

ALASKA LNG

Alaska State Chamber of Commerce Update
January 17, 2018

Keith Meyer, President



Presentation Overview

- Global LNG.
- Stars aligning.
- Financing.
- Export powerhouse.

Mission: Maximize the benefit of Alaska's vast North Slope natural gas resources through the development of infrastructure necessary to move the gas into local and international markets.

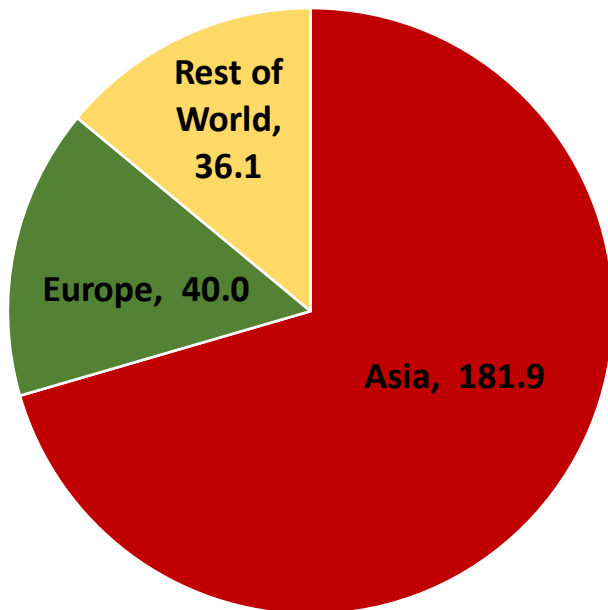


Bcf = Billion cubic feet

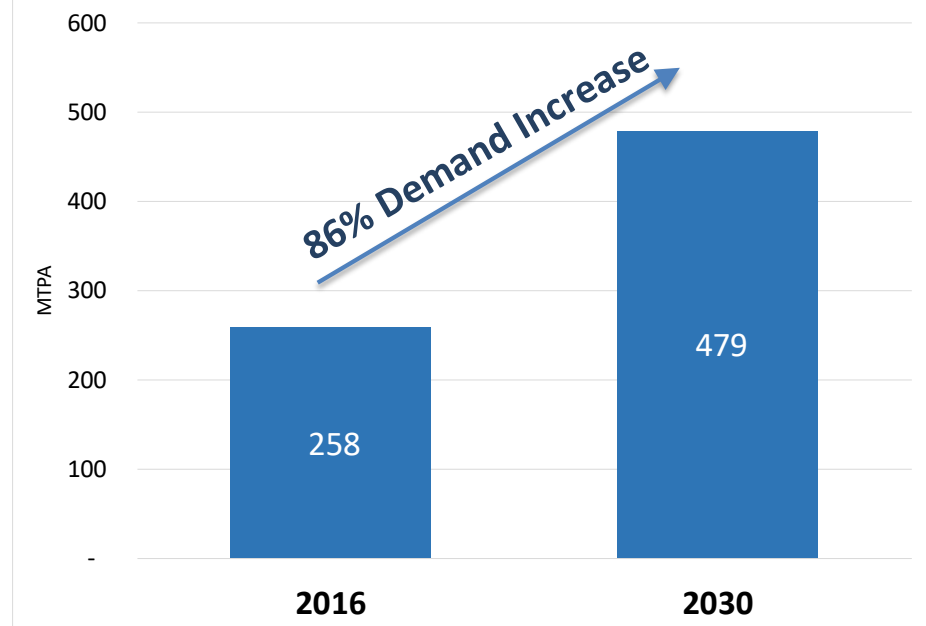
LNG is a Growth Industry

- LNG is a growth industry (\$250 Billion annual by 2030).
- Asia is the biggest LNG market.
- Asia is Alaska's regional market.

Global LNG Demand - 2016
258 MTPA



Global LNG Demand - 2016,2030



Source: Bloomberg

Global Positioning

Alaska is Asia's
closest and most
direct source of
U.S. LNG.

7 to 9 days
shipping.

Direct route; no
third nation or
canal.

Alaska's economic ties are with Asia.
*Alaska's political ties are with the
United States, but our economic ties are
with Asia.* - **The Hon. Walter J. Hickel**



Marketing Effort: Asia-Pacific



AGDC's immediate focus was Asia.

- Build awareness.
- Correct misperceptions.
- Engage customers.



Stars Aligned

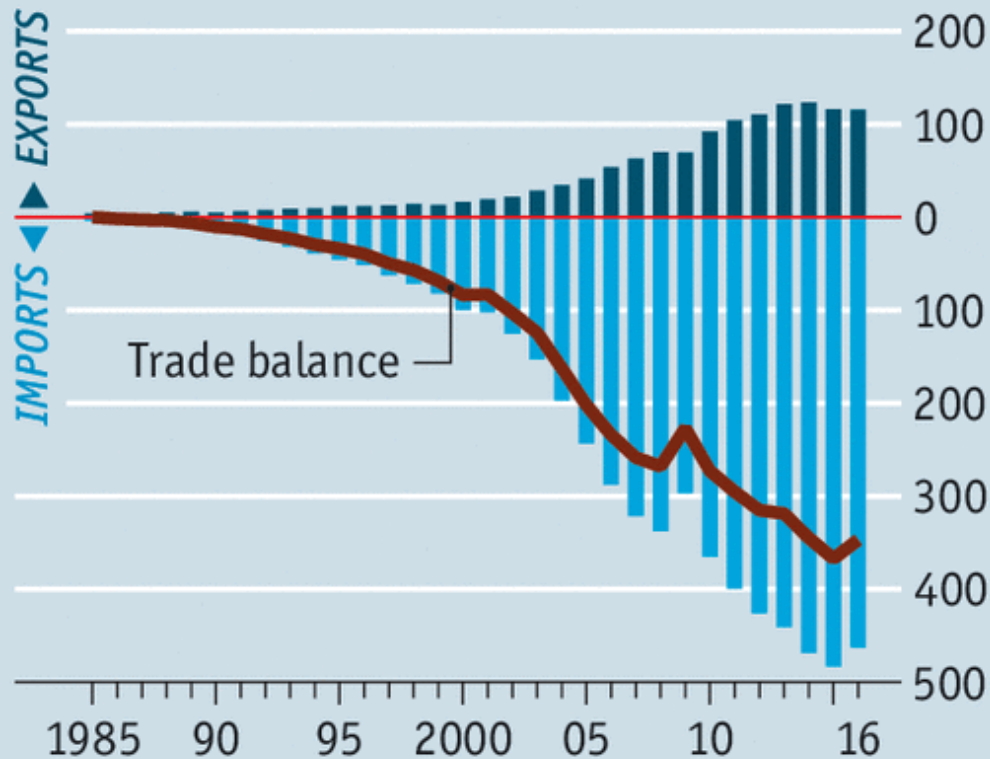
**A number of external factors
aligned favorably for Alaska LNG.**



U.S. Focus on Trade and Energy

It's yuuge

United States goods trade with China, \$bn



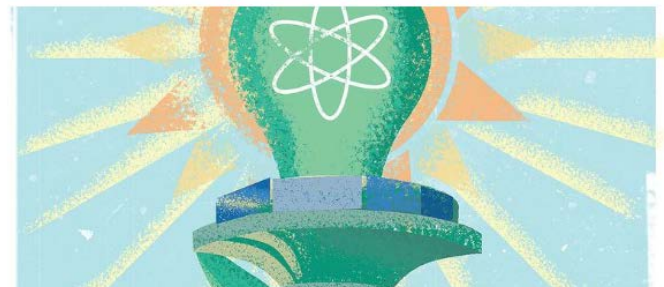
Source: Census Bureau

China needs to buy more from the U.S.



