

# Alaska LNG Project Update

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Presented to: Alaska Eskimo Whaling Commission

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July 14, 2022

- Alaska LNG Project Update
  - Overview
  - Regulatory Status
  - LNG Market
  - Alignment of Strategic Parties
- Dept. of Energy DRAFT SEIS
- Moving Forward

# Alaska LNG Project

## North Slope Gas Supply

- 40 Trillion cubic feet (tcf) of discovered, conventional, and developed North Slope associated gas from Prudhoe Bay and Point Thomson
- Gas is stranded

## Gas Treatment Plant

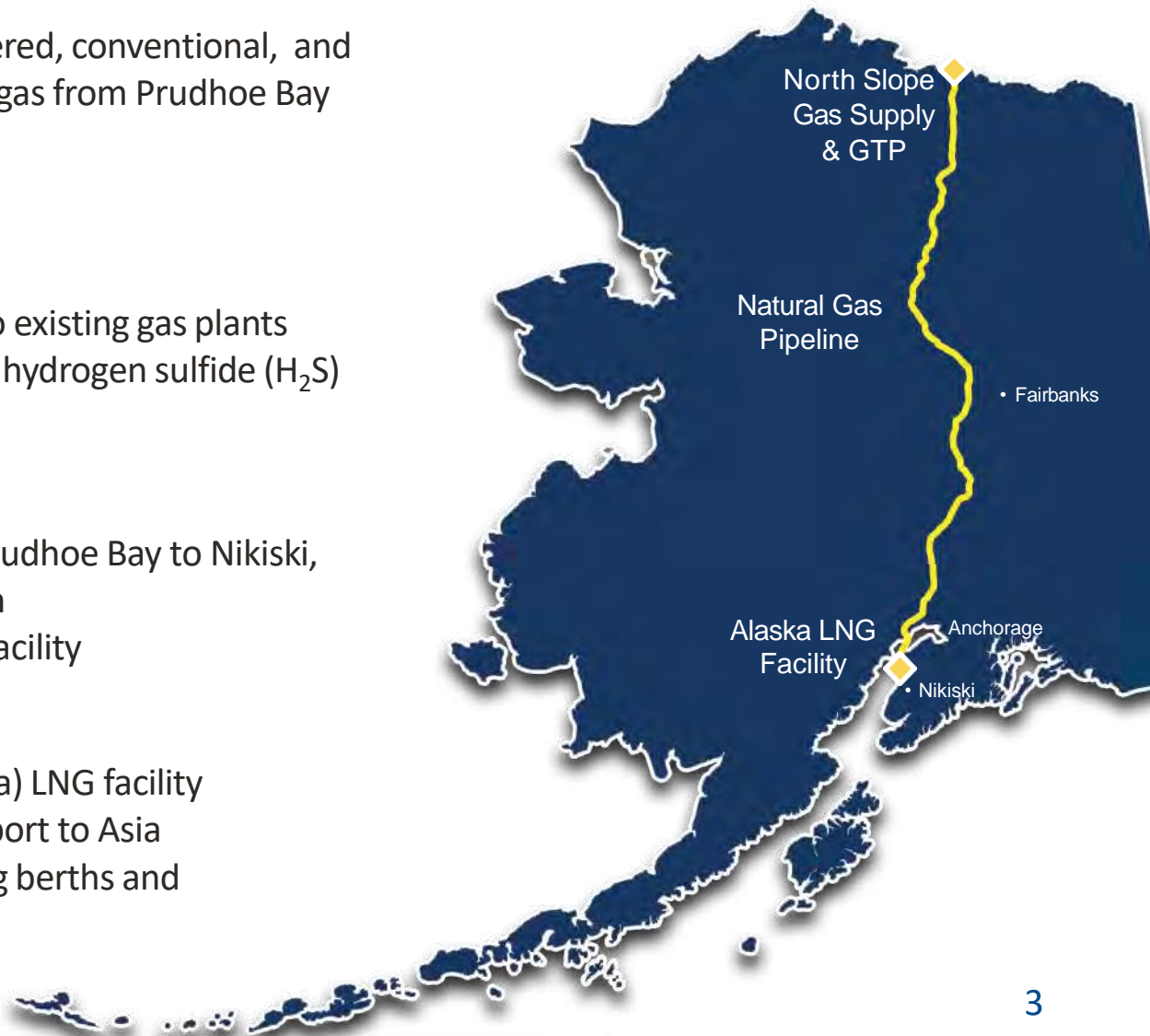
- Located in Prudhoe Bay adjacent to existing gas plants
- Removes carbon dioxide (CO<sub>2</sub>) and hydrogen sulfide (H<sub>2</sub>S) from raw gas stream

## Natural Gas Pipeline

- 807-mile, 42" dia. mainline from Prudhoe Bay to Nikiski, following TAPS and highway system
- Provides gas to Alaskans and LNG facility

