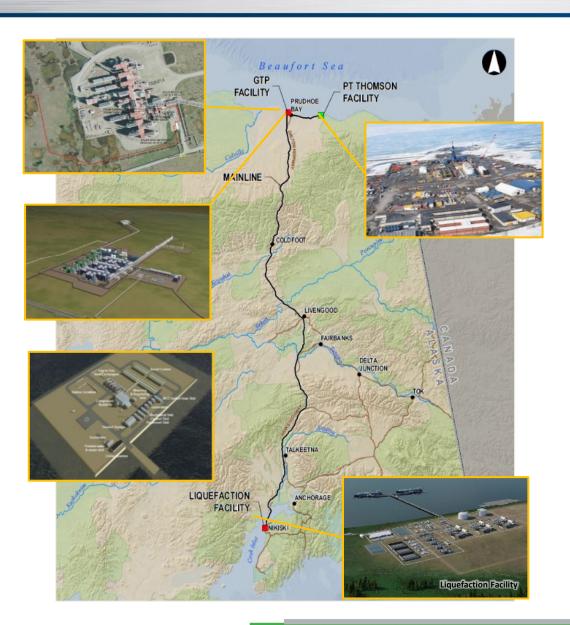
## Alaska LNG Project Update

Brad Chastain, Project Manager October 7, 2021



#### **Alaska LNG Project - Overview**





#### **Producing Fields**

- ~35 TCF discovered North Slope resource
- Anchored by Prudhoe Bay & Point Thomson for 20 years
- Confirmed use of existing North Slope facilities
- Peak Workforce: 500 1,500 people

#### **Gas Treatment Plant**

- Located at North Slope
- 3 trains (1.3 BSCF/day/train)
- Remove CO2 / H2S; Compress for re-injection
- Footprint: 150 250 acres
- Peak Workforce: 500 2,000 people
- Required Steel: 250k 300k tons

#### **Pipeline**

- Large diameter: 42" operating at >2,000 psi
- Capacity: 3.3 billion cubic feet per day
- 8 compressor stations, 1 heater station
- Length: ~806 miles (similar to TAPS)
- Peak Workforce: 3,500 5,000 people
- Required Steel: 600k 1,200k tons
- State off-take: ~3 with initial off-take up to 250 mcf/d

#### **Liquefaction Facility**

- Capacity: up to 20 MTA
- 3 trains (6.67 MTA/train)
- Footprint: 640 1,000 acres
- Peak Workforce: 3,500 5,000 people
- Required Steel: 100k 150k tons
- Storage / Loading
- Terminal: 2 x 240,000 m3 LNG Storage Tanks
- 1 loading jetty with 2 berths; 15-20 tankers per month
- Peak Workforce: 1,000 1,500 people

## **Alaska LNG Project - Regulatory Status**



#### Completed

- Federal Energy Regulatory Commission (FERC) Final Environmental Impact Statement and Section 3 Order
- All 36 Major Federal permits & authorizations completed
- Federal ROWs: Bureau of Land Management, National Park Service
- Alaska DNR State Land ROW Lease
- Alaska DEC Air Permit for the Gas Treatment Plant (GTP)

#### In Process:

Alaska DEC Air Permit for the Liquefaction Facility

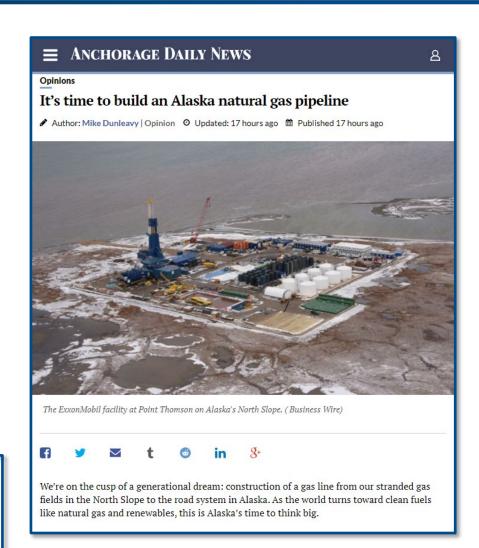
## **Covid Economic Impact- Phased Approach**