Paving the path to U.S. energy dominance

"Energy Week" highlights the role of American resources in securing prosperity



"If you look at our trade balance, there's one geographic source of our imbalance and that's most importantly China".

- Commerce Secretary Wilbur Ross



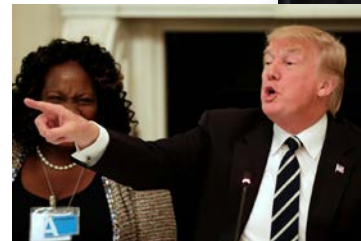
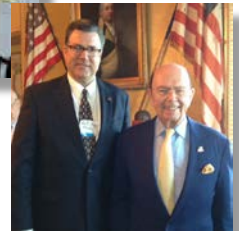
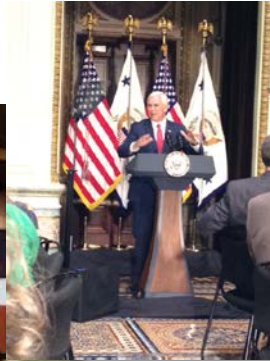
"The only path for energy dominance is a path through the great state of Alaska."

- Interior Secretary Ryan Zinke



In-depth Washington Engagement

- AGDC has significantly ramped up its presence and efforts in Washington.
- Regular meetings and dialog with:
 - Alaska Congressional Delegation.
 - Secretary Ross and U.S. Commerce Dept.
 - Secretary of Interior Ryan Zinke.
 - Natl. Economic Council Director Gary Cohn.
- Fast track status for federal approvals.
- IRS Tax-exempt status.
- *Excellent fit in the U.S. strategy of trade improvement with China and energy dominance.*



America's Project

- Large infrastructure.
- Large construction.
- Resource development.
- Energy export.



AMERICA'S LARGEST ENERGY EXPORT PROJECT

TRANSFORMING ALASKA GAS INTO JOBS AND EXPORTS TO THE ASIA-PACIFIC REGION

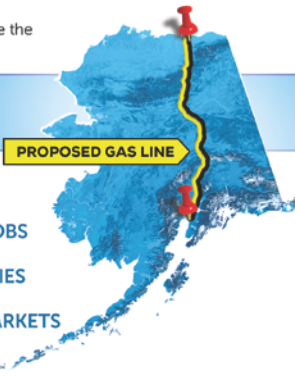
Alaska holds America's largest concentration of proven, conventional, but stranded gas supply. Through the development of an 800-mile pipeline and LNG facility, Alaska can supply domestic projects and can provide a stable source of gas supply to our allies in the Asia-Pacific region. With expedited regulatory approval the project can finalize commercialization and begin construction.

This LNG project will create 10,000 direct jobs and up to 70,000 total jobs without burdening the taxpayers, increase our national energy production capacity, and strengthen commercial ties with our allies.

Alaska gave birth to the US-Japan LNG trade and now seeks to be the strategic supplier to the region.

ALASKA MOVING FORWARD

- NEW ENERGY INFRASTRUCTURE
- 70,000 NEW CONSTRUCTION & RELATED JOBS
- STRENGTHENS ENERGY TIES WITH OUR ALLIES
- IMPROVES TRADE BALANCE WITH ASIAN MARKETS



Alaska LNG will be pivotal and profitable for America.



Alaska Gasline Development Corporation
907.330.6300 | www.agdc.us

China Demand for Natural Gas

Meanwhile... Environment is a priority.



OCTOBER 25, 2017

China leads the growth in projected global natural gas consumption

Natural gas consumption in selected regions, IEO2017 Reference case (2015-40)
billion cubic feet per day

	2015 consumption	projected growth through 2040
China	19	38

LNG? It's a deal!



Trump-Xi Deal Could Fuel A U.S. LNG Boom

By [Irina Slav](#) - May 16, 2017, 4:00 PM CDT



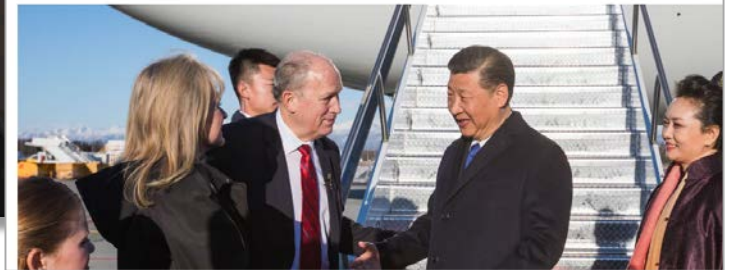
Alaska and China Establish Ties



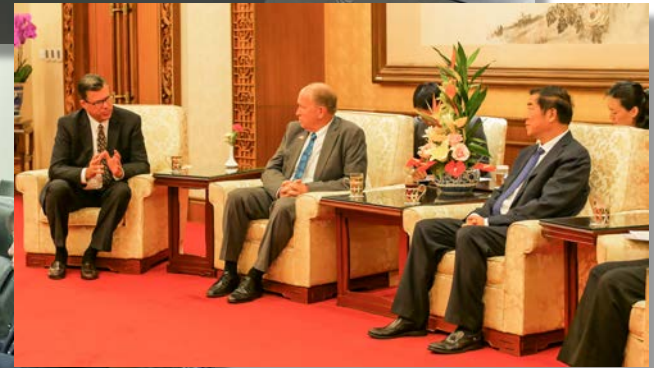
Alaska News

A surprise guest: Chinese president makes Anchorage stopover, meets Gov. Walker and takes in some sights

✍ Author: [Jeannette Lee Falsey](#) © Updated: April 8 📅 Published April 7



Trips, Meetings, Presentations



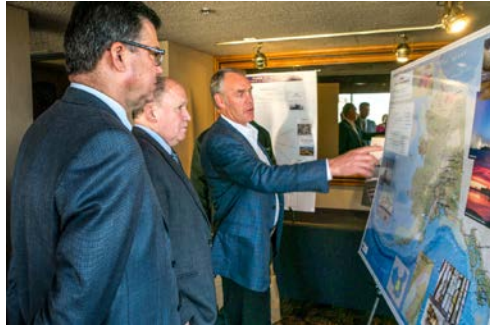
U.S. Trade Mission to China



We're in!

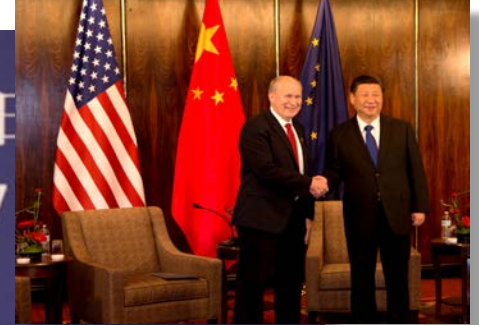
- 100 applied.
- 30 on short list.
- 12 finalists.