## Alaska LNG Facility

- 20 Million tonnes per annum (Mtpa) LNG facility
- Converts natural gas to LNG for export to Asia
- 3 liquefaction trains, jetty, 2 loading berths and 2 x 240,000 m<sup>3</sup> LNG tanks



# Regulatory Status

- Completed

- Federal Energy Regulatory Commission (FERC) Environmental Impact Statement (EIS) and Order
  - Major federal permits & authorizations
  - Land ROWs: about 93% of Project area
  - Approved Cultural Resources Management Plan
  - Gas Treatment Plant Air Permit
  - Liquefaction Facility Air Permit

- Underway

- DOE Supplemental EIS – to support the Non-Free Trade Agreement Nation Export License

ALASKA LNG			Federal Permits and Authorizations	
Permit/Authorization	Date Obtained	Complete		
Presidential Finding Concerning Alaska Natural Gas – President Reagan	1/12/1988	✓		
BLM Right-of-Way – Grant Offer	1/1/2021	✓		
BLM Right-of-Way Record of Decision	7/23/2020	✓		
Cultural Resources Management Plan	6/24/2021	✓		
DOD Letter of Non-Objection	3/10/2020	✓		
DOE Natural Gas Export Order (Free Trade)	11/21/2014	✓		
DOE Natural Gas Export Order (Non-Free Trade) <sup>1</sup>	8/20/2020	✓		
EPA Section 401 Water Quality Certification	6/22/2020	✓		
FAA Determinations GTP	5/6/2021	✓		
FAA Determinations LNG	1/5/2021	✓		
FERC Final Environmental Impact Statement	3/6/2020	✓		
FERC Order Granting Authorization under Section 3 of the Natural Gas Act <sup>2</sup>	5/21/2020	✓		
FERC Programmatic Agreement - Cultural Resources	6/24/2020	✓		
NMFS Biological Opinion AKRO-2018-01319	6/3/2020	✓		
NMFS Cook Inlet Marine Mammals (whales/seals) Incidental Take Rule	8/17/2020	✓		
NMFS Cook Inlet Marine Mammals (whales/seals) Letter of Authorization	9/15/2020	✓		
NMFS Prudhoe Bay Incidental Harassment Authorization Marine Mammals (whales/seals)	2/16/2021	✓		
NPS Right-of-Way Permit	1/5/2021	✓		
NPS Right-of-Way Record of Decision, DNPP	7/23/2020	✓		
PHMSA Siting Letter of Determination and Analysis - Liquefaction Facility	2/4/2020	✓		
PHMSA Special Permit – Crack Arrestor Spacing	9/9/2019	✓		
PHMSA Special Permit – Mainline Block Valve Spacing	9/9/2019	✓		
PHMSA Special Permit – Pipe-in-Pipe	4/27/2020	✓		
PHMSA Special Permit – Strain-Based Design	9/9/2019	✓		
PHMSA Special Permit – Three-Layer Polyethylene Coating	9/9/2019	✓		
USACE Record of Decision Section 404 Wetlands Permit	6/24/2020	✓		
USCG Bridge Permit - Deshka River	9/11/2020	✓		
USCG Bridge Permit - East Fork Chulitna	9/11/2020	✓		
USCG Bridge Permit - Middle Fork Chulitna	9/11/2020	✓		
USCG Bridge Permit - Sag	9/11/2020	✓		
USCG Bridge Permit - Tolovana	9/11/2020	✓		
USCG Letter of Recommendation Regarding the Waterway Suitability Assessment	8/17/2016	✓		
USCG Waterway Suitability Assessment	3/18/2016	✓		
USFWS Biological Opinion	6/17/2020	✓		
USFWS Cook Inlet Incidental Take Rule Marine Mammals (sea otters)	8/1/2019	✓		
USFWS Eagle Take Permit	6/23/2020	✓		
USFWS Incidental Take Rule Marine Mammals (polar bear)	8/5/2021	✓		

- Department of Energy (DOE) DRAFT Supplemental Environmental Impact Statement (SEIS) issued June 24, 2022
- Response to Sierra Club Petition
- Key findings
  - The Prudhoe Bay Unit (PBU) and Point Thomson Unit (PTU) have sufficient gas to supply the project for the 30-year term
  - All of the potential resource impacts were Negligible, Less-than-Significant or Beneficial (no Adverse or Significant), which is strikingly positive for an EIS
  - Exporting Alaska LNG would not increase greenhouse gas emissions in comparison to ‘business as usual’ production on the North Slope
    - Alaska LNG has lower greenhouse gas emissions than Gulf Coast LNG
- Comment period is from July 1 - August 15, 2022
- Virtual public meeting July 20, 2022

# Greenhouse Gas Emissions

A lifecycle analysis of Alaska LNG shows it reduces greenhouse gas emissions for electric power generation by more than 77 million metric tons of CO<sub>2</sub>e per year in comparison to Asian coal derived power