# Governor Dunleavey and the AGDC Board supported a phased approach to Alaska LNG

- The phased project would have started with a \$5.9 billion pipeline to Fairbanks
- Constructing the pipeline segment to Fairbanks would have provided energy for Alaskans and significantly de-risk Alaska ING
- The first phase was expected to be predominantly funded by Federal stimulus investments and progress President Biden's low-carbon initiatives

U.S. clean energy infrastructure initiative that will resolve longstanding climate, pollution, and energy problems affecting vulnerable rural populations and strategically located Department of Defense installations



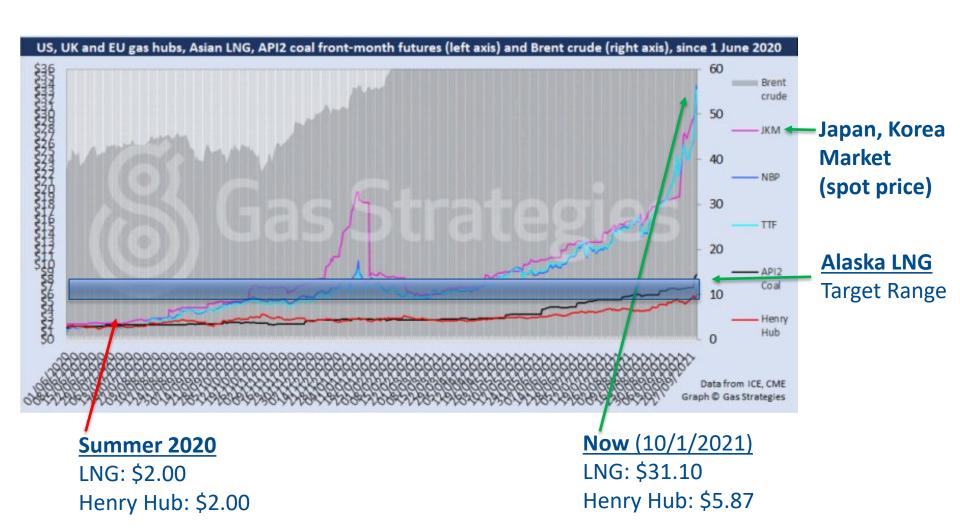
#### **Federal Opportunities - Update**



- Infrastructure and Reconciliation Bills
  - No grant funding allocated for Phase One
  - Amendment authorizing Alaska Natural Gas Pipeline Act (2004) Loan Guarantees for Alaska LNG
    - \$18B (2004) = \$25.6B (2021)
  - Working with Alaska delegation and staff on eligibility language for low carbon energy from Alaska
- National Defense Authorization Act
  - Policy directing Department to look for cleaner burning, lower carbon energy sources for power generation at Arctic military installations

#### **Current LNG Market**





#### LNG Market – Global Outlook



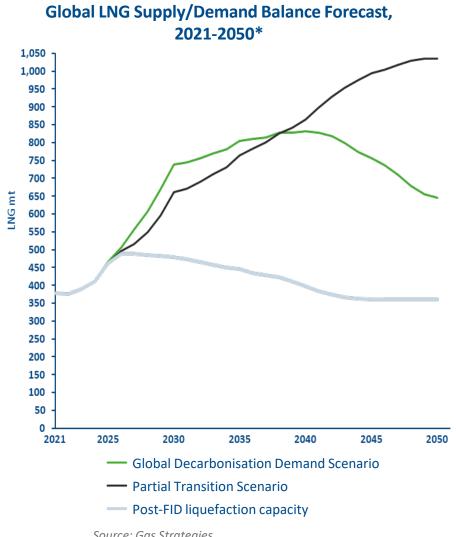
- Two LNG demand scenarios based on different speeds of the energy transition
- Under both scenarios, global LNG demand grows through 2040 and outpaces supply beginning in 2025
- Demand for new LNG supply is driven by Asia coal-to-gas switching and growth in Southeast Asia and India
- Significant levels of LNG capacity will be needed as LNG demand doubles by 2040

#### **Global Decarbonisation Demand Scenario:**

Individual nations' net-zero emissions are met while LNG demand increases in developing countries without net-zero targets.

#### **Partial Transition Scenario:**

Net-zero targets are met with a 10-year delay with an increased near-term focus on coal-to-gas switching.

