

# Cook Inlet Gas Shortage

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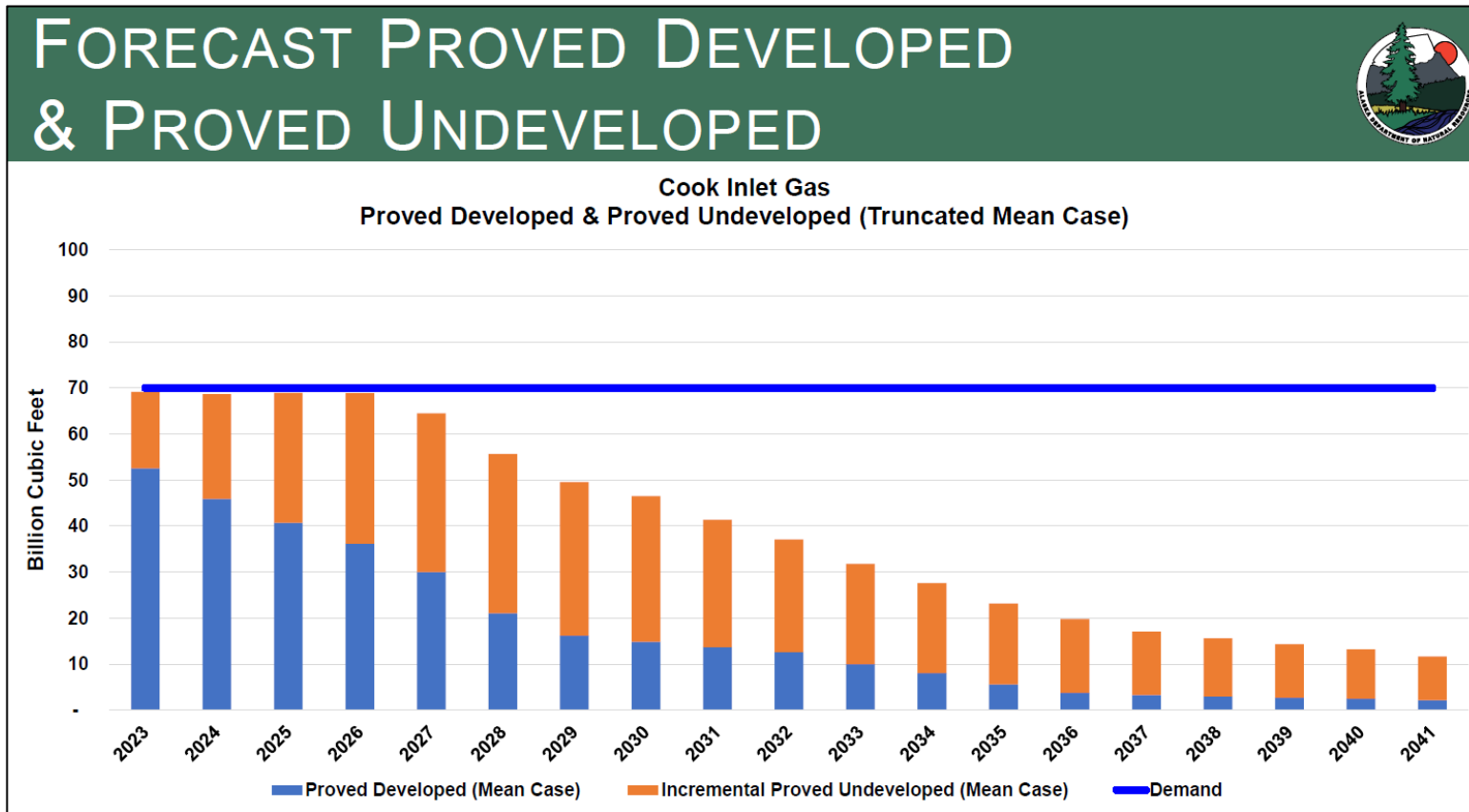
## LEGISLATIVE OPTIONS TO ADDRESS THE ISSUE

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HOUSE RESOURCES COMMITTEE

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# Intro: Problem Definition



- State is facing a looming and increasing shortage of Cook Inlet natural gas production
- Legislature has tools at its disposal to increase Cook Inlet gas production
- No “silver-bullet” solution

# Southcentral Alaska Gas Shortage Survey

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- Enstar conducted public opinion poll this past summer
- N=402, Southcentral Alaska residents, age 18+
- Borough composition: Anchorage (61%), Mat-Su (28%), Kenai Peninsula (11%)
- Margin of Error: +/- 4.9% at 95% confidence interval for total sample
- Dittman Research highly regarded in polling

# Poll Results: Public Awareness

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- 29% of Southcentral residents cannot say what source their power primarily comes from; 69% correct that 20% or less of total electricity comes from renewables
- 54% aware of impending natural gas shortage; 1% mention hearing something about natural gas potentially being imported
- High level of concern that utilities are preparing for gas shortages as early as 2028 (63%)
- Plurality of residents (41%) of residents believe state government bears the primary responsibility for ensuring uninterrupted natural gas supply

# Poll Results: What do Alaskans Want?

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- High level of support (59%) for state incentives to private companies and utilities to identify and pursue projects to ensure energy deliverability
- Same support (59%) for creating financial incentives for oil and gas companies to find and produce more Cook Inlet gas
- Significant opposition to importing natural gas (72%) with 44% having “strong” opposition
  - Most common reason for opposition: *“there is plenty of gas, we’re a resources state, we just need to get the gas”* (46%)
  - *“Importing gas is more expensive”* only cited by 18% of respondents
- If residents were convinced imports are the cheapest option could be a sizeable shift in support, up to 60%
- 87% of residents support the construction of a natural gas pipeline for in-state use and export; evenly divided on the idea of reducing the PFD to help fund a gas line (49% support/49% oppose)