Alaska LNG will have the same GHG impact as:

Eliminating



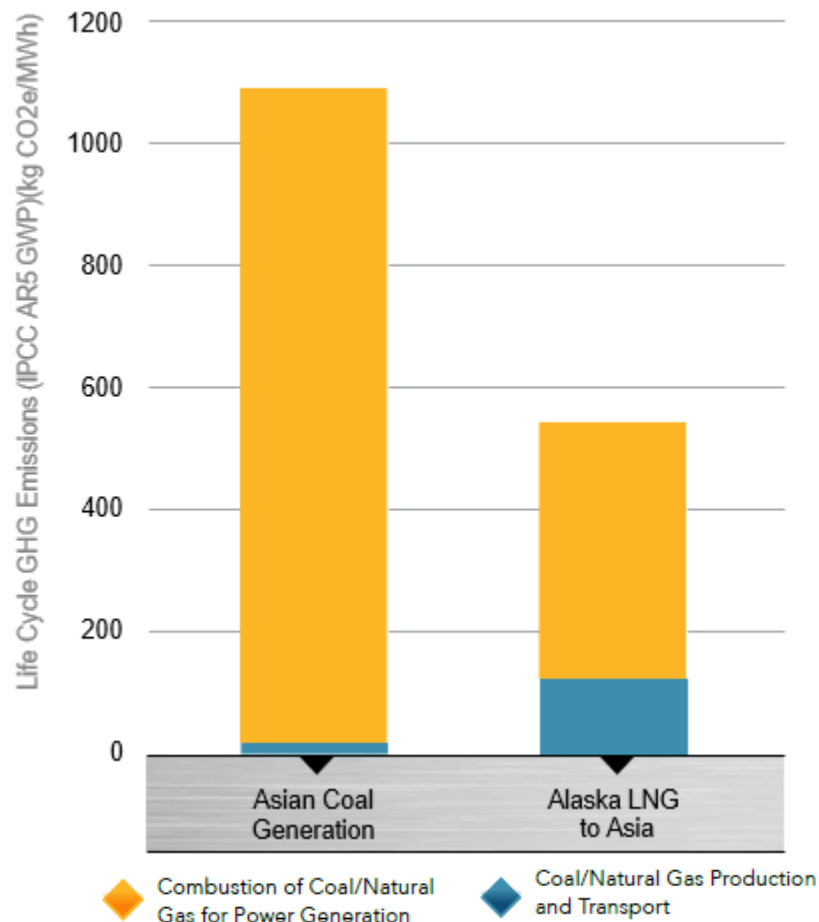
19 coal  
power  
plants

Constructing



16,000  
Wind  
Turbines

## Lifecycle GHG Emissions for Natural Gas vs. Coal Power



Source: Greenhouse Gas Lifecycle Assessment: Alaska LNG Project



# LNG Demand Forecast

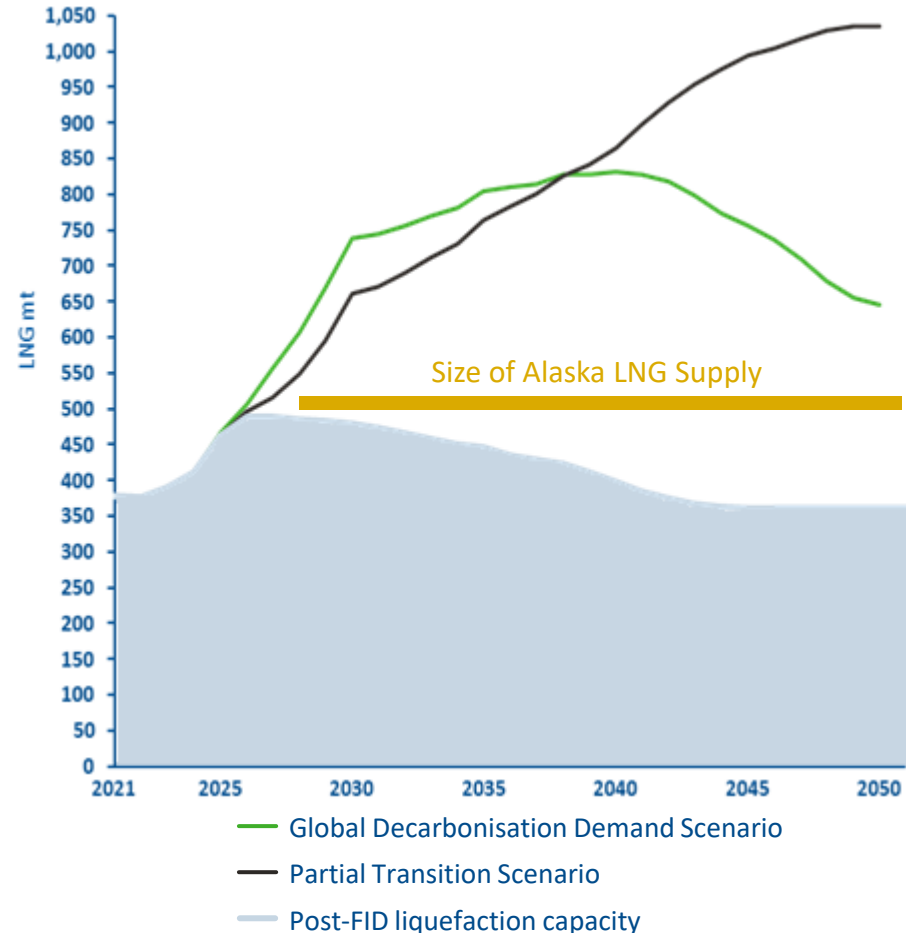
## LNG is in High Demand

- Two LNG demand scenarios based on different speeds of the energy transition
- Under both energy transition scenarios, LNG demand exceeds supply for the expected life of the Alaska LNG Project
- Demand growth will outpace current and planned LNG capacity
- Significant levels of LNG capacity will be needed as LNG demand doubles by 2040

## Key Component of Energy Transition

- Natural gas emits half the greenhouse gases as coal
- Most new projects have some degree of energy transition planning

Global LNG Supply/Demand Balance Forecast, 2021-2050



Source: Gas Strategies

# Energy Security - Global



- As a result of the war in Ukraine, the US LNG destined for Asia has been diverted to Europe
- Europe is rapidly building new LNG import capacity to reduce its dependence on Russian gas, new LNG from the Gulf Coast will meet this future demand
- This dynamic increases the need for US supply from Alaska to meet the long-term energy security needs of Asia



- Railbelt Utilities Announced Working Group
  - Includes all major railbelt utilities
  - Assessing future gas supply needs and energy security in Cook Inlet
- The Alaska LNG Project is the best option to replace Cook Inlet gas
  - Secure, low-cost supply for Alaskans
  - If not constructed, Alaska may need to import LNG to replace Cook Inlet gas

## ANCHORAGE DAILY NEWS

Energy

### Hilcorp warns Alaska utilities about uncertain Cook Inlet natural gas supplies

By Alex DeMarban  
Updated: May 17, 2022  
Published: May 17, 2022



Exhaust from the Southcentral Power Project in Anchorage is lit by the setting sun on Friday, Jan. 11, 2019. (Loren Holmes / ADN)

Officials with several Alaska utilities say they've been informed by Hilcorp that the company does not currently have enough natural gas reserves in Cook Inlet to provide for new gas contracts. Those contracts face renewal in the next two to 11 years.