Joint Development Agreement



• 北京
• China

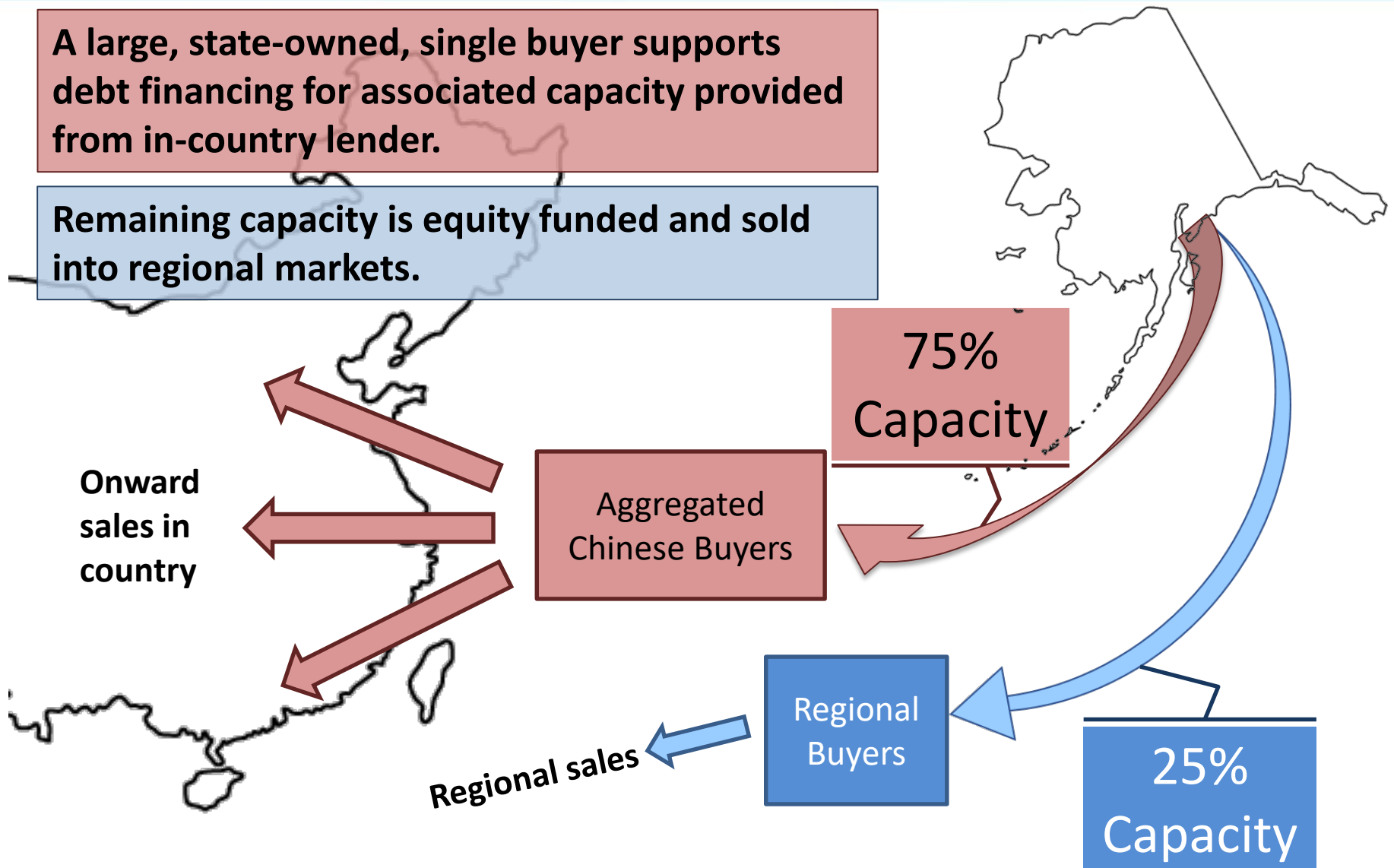
2017年11月9日
Nov 9, 2017



Unified Buyer/Lender Proposal

A large, state-owned, single buyer supports debt financing for associated capacity provided from in-country lender.

Remaining capacity is equity funded and sold into regional markets.



PetroVietnam Gas

- Wholly owned by nation of Vietnam.
- Responsible for all oil and gas resources.
- Developing two LNG receiving terminals in Vietnam.



AGDC and PetroVietnam gas sign MOU in front of US President Trump and Vietnam President Tran Dai Quang; November 10, 2017

From PetroVietnam Press Release:

The LNG import projects including Son My LNG terminal project play a significant role to PetroVietnam/PV GAS in specific and to the energy industry of Vietnam in general by diversifying the gas sources as well as meeting the growing demand of LNG/ gas and electricity in Vietnam in the years to come for the benefit of the national energy security and food security.

The MoUs signing ceremony is part of the remarkable collaborative activities during the very first visit to Vietnam of the US President Donald Trump, setting the milestone for a tighter collaboration in economic development between the US and Vietnam in the coming time.

Korea Gas Corporation (KOGAS)

- **MOU sets framework for cooperation in several areas of Alaska LNG, including:**
 - Korean investment.
 - KOGAS cooperation on EPC of project components and operation.
- **KOGAS is the world's largest single company buyer of LNG in the world.**



AGDC and KOGAS sign MOU in Washington, D.C.; June 28, 2017



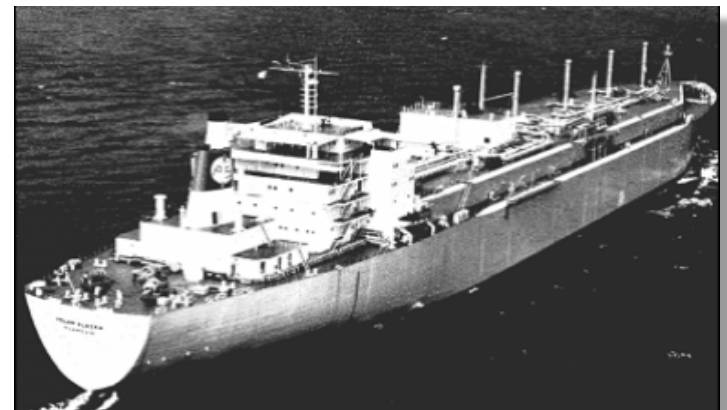
KOGAS technical team inspects Nikiski LNG site; November 6, 2017

Tokyo Gas Co., Ltd.