# Poll Results: Summary

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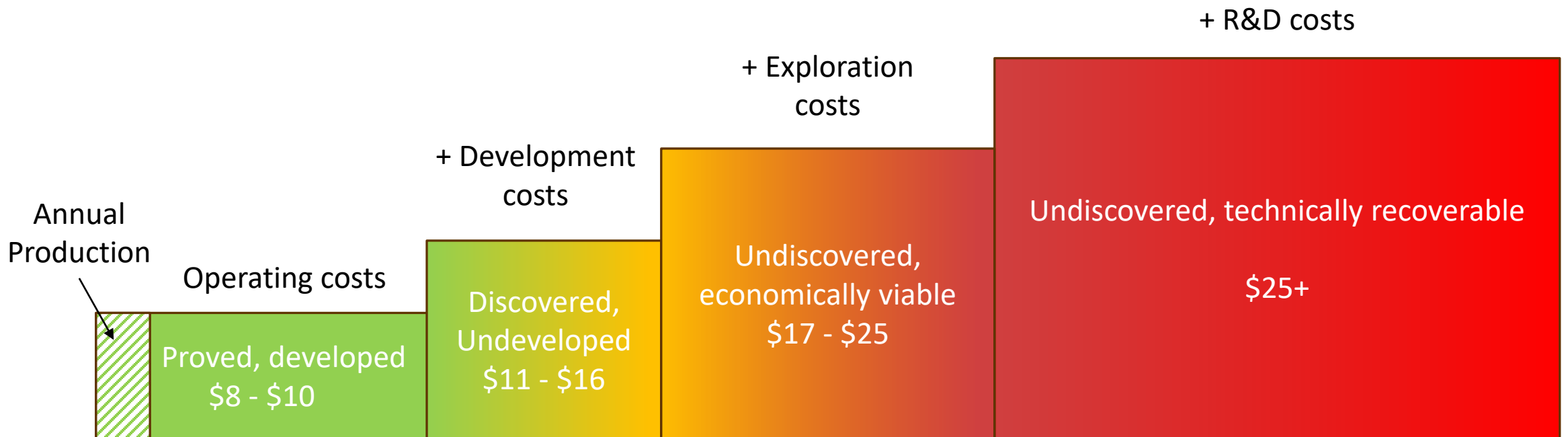
- Strong support for Cook Inlet incentives to spur exploration and production
- Strong opposition to importing gas
- Strong support for a natural gas pipeline

# Energy Economics 101

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# Market Dynamics

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# Market Dynamics

Figure 10: 2018 ADNR Cook Inlet Gas Availability Curve

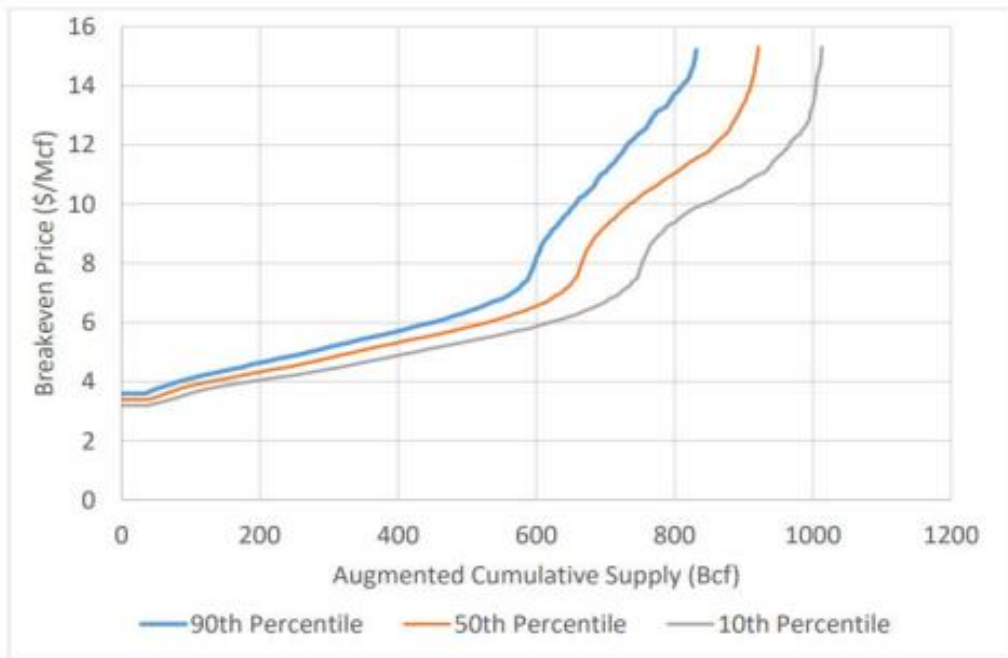
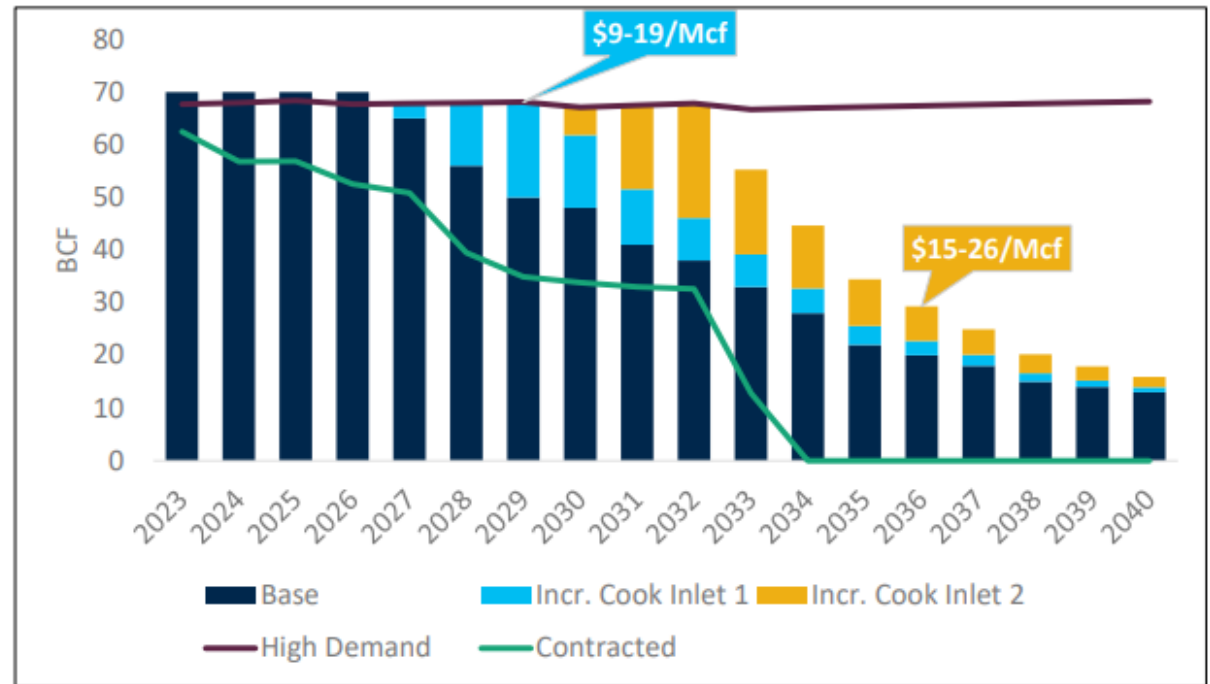