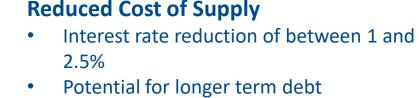


#### **Federal Loan Guarantee**

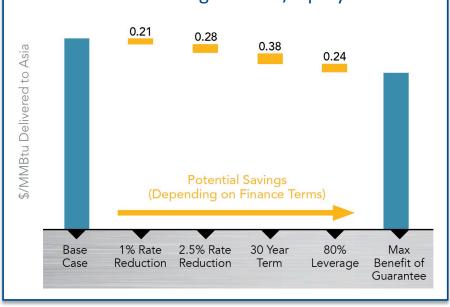


The full faith and credit of the United States will be pledged to pay all of the principal and interest on \$25.6 billion of Alaska LNG debt in the event of a default.

- The Infrastructure Bill includes a loan guarantee for Alaska LNG
  - Principle amount of debt guaranteed up to \$25.6 billion (adjusted for inflation)
  - Up to 80% of the capital cost
  - Term of up to 30 years
- Loan guarantee will be subject to credit terms and requirements of the loan program
- Benefits of the loan guarantee
  - Reduced cost of supply
  - Completion risk mitigation
  - Federal government support and "skin in the game"







#### **Alaska Will Need to Address Two Hurdles**



#### **Fiscal Stability**

- It is difficult to imagine a scenario where the private sector would invest \$38 billion, when any future legislature can essentially change contract terms at any time.
- Most other resource owner states are able to offer a Fiscal Stabilization Clause.
- Compounding this issue is the fact that the State can change it's election for royalty and tax between "in-kind" and "in-value" this project relies on long-term, 20+ year contracts to work and that requires fiscal stability.

## Payment in Lieu of Tax (PILT)

- Property tax for the project is an order of magnitude higher than other projects in North America (\$0 50 MM p.a.).
- Competing projects globally don't pay property tax, or it is back loaded in the project life.

#### And ultimately decide on level of participation

#### State Participation

- State equity participation can help facilitate the project.
- State participation helps create alignment between the state and the project.
- It is not uncommon for to see sovereign ownership in infrastructure.
- The State should only have a minority stake and not an operatorship role.
- Equity participation will also increase the State's take from the project.

## **Alignment of Strategic Parties**



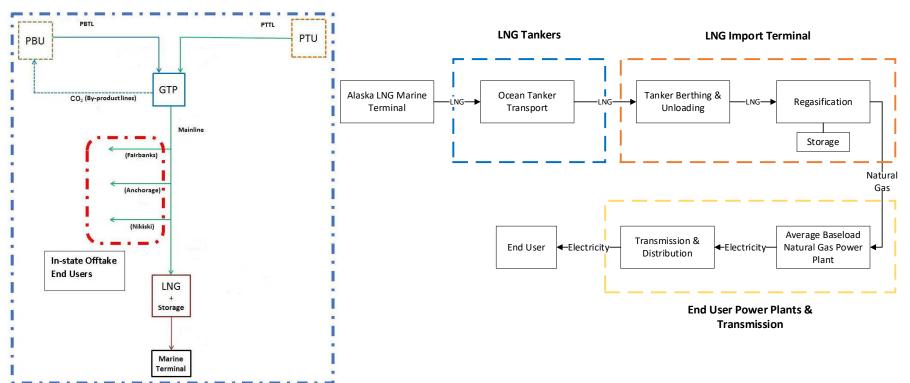
- Advancing the structure and leadership of the project with Strategic Parties consisting of:
  - North Slope producers
  - A major pipeline developer
  - LNG buyers
  - Banks and financial corporations
- These parties have the technical and financial capacity to bring this project to completion
- Strategic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