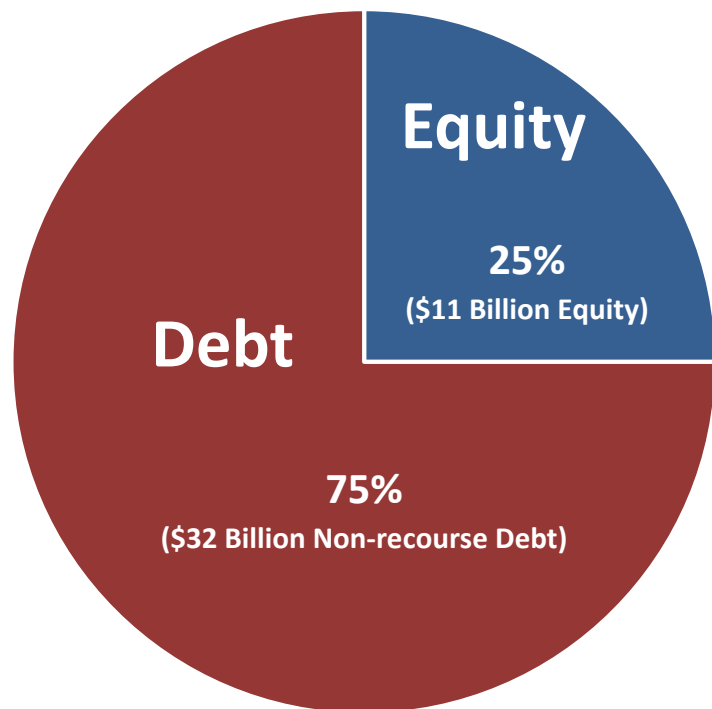
- One of the largest energy utilities in Japan.
- Letter of Intent sets forth the basic principles upon which AGDC and Tokyo Gas Co., Ltd. agree to collaborate on the following:
 - Purchase of LNG from AGDC.
 - Possibility of other opportunities to advance Alaska LNG.
- Continuation of decades-long relationship between Alaska and Tokyo Gas.
- Helps round out sales volumes from Alaska LNG.



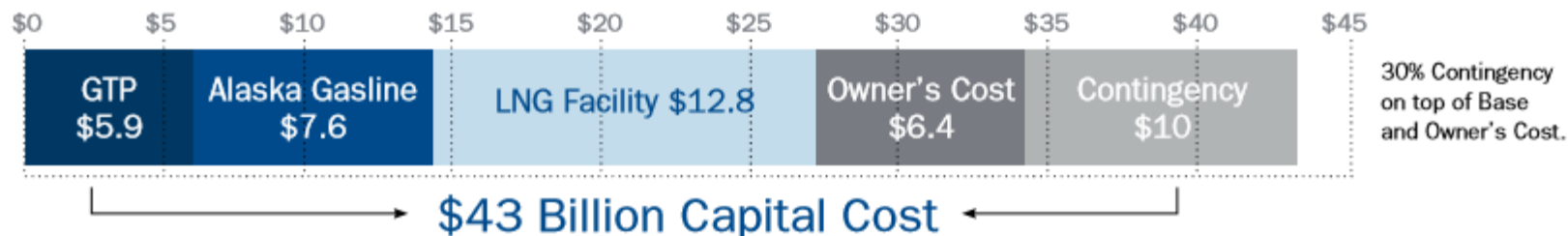
AGDC and Tokyo Gas Co., Ltd. sign LOI in Tokyo, Japan; December 4, 2017



Alaska LNG Capital Structure



- Base case: 42-inch, three train, 20 Mtpa design.
- Total Capital Cost = \$43 Billion.
- Potential for phased development.

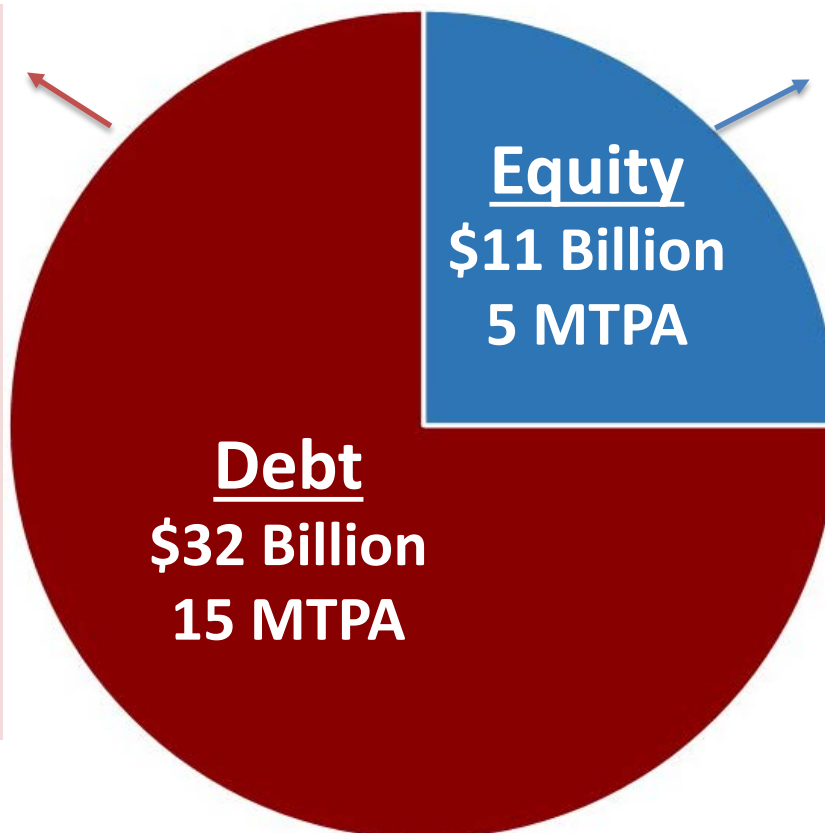


Capacity and Capital Cost

(Total 20 MTPA; \$43 Billion)

Debt

- 75% of capital cost.
- Being exchanged for 75% of capacity for life of loan up to 30 years.
- Plus 75% of operating expense.
- Plus cost of gas.