Figure A-1. Cumulative supply from augmented production sources (15% real hurdle rate)

Figure 11: Incremental Regional Gas Supply Estimate<sup>34</sup>



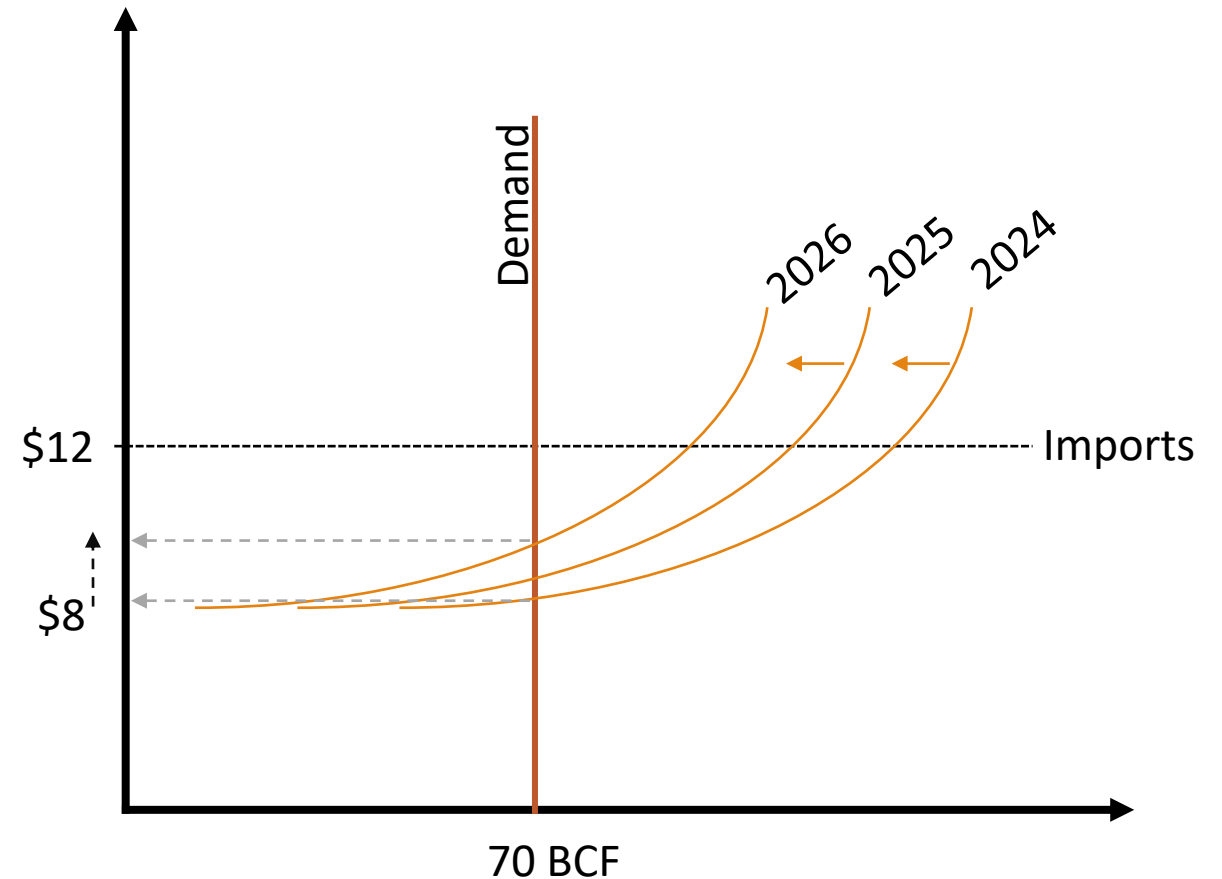
# Market Dynamics

Supply curve for exhaustible resources shifts left as the cheapest production is depleted - Resulting in progressively higher costs of production

Increasing costs must be covered by increasing revenues to maintain an incentive to invest

Eventually, the cost of production gets higher than the best alternative

The market for natural gas in southcentral includes near perfectly inelastic demand (consumption doesn't react to price in the short-run)