## Alaska LNG GHG Lifecycle Analysis (LCA)



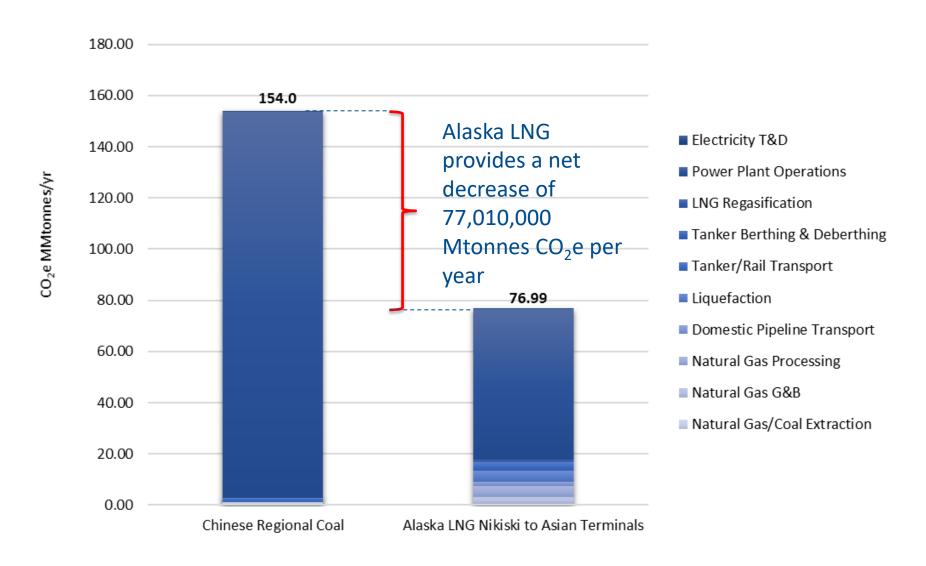
- AGDC contracted with independent third party providers to provide a GHG lifecycle assessment of the Alaska LNG project
- Realistic assessment using publicly available data and NETL methodology

#### Components of the full lifecycle



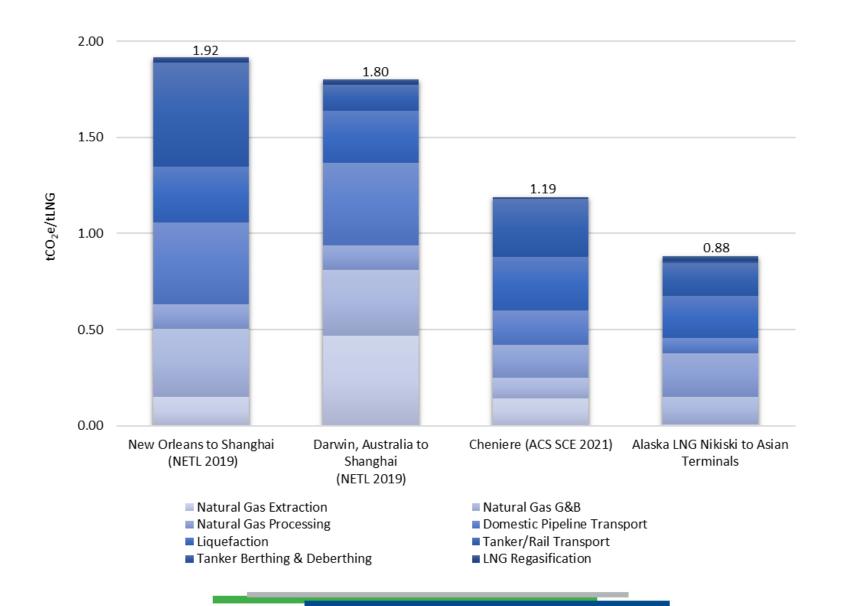
## **Alaska LNG Compared to Asia Coal Emissions**





## **Alaska LNG Compared to Other LNG Sources**





## Reduction of 77,010,000 MT CO<sub>2</sub>e Per Year



#### Is equivalent to eliminating emissions from:

- 16.8 million passenger vehicles driven for a year
- Powering 9.3 million homes for a year
- 19 coal-fired power plants
- Burning 8.7 billion gallons of gasoline

#### Is equivalent to carbon sequestered by:

- 1.3 billion tree seedlings grown for 10 years
- 94 million acres of U.S. forests in a year

## **Alaska LNG - Moving Forward**



- Working with world-class private-sector Strategic Parties to provide investment and lead the Alaska LNG export project forward
- Continuing to optimize the project economics through federal and state support
- Providing public data to demonstrate to stakeholders that Alaska LNG is the least carbon intensive export project in North America and will significantly reduce global carbon emissions
- Encouraging Alaskans to rally behind the project that will bring positive impacts to Alaska for generations

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