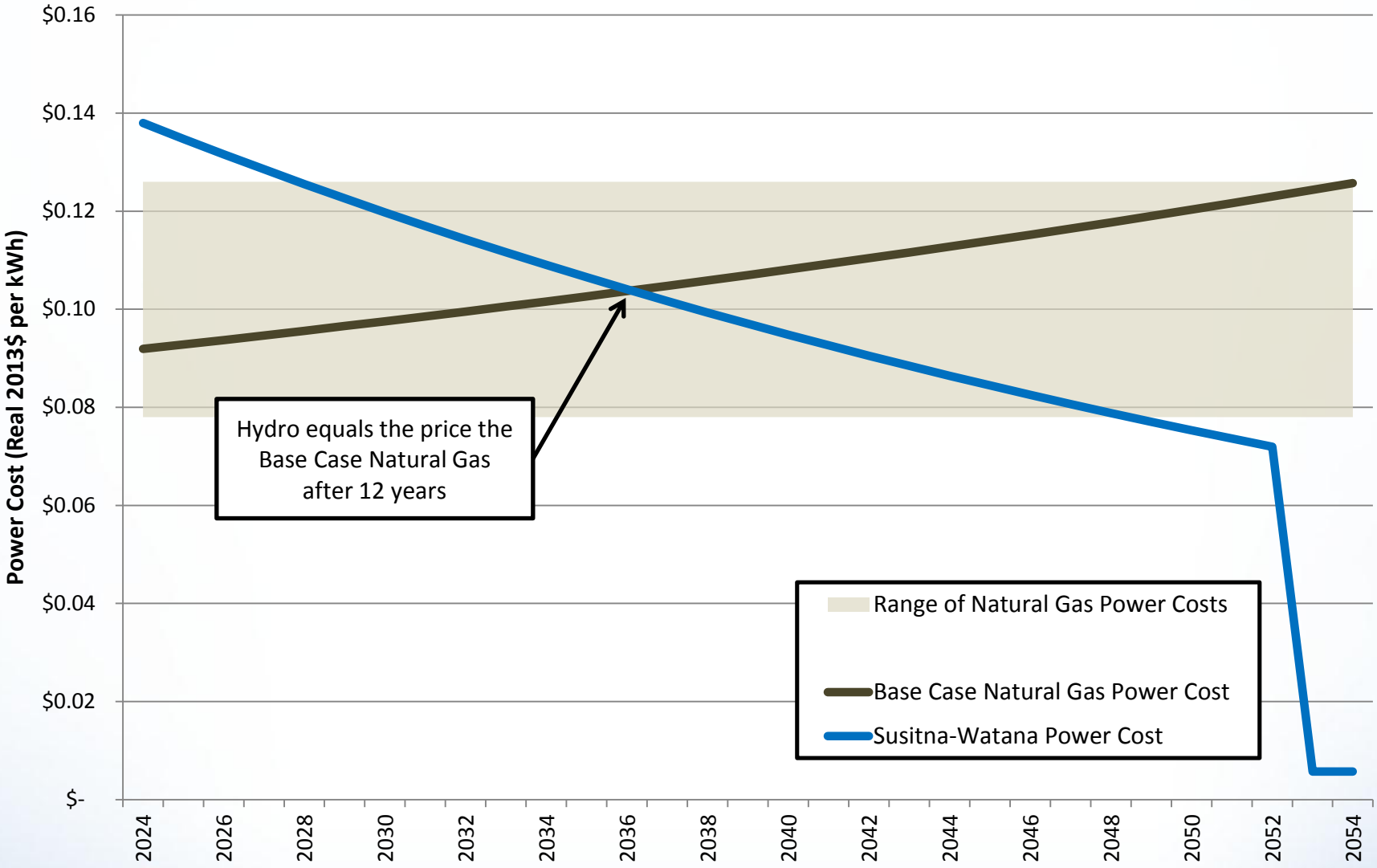
Susitna-Watana vs. Natural Gas Power Costs