# Market Dynamics

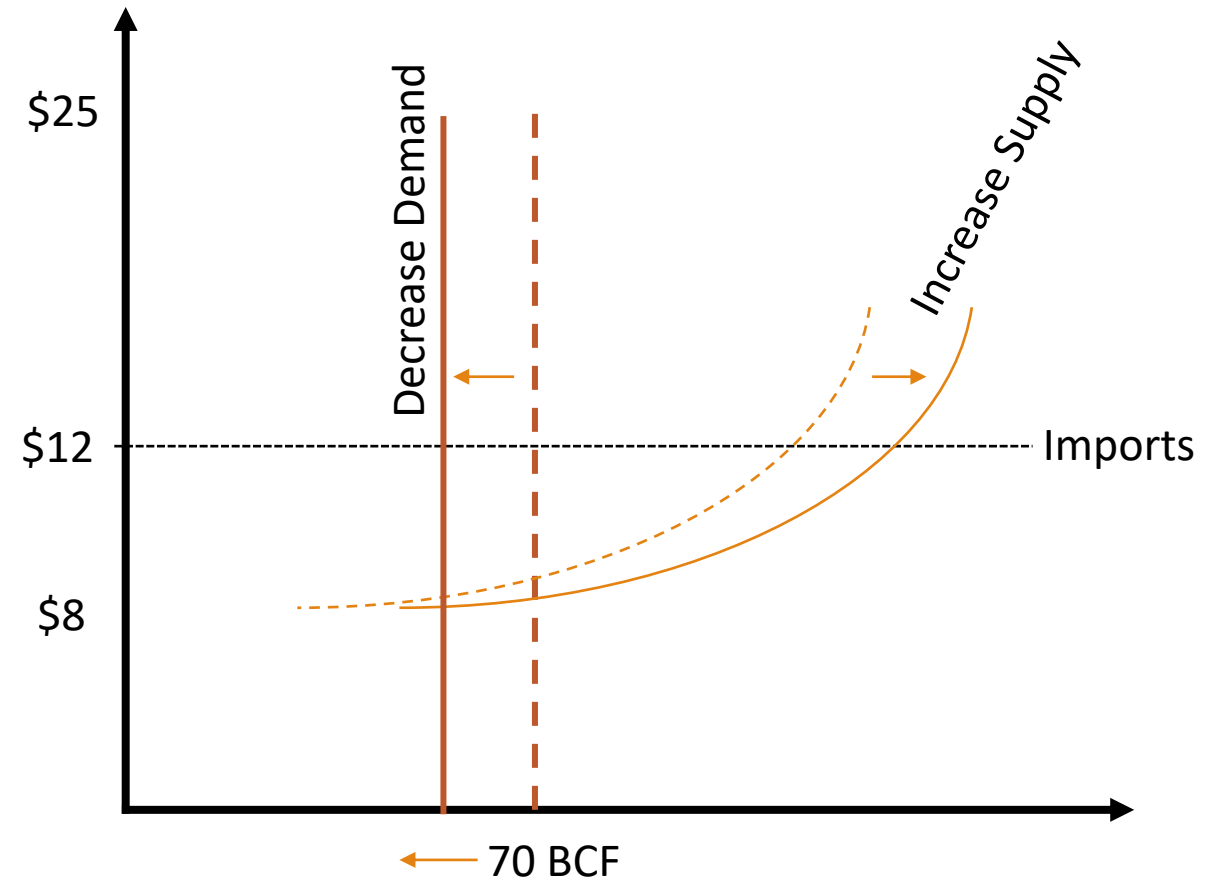
There are two options to alter the market outcome:

Increase Supply:

- Reduce Taxes and Royalties
- Provide Subsidies
- Shift Risks
- Offer Patient Capital
- Increase Access

Decrease Demand:

- Substitute Electricity Generation
- Alternative Heating Fuel
- Increase Efficiency
- Restrict Growth



# Considerations for Energy Policy

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- Short Term vs. Long Term
- Risk vs. Cost – State needs to decide what level of risk is acceptable
  - Higher-Cost energy = Lower Risk Options
  - Lower-Cost Energy = Higher Risk Options
- How policies interact

# Short Term Options

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# LNG Imports

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- Kenai LNG facility can be converted to a gasification facility and receive small LNG shipments
- Roughly 1.5 BCF of storage currently on site via above ground tanks previously used. More storage can be added in stages to adjust for increasing LNG needs
- Marathon has FERC permit and is actively pursuing this project
- Storage also available in Cook Inlet; Regulatory issues need to be addressed via legislation and gasification capacity would be needed, but the volumetric storage capacity is a non-issue
- Starts as a short-term solution, but also works in the long term (as a costly solution) if importing LNG is the state's response to the Cook Inlet gas shortage

# Jack-Up Rig Credit (HB 387)

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- Second jack-up rig in Cook Inlet will be required to adequately explore for and develop gas reserves
- Title 43 tax liability reduction credit, not cash payout; Policy should require the rig is used in Cook Inlet
- Federal leases in Cook Inlet require a rig with longer reach capabilities
- Current rig (Spartan 151) will be drilling for the foreseeable future; any new major development (Cosmopolitan, Kitchen Lights) will require the presence of a second rig.

# Reserve Based Lending (HB 388)

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- Allocate state dollars to a dedicated fund with legislative directive to invest in the development of Cook Inlet
- Could be in the form of a loan or a loan guarantee
- AIDEA currently has the budget for large loans but should receive legislative directive for large scale or mega-projects
- **Lower Risk** – Limit funding to proven reserves; **Higher Risk** – Fund exploration drilling



# Royalty & Tax Decreases

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- Market has spoken: Cook Inlet under current tax & royalty structure is not ideal for investment
- Current bills are a significant step in the right direction, but state could go even farther to improve project economics and attract investment.
  - HB 223 (Rep. Rauscher) – 0% royalty on new gas, 50% reduction in royalty on new oil = best option moving
- What does the state want to incentivize?
  - Royalty and tax decreases on producing wells → Extend the life of existing wells
  - Royalty and tax decreases on new wells → Increase the number of wells drilled
- Alternative/Additional Idea: No royalties or taxes assessed until “payout” for Cook Inlet investments
  - Time Value of Money results in an increased RoR for projects under this structure