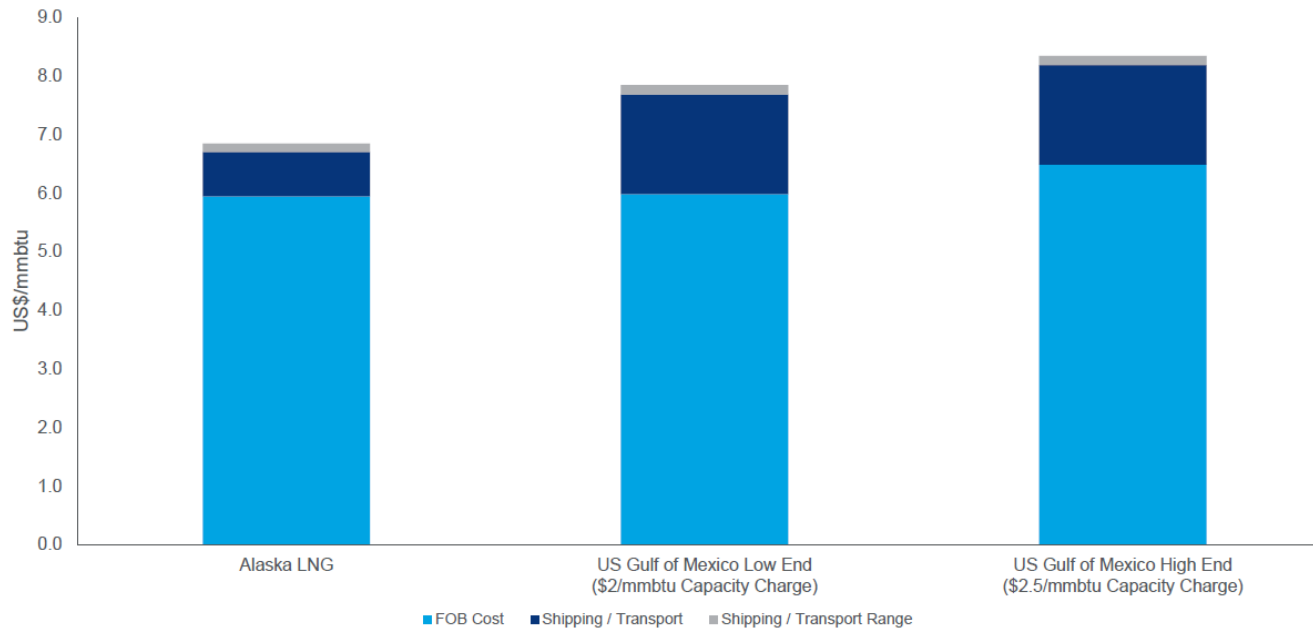
# Wood Mackenzie Cost of Supply

**With the cost optimization and new debt structure, Alaska LNG is competitive against US Gulf Coast LNG Projects**

woodmac.com



Comparison of Breakeven cost of supply for delivery into North Asia



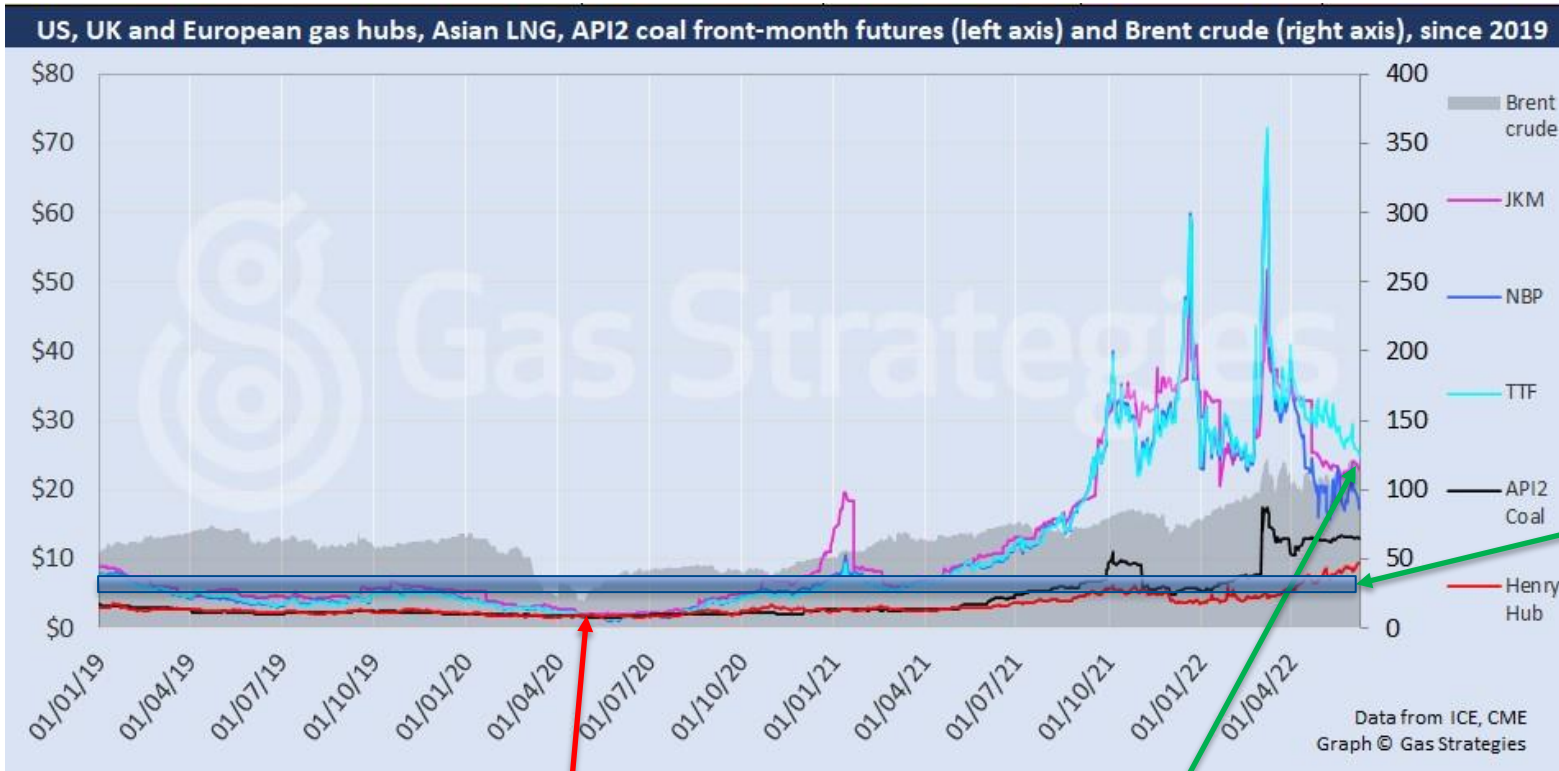
Source: Wood Mackenzie

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*Slide from 2022  
Wood Mackenzie  
Alaska LNG  
Competitiveness  
Analysis*

# The LNG Market Update

LNG and natural gas spot prices remain high and are expected to stay high for the foreseeable future. This creates an opportune environment for development of Alaska LNG.