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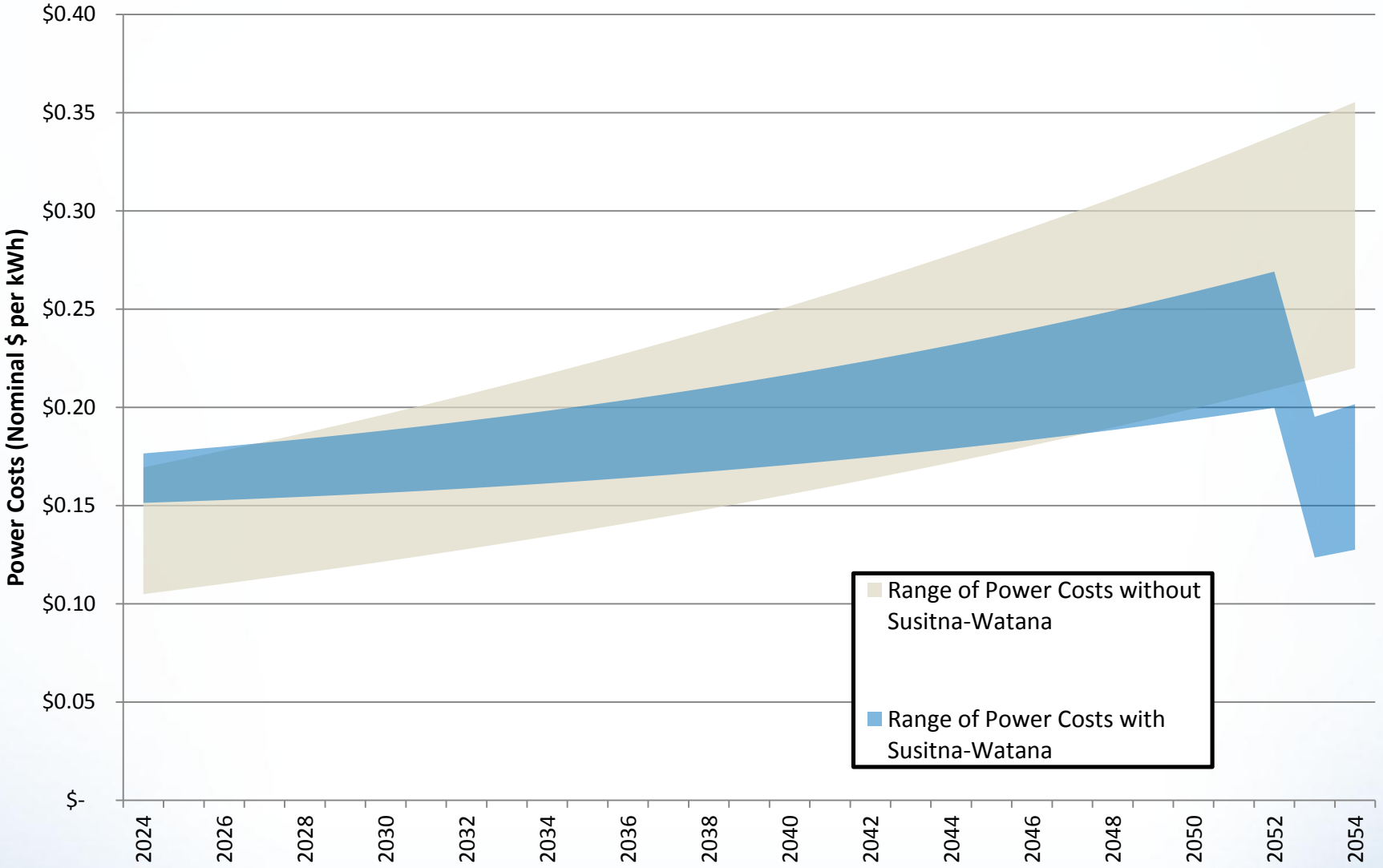
Susitna-Watana Hydro Reduces Power Price Uncertainty

- Hydropower reduces electricity price uncertainty and volatility
- Following chart compares the impact of the range of natural gas prices on the average power costs under two scenarios
  - First scenario assumes 100% natural gas generation
  - Second scenario assumes 50% hydro and 50% natural gas generation

Power Costs Under Range of Natural Gas Prices



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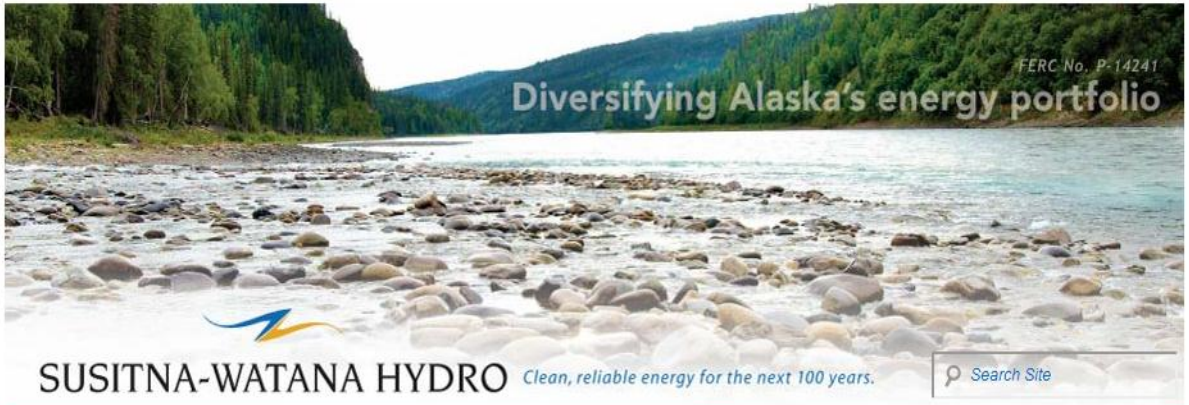
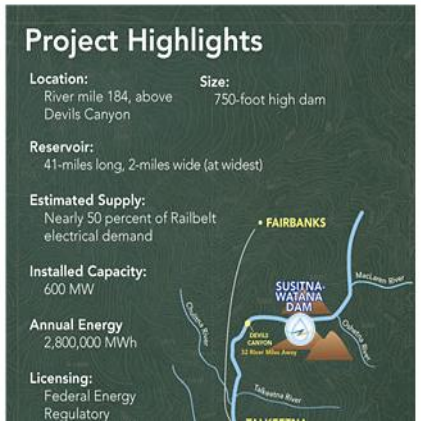
Economic Takeaways

- Susitna-Watana Hydro can significantly reduce future power cost uncertainty
- Competitive with natural gas in the early years, much lower-cost over long-term
- Equals the price of base case natural gas after 12 years without any direct State financing

2013 Goals and Milestones

- Continued stakeholder and landowner outreach
- Implement the Revised Study Plan
  - Field work agreements with Alaska Department of Fish & Game
  - Logistical support, including helicopters and field camps
  - Obtaining permits from land owners
- Resources and Procurement Plan
- Utility Precedence Agreement
- Geotechnical exploration





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