## Oil & Gas Revenue by Type and Geographic Area, FY 2020 - FY 2023

Prepared by Economic Research Group, January 29, 2024

| State Oil & Gas Revenue by Source and Region (\$ million) |                   |                   |                   |                   |
|---|-------------------|-------------------|-------------------|-------------------|
|   | FY 2020           | FY 2021           | FY 2022           | FY 2023           |
| <b>North Slope</b>  |                   |                   |                   |                   |
| Royalties (including bonuses, rents, and interest)        | \$ 965.9          | \$ 1,036.2        | \$ 1,770.2        | \$ 1,676.6        |
| Production Tax (including surcharge)                      | \$ 284.4          | \$ 388.4          | \$ 1,806.0        | \$ 1,494.3        |
| Property Tax  | \$ 107.3          | \$ 103.8          | \$ 106.9          | \$ 112.5          |
| Corporate Income Tax                                      | \$ 1.0            | \$ (23.2)         | \$ 284.9          | \$ 305.0          |
| <b>Subtotal North Slope</b>                               | <b>\$ 1,358.6</b> | <b>\$ 1,505.2</b> | <b>\$ 3,968.1</b> | <b>\$ 3,588.4</b> |
| <b>Non-North Slope (including Cook Inlet)</b>             |                   |                   |                   |                   |
| Royalties (including bonuses, rents, and interest)        | \$ 49.7           | \$ 46.1           | \$ 53.8           | \$ 59.7           |
| Production Tax (including surcharge)                      | \$ 0.7            | \$ 0.6            | \$ 3.4            | \$ 4.3            |
| Property Tax  | \$ 15.6           | \$ 15.4           | \$ 15.5           | \$ 16.3           |
| Corporate Income Tax                                      | \$ (1.2)          | \$ 3.8            | \$ 12.6           | \$ 7.4            |
| <b>Subtotal Non-North Slope</b>                           | <b>\$ 64.8</b>    | <b>\$ 65.9</b>    | <b>\$ 85.2</b>    | <b>\$ 87.7</b>    |
| <b>STATEWIDE TOTAL</b>                                    |                   |                   |                   |                   |
| Royalties (including bonuses, rents, and interest)        | \$ 1,015.6        | \$ 1,082.3        | \$ 1,824.0        | \$ 1,736.3        |
| Production Tax (including surcharge)                      | \$ 285.1          | \$ 389.0          | \$ 1,809.4        | \$ 1,498.7        |
| Property Tax  | \$ 122.9          | \$ 119.2          | \$ 122.4          | \$ 128.8          |
| Corporate Income Tax                                      | \$ (0.2)          | \$ (19.4)         | \$ 297.5          | \$ 312.4          |
| <b>Statewide Total</b>                                    | <b>\$ 1,423.4</b> | <b>\$ 1,571.1</b> | <b>\$ 4,053.3</b> | <b>\$ 3,676.2</b> |

**Source:**

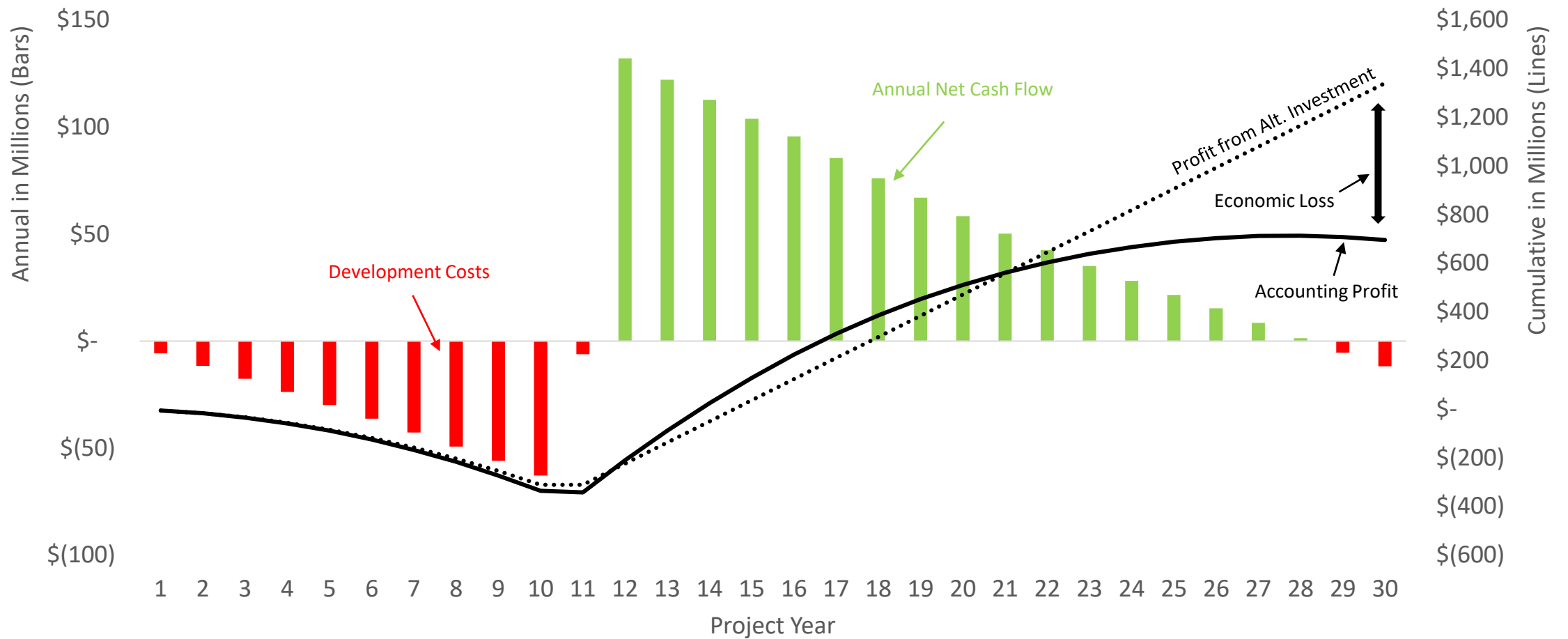
Fall 2023 Revenue Sources Book and supporting documentation, Tax Revenue Management System, Tax Accounting Group, Department of Natural Resources, and Economic Research Group modeling.