**Alaska LNG**  
Target Range

**Summer 2020**

LNG: \$2.00

Henry Hub: \$2.00

**June 6, 2022 Japan, Korea Market**

LNG: \$23.36 (spot price)

Henry Hub: \$9.32

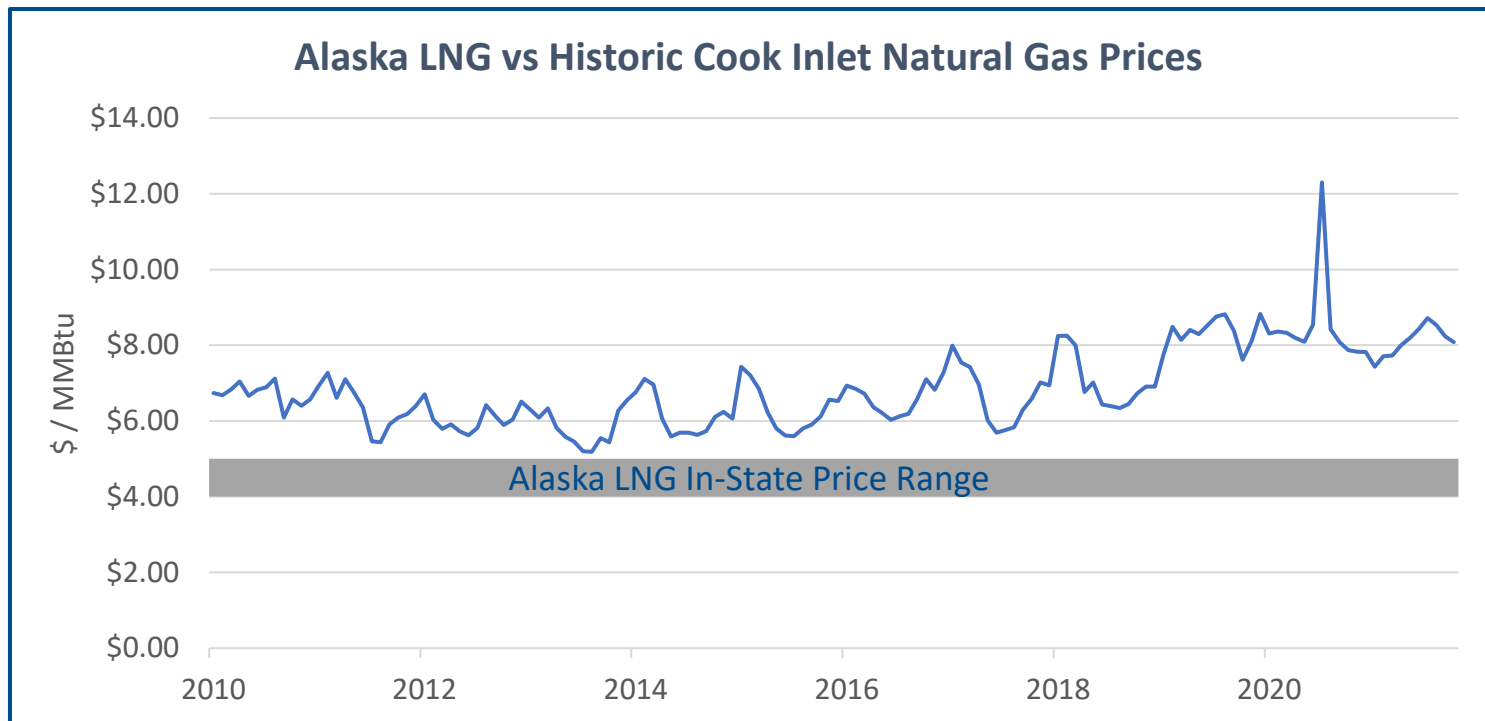
# Purpose: In-State Gas & Export

## Low-Cost Gas for Alaskans

- The Alaska LNG in-state price is estimated to be between \$4 - \$5 per MMBtu
- Significant reduction from current prices, saving Alaskans hundreds of dollars per year

## Enough Gas Supply for Alaskans

- The pipeline is designed to supply more natural gas than the LNG plant needs
- Enough capacity for in-state demand to more than double



Source: EIA

## Record High LNG prices

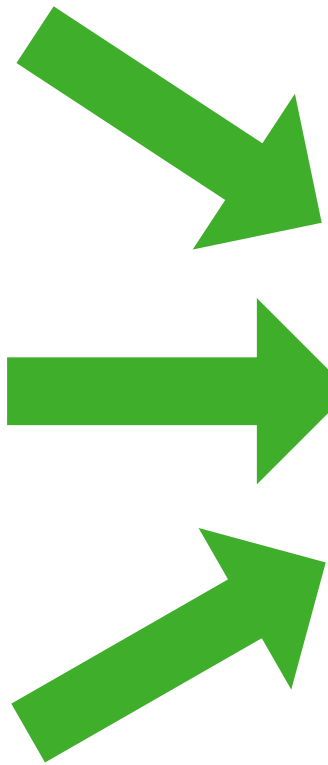
- Upward pressure on long-term contract price
- Highlights the need for new LNG capacity
- Buyers again seeking long-term contracts