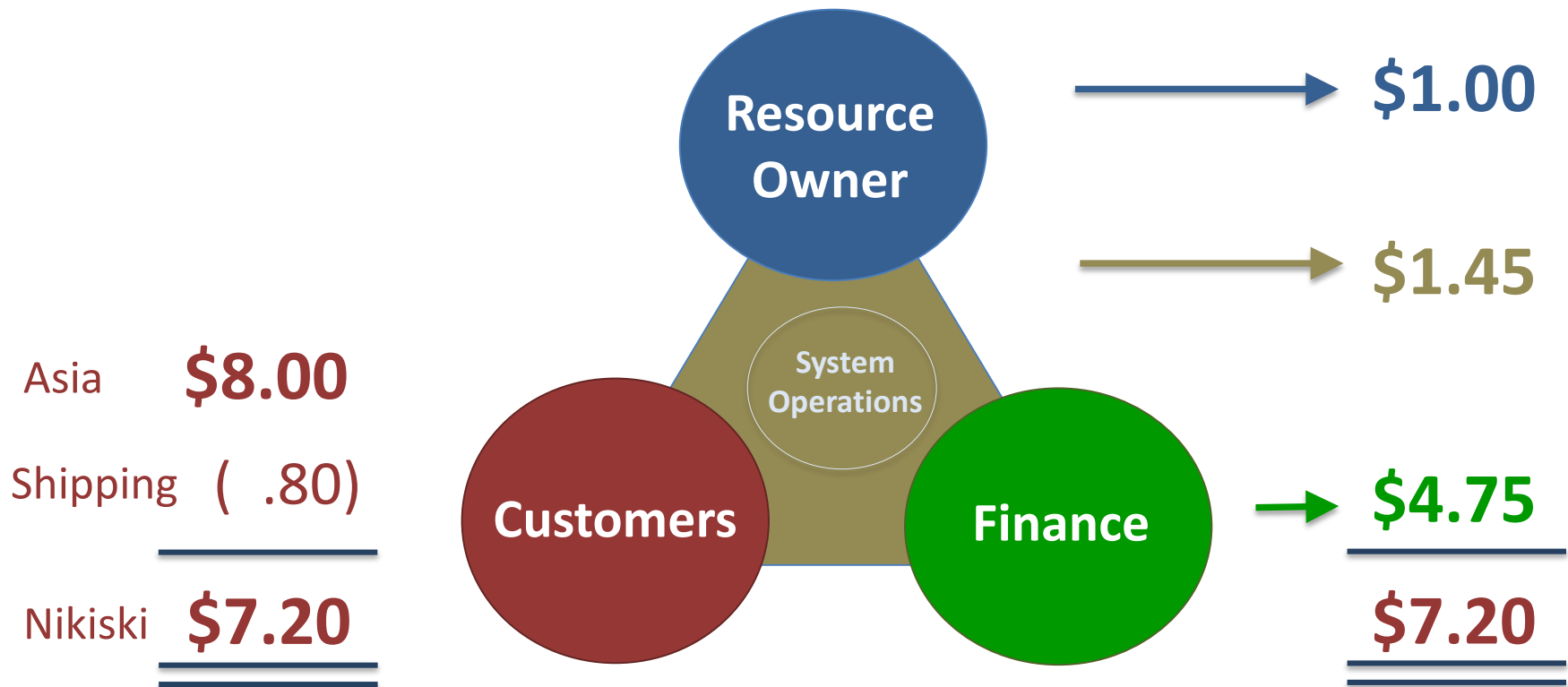
Equity

- 25% of capital cost.
- 25% of capacity.
- 100% of project ownership.
- 25% of operating expense.
- Plus cost of gas.

Strategic debt provider takes 75% of project capacity for life of loan to retire debt.
Equity owners can sell 25% of capacity to generate equity return.

Balancing Three Drivers

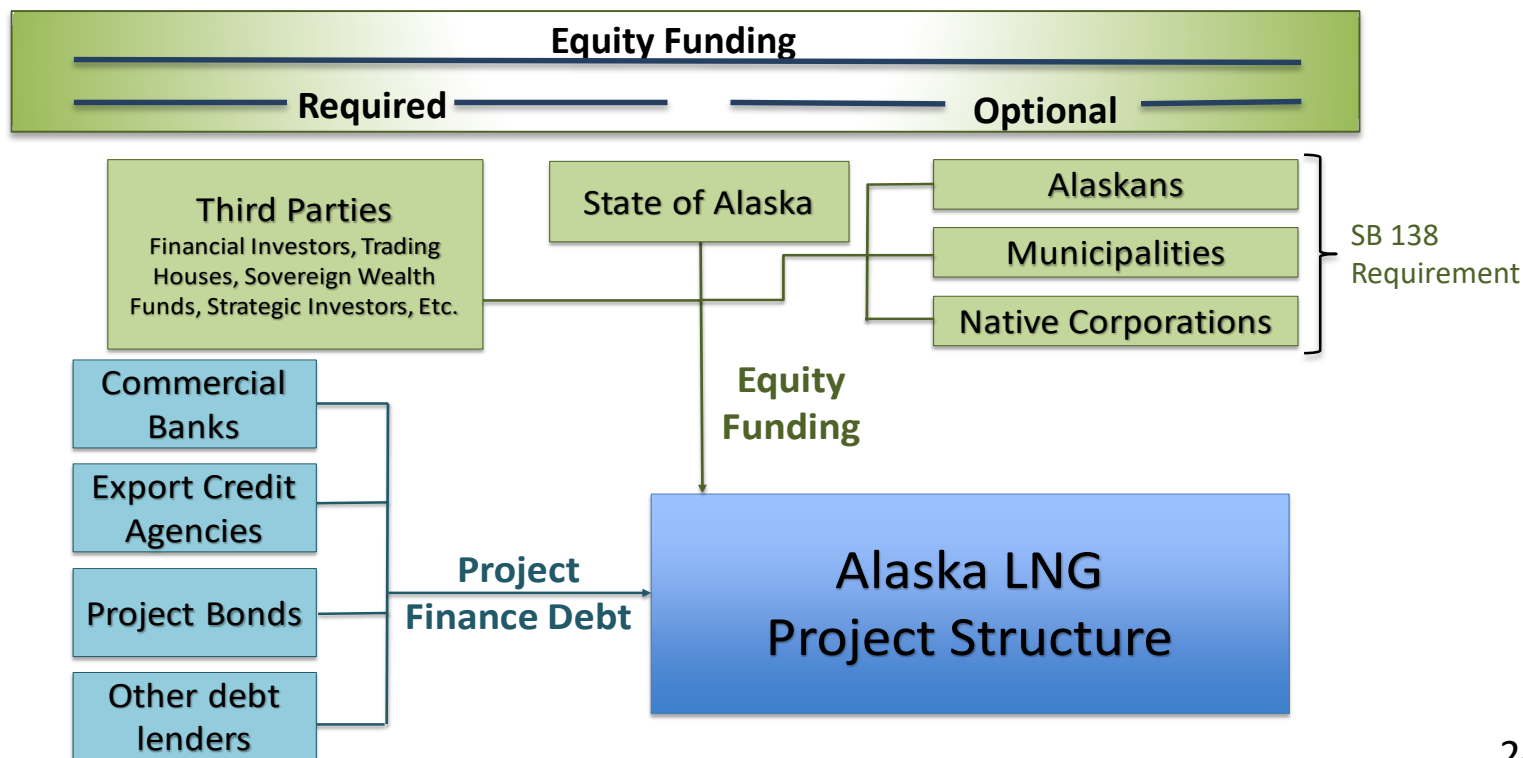
The project is economic to all stakeholders under the current structure.