## Aggressive Royalty & Tax Reductions

- Cook Inlet represents a small share of the states oil and gas revenues
- Energy prices likely to double or triple in the next 15 years if mass LNG imports are the solution
- An increase of this magnitude would result in rate payers paying 100's of millions to billions more in energy costs **every year.**

# Sensitivity Analysis for Short-Term Options

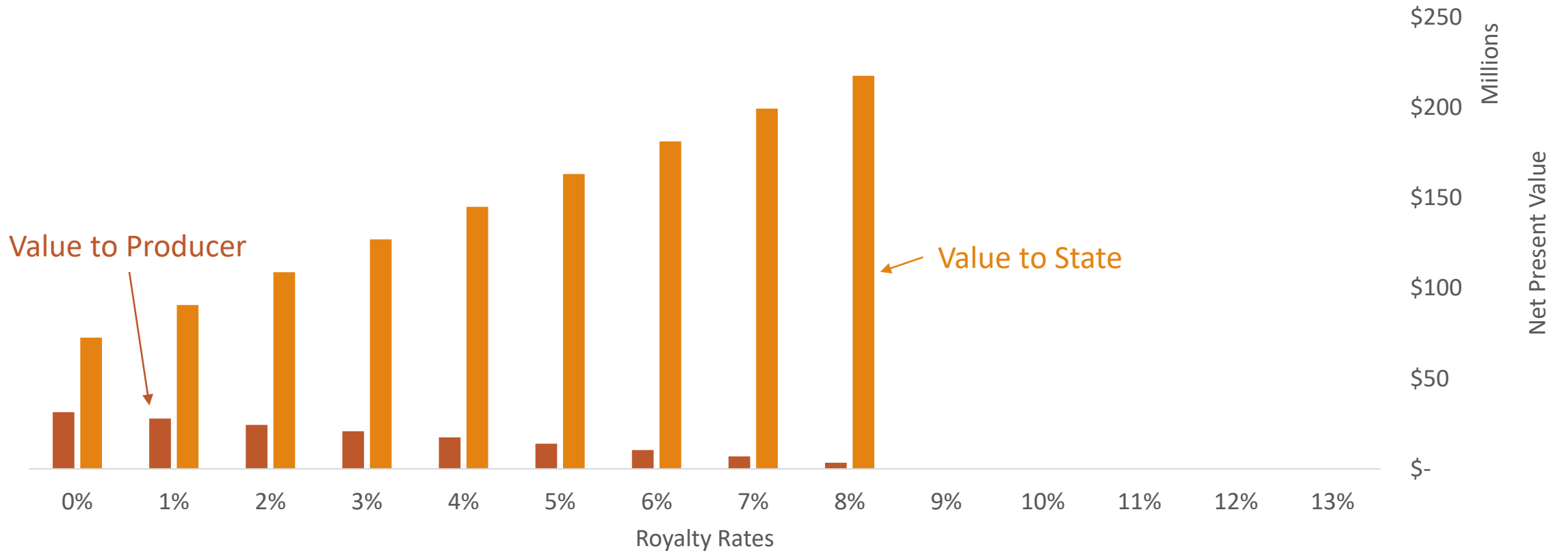
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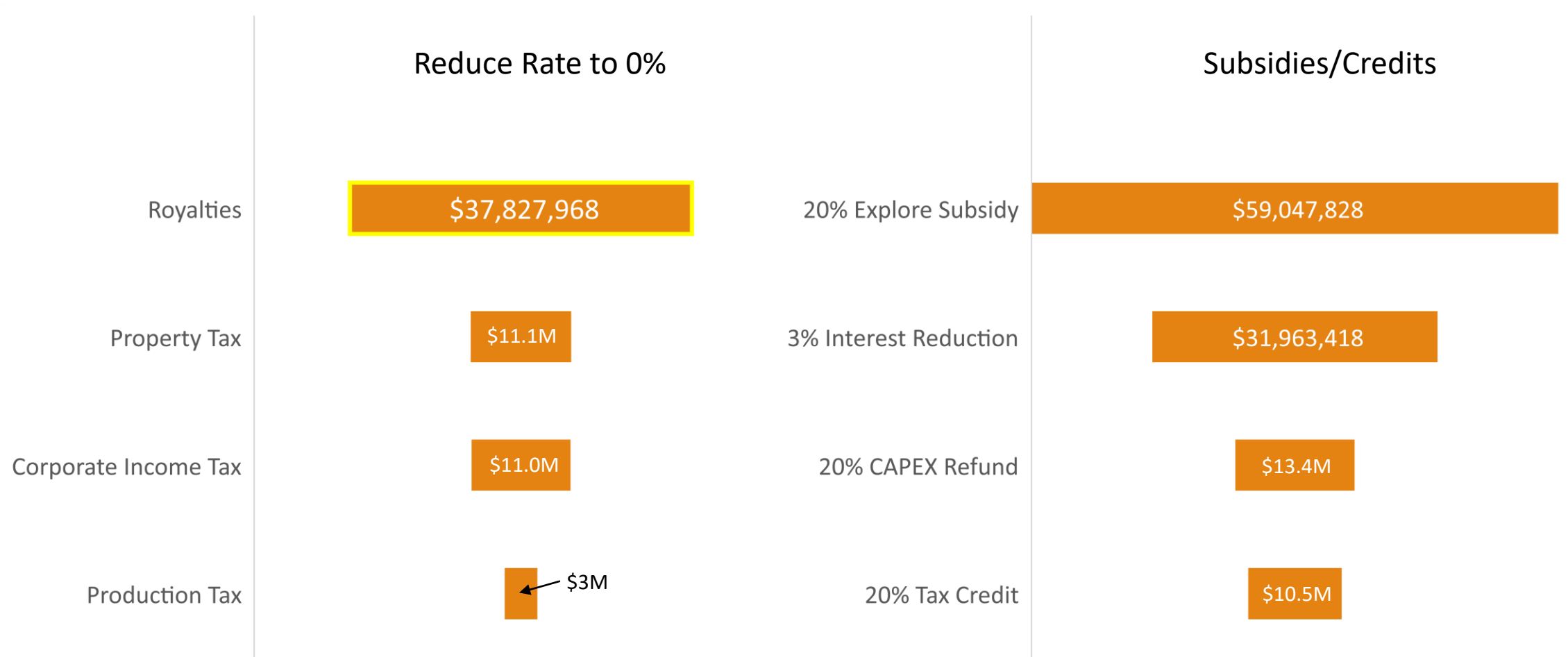
# Basic Petroleum Economics