## Role of LNG in National Security

- Europe is still buying Russian gas
- US LNG is being diverted to Europe
- Asian buyers are seeking LNG and expanding other energy sources (coal, nuclear)

## Natural Gas as Bridge Fuel

- Europe has recognized natural gas as transition fuel and 'green' energy
- Europe is switching back to coal due to lack of gas investment and availability

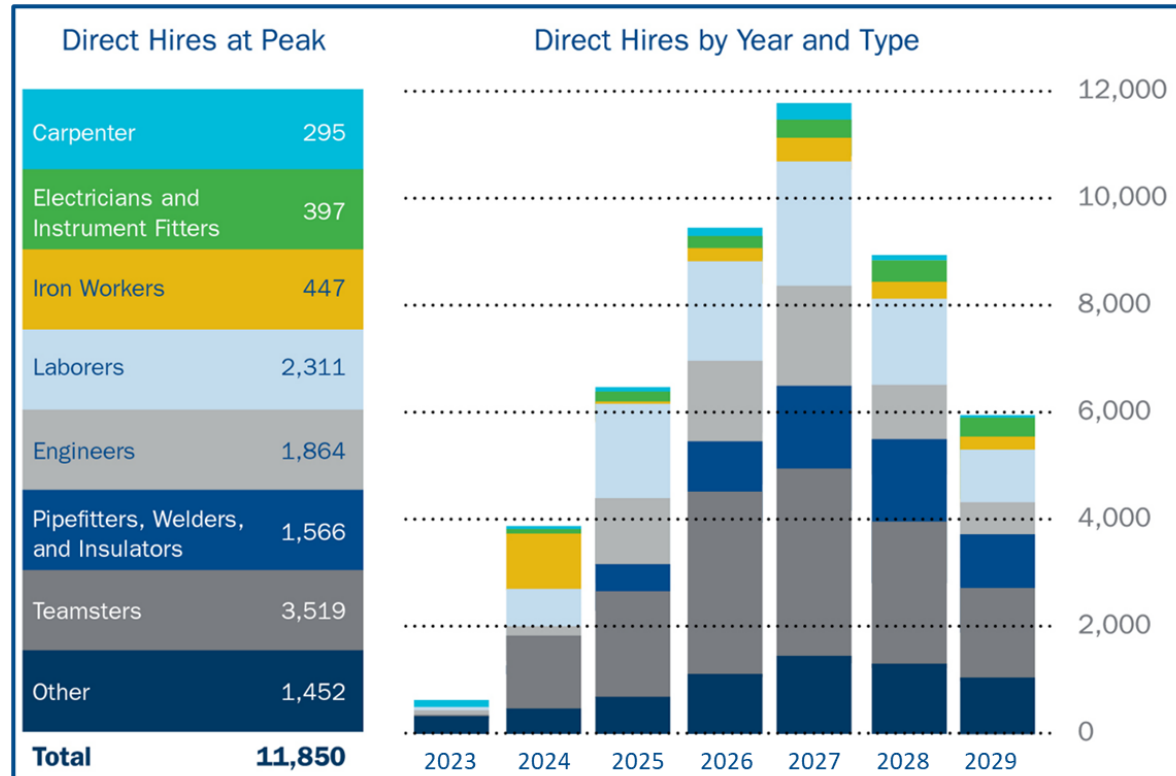


## Impact on Alaska LNG

- LNG investors and developers have increased interest
- Increased strategic importance for the US and our Asian allies
- Overall increased interest and urgency to move project forward

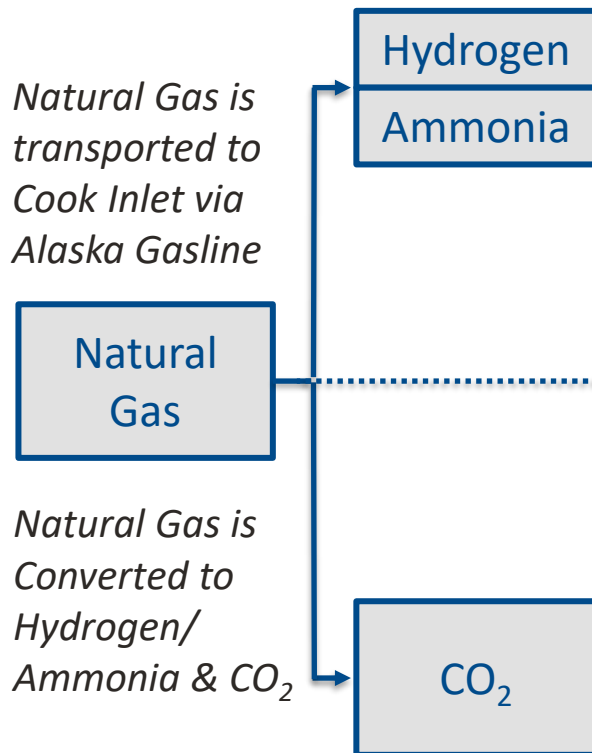
## Alaska LNG Job Creation

- Almost 12,000 direct jobs at peak of construction
- 1,000 long-term operations jobs
- Significant indirect jobs during construction and operations