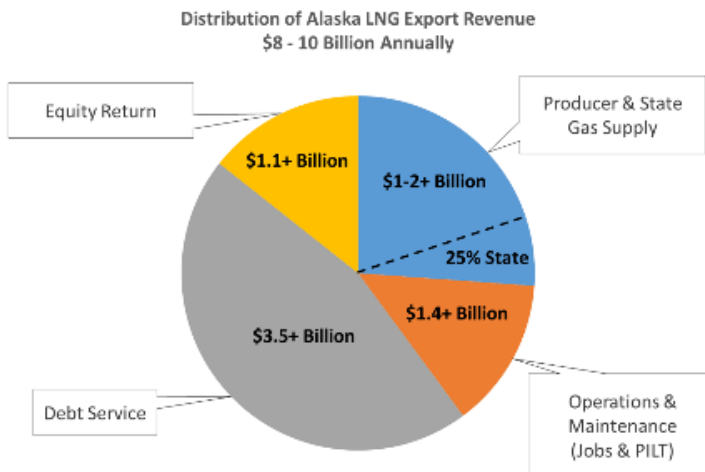
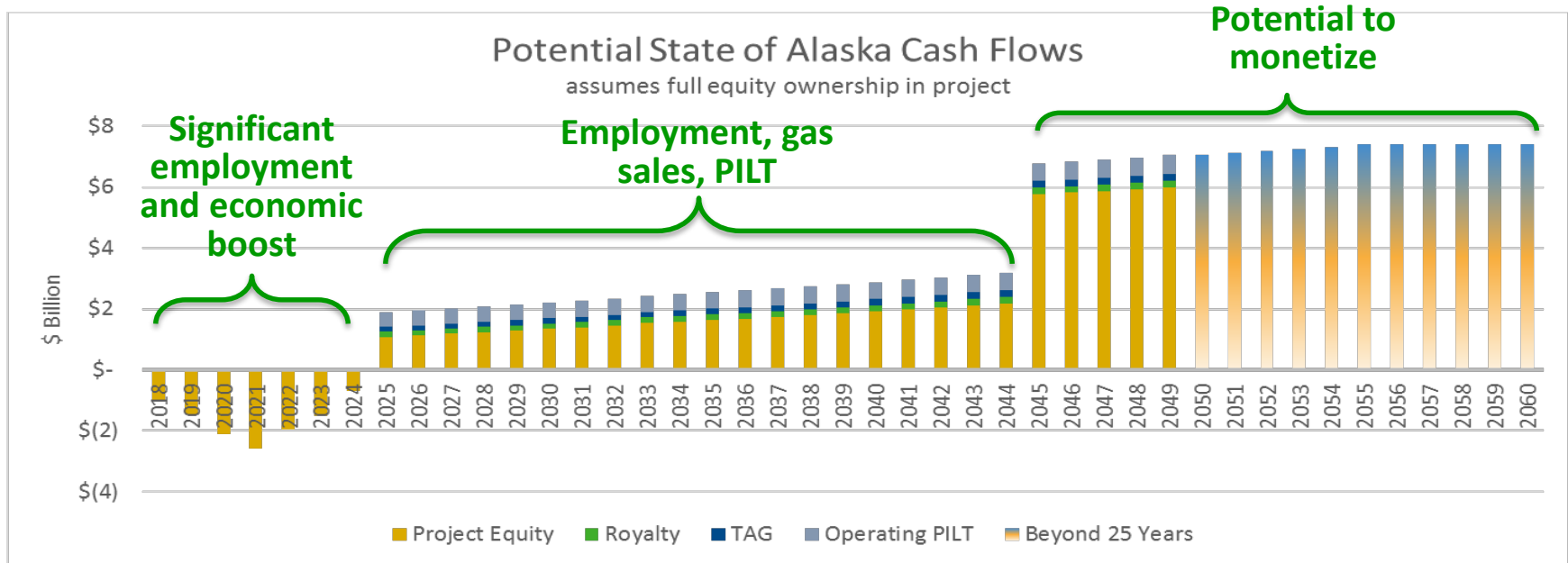
Financing Structure

Equity investment in the project will be required; pursue a development path to provide the State with an ability to invest, but not the requirement to invest; Alaskans also to have investment option.

- Structure to receive third-party funds.
- Equity offering in-state, then beyond.



Investment Profile – State of Alaska



Equity-only ROE:

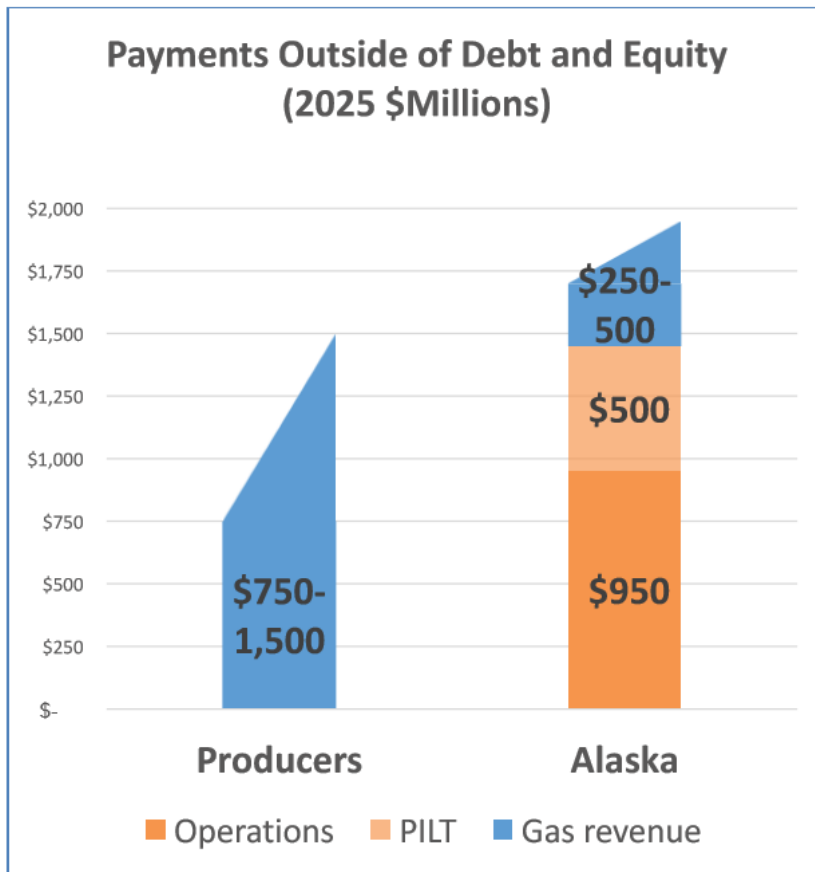
- 8% through initial period.
- 10% life of project.

Equity ROE plus RIK/TAG and PILT:

- 13% during initial period.
- 15% life of project.

Non-Equity Benefits to Alaska

The gasline and LNG infrastructure provides enormous value to Alaska; there is a significant opportunity cost of not developing the project.

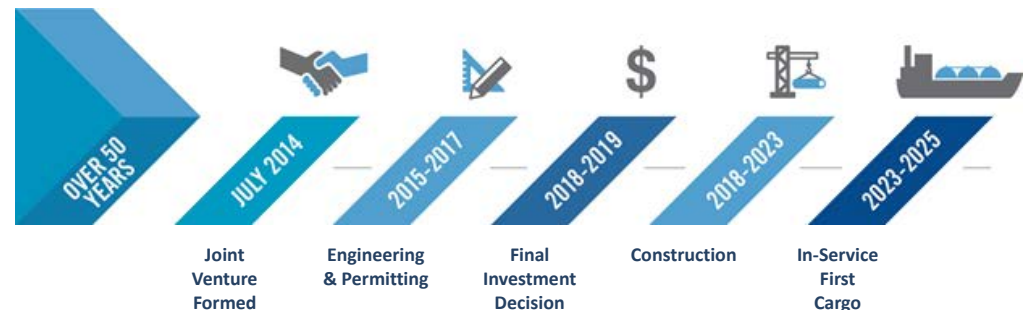
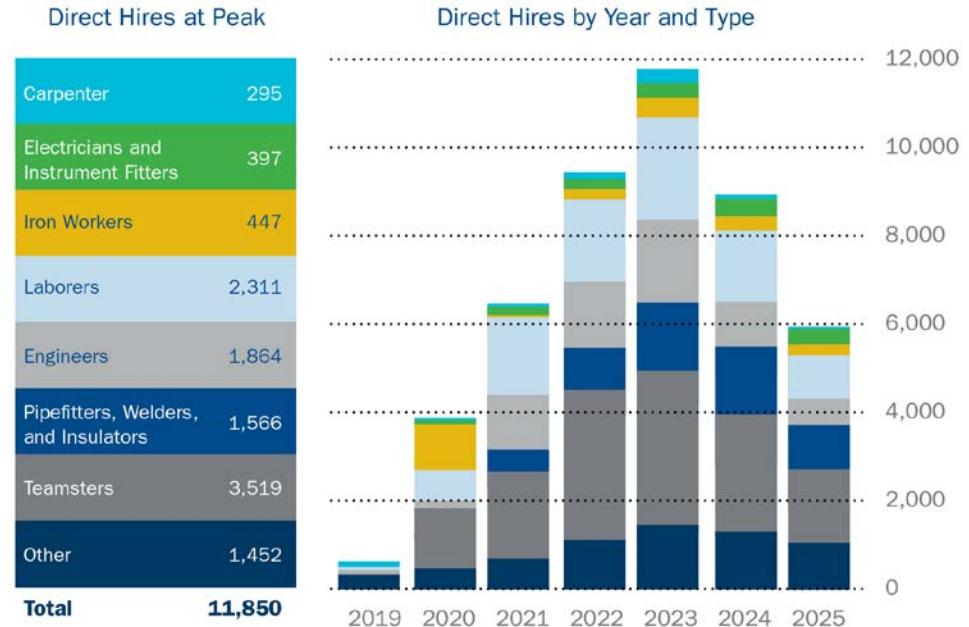