## (Hypothetical 100M bbl. Project)

State/Company Value at Different Royalty Rates



# Impact of Royalty Rate Changes



# NPV Improvement From Legislative Options

# Long-Term Solutions

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# Energy Diversification

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- Less secure options with questionable timelines and shouldn't be counted on in the short term; however, there is potential some of these options could come online before 2030.
- **Clean (“Abated”) Coal**
  - PCOR Partnership Feasibility Study– 500 MW project with 400 MW net after CO2 sequestration
  - Could utilize Beluga intertie for transmission and BRU reservoir for sequestration
  - Targeting \$0.08 to \$0.12/kWh
  - Potential for legislation to help push this project through in the form of state PPA's
  - May face permitting issues
- **Hydroelectric**
  - Susitna-Watana Dam – 460 MW project
  - Held back by cost and permitting issues
  - Roughly 20-year timeline to complete
- **Wind**
  - Little Mount Susitna Wind Farm - 120 MW project
  - Estimated 2027 first power, but not confirmed; no primary investor has been announced
  - Likely the most intrusive industrial project



# Alaska Gas Line

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- Line just for in-state use would be more expensive than current Cook Inlet prices but significantly less than relying on mass LNG exports
- If LNG exports added to an in-state line, gas prices would drop significantly
- Cheap in-state gas from an LNG line likely to spur significant economic growth
- Project economics have held project back both in-state & LNG export line
- State could finance line with creative funding mechanisms; how much risk are Alaskan's willing to take?

# Economic Factors to Consider for Long-Term Options

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# Southcentral Energy Market Structure



Closed and capped  
~70 BCF/year

Few sellers  
Few buyers  
Not connected to  
global market



Consumption =  
Production

Constrained  
Confined  
Cost-burdened



Economic growth  
limited by energy

Lumpy demand for large  
scale users  
Limited supply for new  
entrants  
High costs for residents  
and businesses

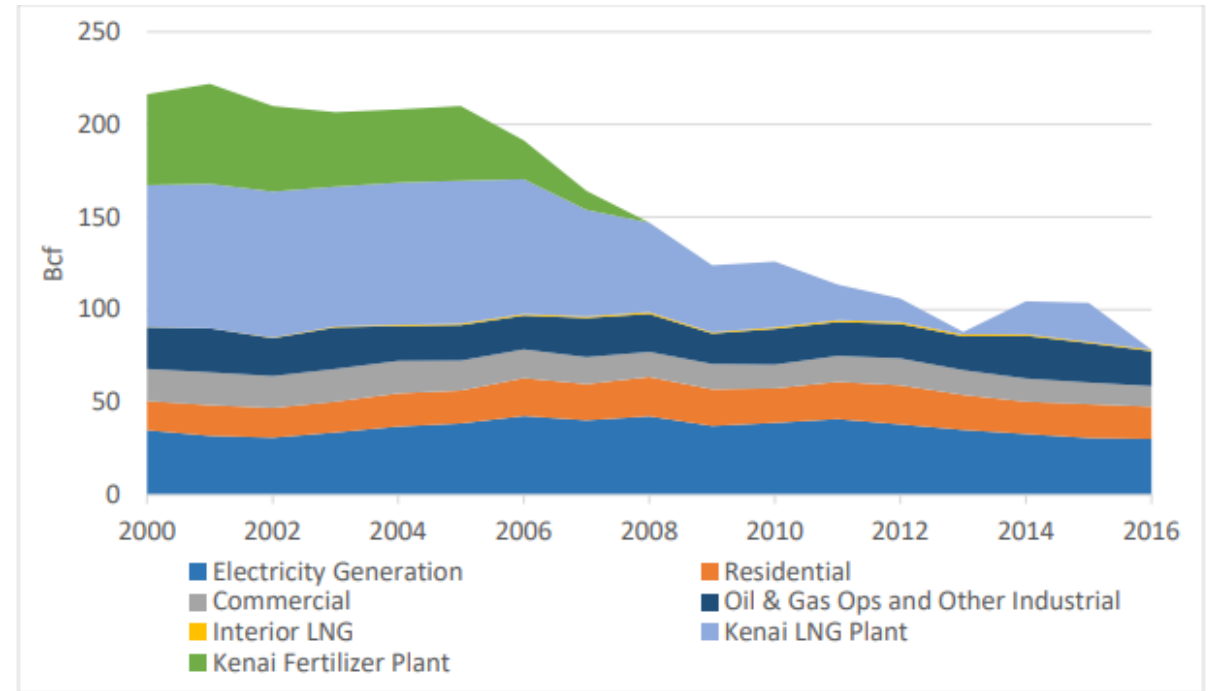
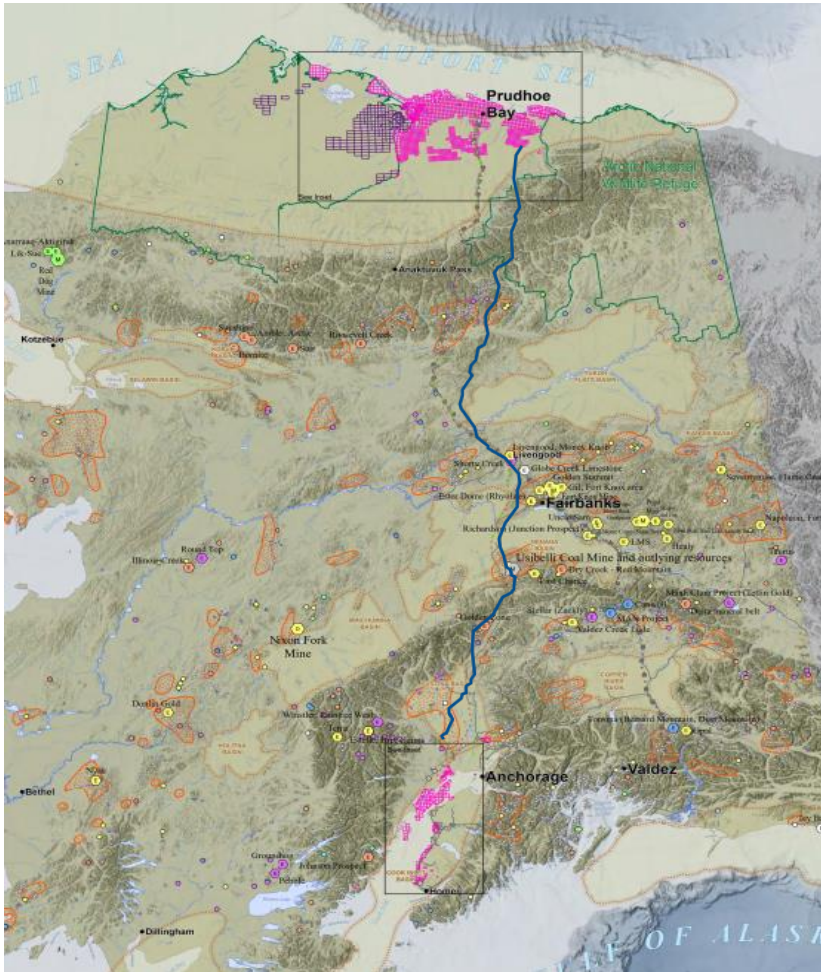