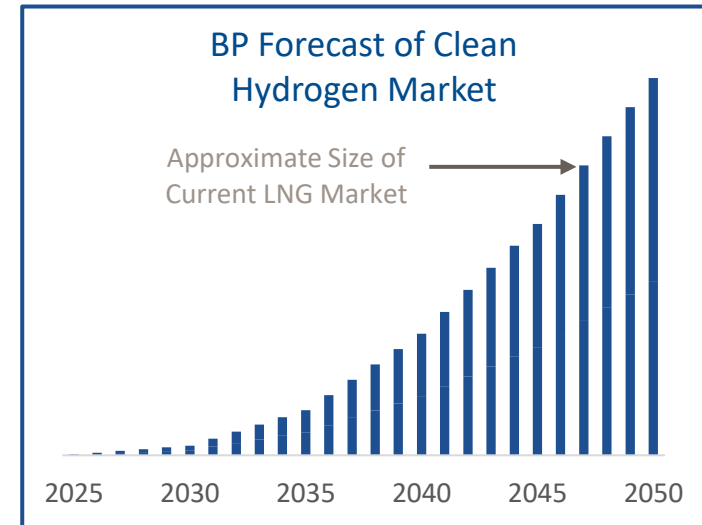




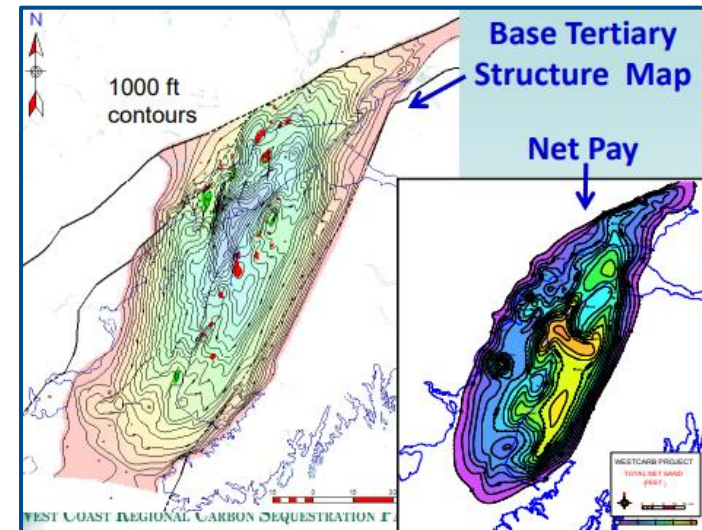
# Alaska Hydrogen Opportunity



- Hydrogen/ammonia are clean energy sources
- Key Asian markets forecast rapid demand growth
- Infrastructure funding available for investment in Alaska



- Cook Inlet has the best carbon sequestration potential on the Pacific Coast of North America
- Allows for “future-proofing” Alaska LNG with transition to net-zero hydrogen/ammonia production



Source: West Coast Regional Carbon Sequestration Partnership

- Advancing the structure and leadership of the project with Strategic Parties consisting of:
  - North Slope producers
  - A major pipeline developer (Enbridge)
  - LNG buyers
  - Banks and financial corporations
- These parties have the technical and financial capacity to bring this project to completion
- Strategic parties have a combined market capitalization of \$1.25 trillion
- Focus is an LNG Facility Strategic Party with significant market capitalization and an LNG development track record

# In Summary

## Economics and Security

- Alaska LNG has lower costs than its key competitors
- Cost of supply independently verified
- Provides energy security for Alaska and U.S. allies

## Federal Permits

- Federal construction approval
- Only permitted LNG export project on the U.S. West Coast

## Environmental Benefits

- Doesn't require LNG tankers to operate from the North Slope
- Will reduce global greenhouse gas emissions
- Will contribute to energy transition and provide potential for hydrogen/ammonia



- We have a window of opportunity
- Alaska LNG is
  - Economic and needed to supply projected LNG demand
  - The only permitted LNG export project on the U.S. West Coast
- Alaska LNG will
  - Contribute to significant reductions in world-wide greenhouse gas emissions
  - Provide energy security for Alaska and our country's allies
  - Be completed under strict environmental requirements and oversight
- We are encouraging Alaskans to participate in the DOE process



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