Item	Annual Value	State's Share/yr	
Gas Resource	1 TCF/yr @ \$1-2/Mcf =\$1-2 Billion	25%	\$250-500+ MM
PILT	\$450-500 MM	100%	\$450-500 MM
Operations	\$950 MM	100%	\$950 MM
Equity Return	\$1.1 Billion	0 to 100%	
Net Revenue After Debt Retirement	\$6 Billion	0 to 100%	

- Opportunity for the State to generate \$1.6-\$2.0B per year upon project completion.
- Alaska can elect to be an equity investor.
- Significant upside opportunity given long-term LNG price forecasts.

Jobs for Alaskans

- Alaska LNG will create a **construction employment boom** with a long-term employment future.
- Alaskans can begin training;** demand for employment is expected to outstrip available trained workforce.
- Indirect and induced jobs will spread the benefit of the Alaska LNG project** to even more Alaskans.
- Every trade will be needed** to construct the Alaska LNG project.



Gas for Alaskans

- Lower cost energy for Alaskans.



- Blue sky for Beijing and clean air for Fairbanks.

For the past 30 years, China has tapped coal for about two-thirds of its energy needs, resulting in carbon dioxide and particulate emissions that have significantly degraded the nation's air quality and impacted the global climate.

In an effort to address both concerns and provide a backup fuel for intermittent renewables, China is working to increasingly replace coal with cleaner-burning natural gas. As a first step, the government aims to boost the share of natural gas in its primary energy supply from 6 to 10 percent by 2020.



The Alaska Gasline will provide clean fuel to reduce particulate pollution in Fairbanks.

Alaska LNG can improve China's Air Quality and offset 80 million tonnes of CO2 per Year.

Investment in Alaska's Future

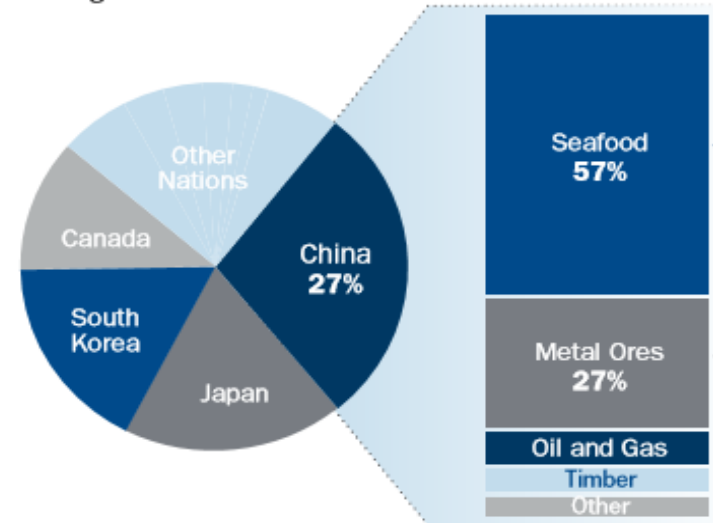
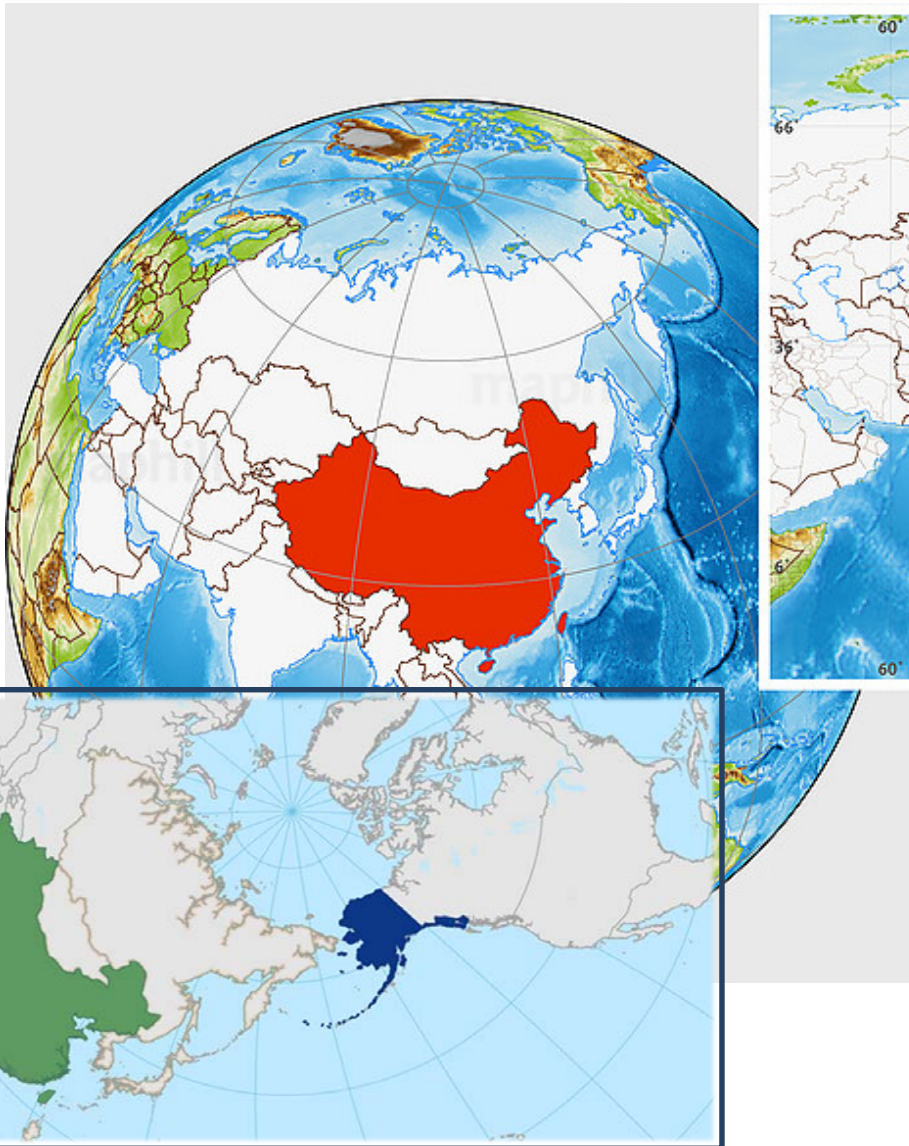


- Alaska LNG will be the biggest **economic driver in Alaska** since the construction of the Trans Alaska Pipeline System (TAPS).
- Alaska LNG project will spur **new resource development projects**, including mining projects and other industrial and commercial developments.
- Low cost, clean burning natural gas will spur **economic development for the next generation**.