Figure 1. Cook Inlet natural gas consumption by end use (2000–2016)

Sources: Energy Information Administration (EIA) Forms 923 and 176 (EIA, 2017), Regulatory Commission of Alaska (RCA) filings (RCA, 2017), and Alaska Oil and Gas Conservation Commission (AOGCC, 2017)



# Policy Considerations

Free markets don't care

- Markets solutions are always efficient, but not always equitable
- Government intervention is required to change market outcomes

Private capital flows to best monetary returns and is risk adverse

- Public capital flows to best social returns as is risk tolerant

Consider the objective

- Lowest energy cost?
- Maximum benefit from resources?
- Smallest budget burden?
- Largest economic impact?

Determine risk tolerance

- Stable prices at import cost or potential for much lower costs
- Long-term vs. short-term focus

# Conclusions

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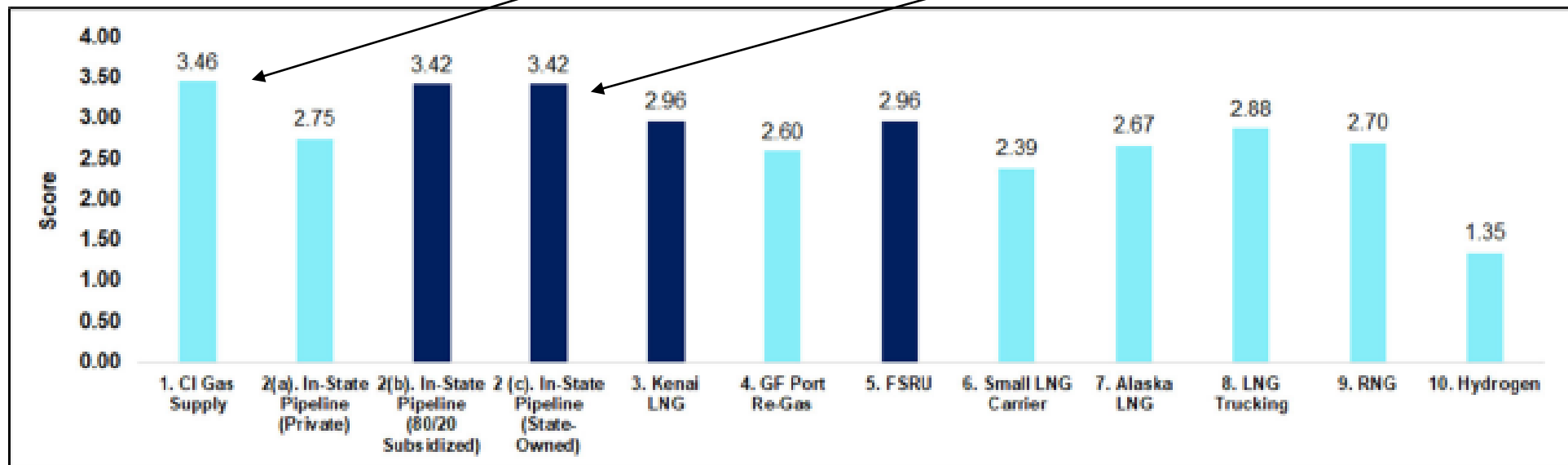
# Alaska Solutions

Legislature must decide:

- Should we accept the market outcome?
- Do we put a premium on using Alaska resources?
- Are higher energy costs better than taxes?
- Do we agree with the BRG findings?

Focus on increasing CI gas is the best option, but is short-term

A state owned or subsidized pipeline is the best long-term option



# Active Efforts

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## Cook Inlet Supply

- HB 223 – Royalty Relief
- HB 257 - Cook Inlet Seismic Access
- HB 387 – Jack-up rig credit
- HB 388 – Reserve based lending
- SB 254 – ORRI condemnation

## Renewable transition

- HB 154 – Green Bank
- HB 349 – Renewable energy leases
- HB 368 – Clean Energy Standards
- Susitna-Watana Dam
- Little Mount Susitna Wind Farm

## North Slope Pipeline

- HB 222 – Pipeline investment

## Other Long Term

- SB 220 – Storage regulation
- PCOR Clean Coal
- ACEP
- LNG Imports
  
- ***More to come from the House Resources Committee...***