Focus: China



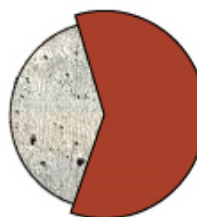
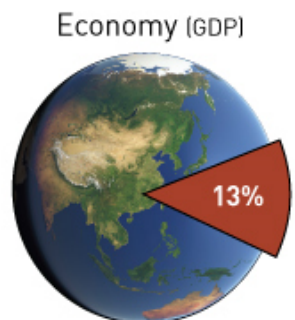
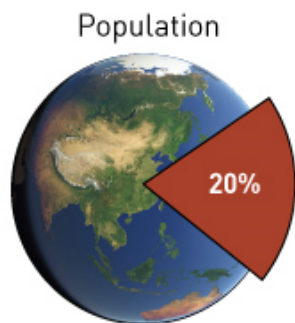
China: Alaska's Export Partner



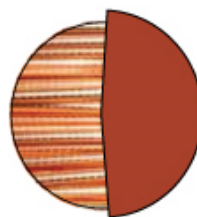
China as a Resource Buyer

China is a major consumer of raw materials that can be produced in Alaska.

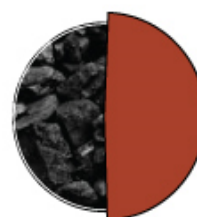
China share of world raw material consumption



Concrete
60%



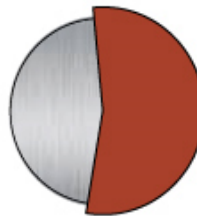
Copper
48%



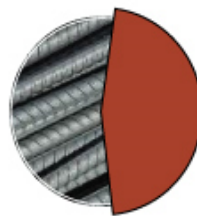
Coal
49%



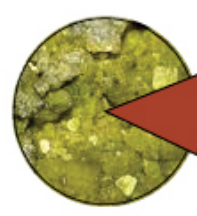
Rice
30%



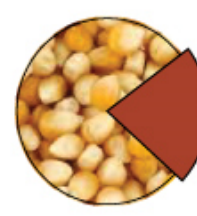
Aluminum
54%



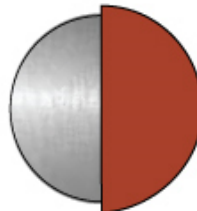
Steel
46%



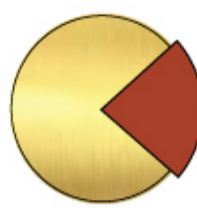
Uranium
13%



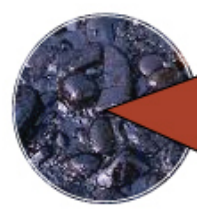
Corn
22%



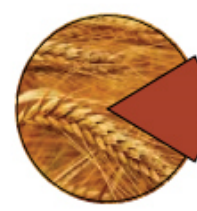
Nickel
50%



Gold
23%



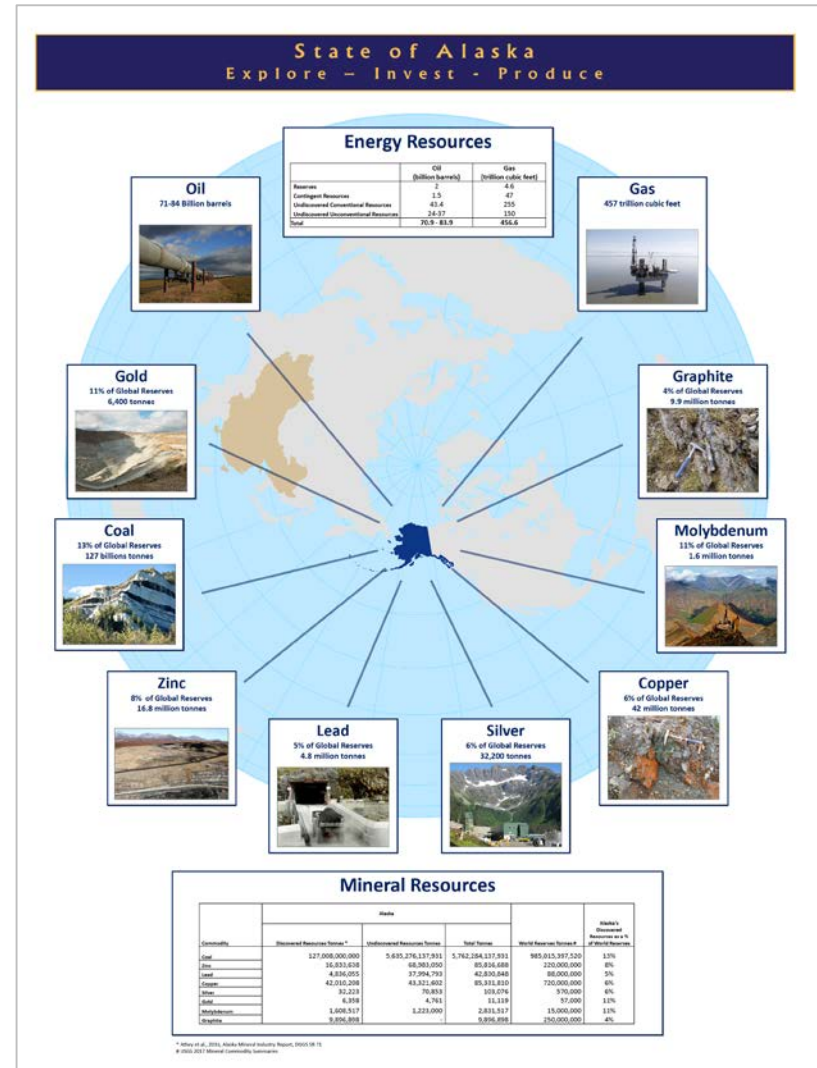
Oil
12%



Wheat
17%

Alaska as a Resource Neighbor

- Alaska is a resource development state.
- 4 trillion tons of high quality coal: one ninth of world's known coal resource.
- **World-scale lead/zinc deposits:** including the world's largest zinc mine.
- **World-scale gold and copper mines:** numerous existing and potential.
- **Graphite:** America's highest grade and largest, large flake graphite deposit.
- **Significant rare-earth deposits.**



U.S. Export Engine

- Major resource base in many commodities.
- Gas, oil, and coal for energy buyers.
- Mining projects, enabled by Alaska LNG will further enhance trade.



**Alaska can be the
resource export
powerhouse for
the United States**

- **Big project.**
- **Achievable.**
- **Alaskans have done it before;**
 - LNG at Nikiski,
 - Pipeline down the corridor,
 - Gas treating on the North Slope.
- **Asia is the customer.**
- **Future opportunities beyond LNG.**

The stars are aligned, seize the opportunity.

Get Involved.

Get Ready.

Get Engaged.



www.agdc.us

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