

ALASKA LNG

Alaska Municipal League
November 16, 2017



- Tim Navarre, Chairman, Community Advisory Council
- Frank Richards, Regulatory Overview
- John Tichotsky, International and Project Economics
- Nick Szymoniak, In-State Benefits

AGDC'S TWO MAJOR PROJECTS

- AGDC is the owner of two Projects



- ✓ State's priority project
- ✓ Below \$45 billion for LNG export project
- December 2016 became state-led



- ✓ State's back-up project
- ✓ \$10 billion in-state gas pipeline
- Currently 100% state owned

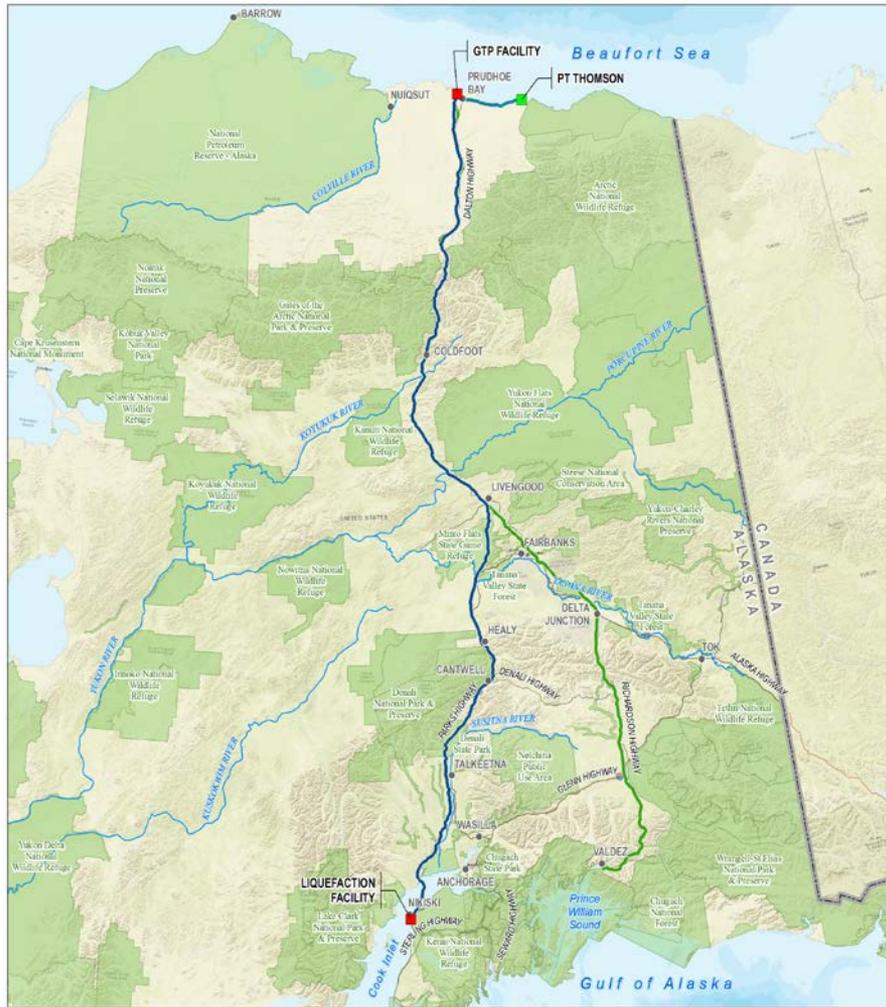
- Either project is capable of delivering gas to Alaskans – but the projects vary significantly in size, scope and cost
- AGDC is also responsible for planning and developing gas off-takes within Alaska regardless of which project is built

ALASKA LNG IS MOVING FORWARD



- **Gas Treatment Plant**
 - Located in Prudhoe Bay alongside existing gas infrastructure.
 - Removes CO² that is produced with the natural gas.
 - Provides high-quality, clean natural gas to the Alaska Gasline.
- **Alaska Gasline**
 - 807 mile long and buried.
 - 42 inch pipeline.
 - 8 compressor stations.
 - Provides natural gas to Alaska communities, resource development projects, and the LNG facility.
- **LNG Facility**
 - Located in Nikiski.
 - Up to 3 production trains.
 - Capacity to export 20 MTPA of LNG.
- **LNG Carriers**
 - Fleet of 20 tankers will transport the LNG to markets in Asia.
 - 50 year history of LNG carrier traffic moving through Cook Inlet.

THOROUGHLY STUDIED ROUTE



- Pipeline route goes through an existing and well-defined transportation/utility corridor.
- Previous environmental reviews:
 - Alaska Natural Gas Transportation System (ANGTS) FEIS 1976.
 - Trans-Alaska Gas System (TAGS) FEIS 1988.
 - Alaska Stand Alone Pipeline (ASAP) FEIS 2012.

FERC Natural Gas Act Section 3 application:

- Filed on April 17, 2017.
- 60,000+ pages.
- Anticipating publication of Environmental Impact Statement (EIS) schedule.

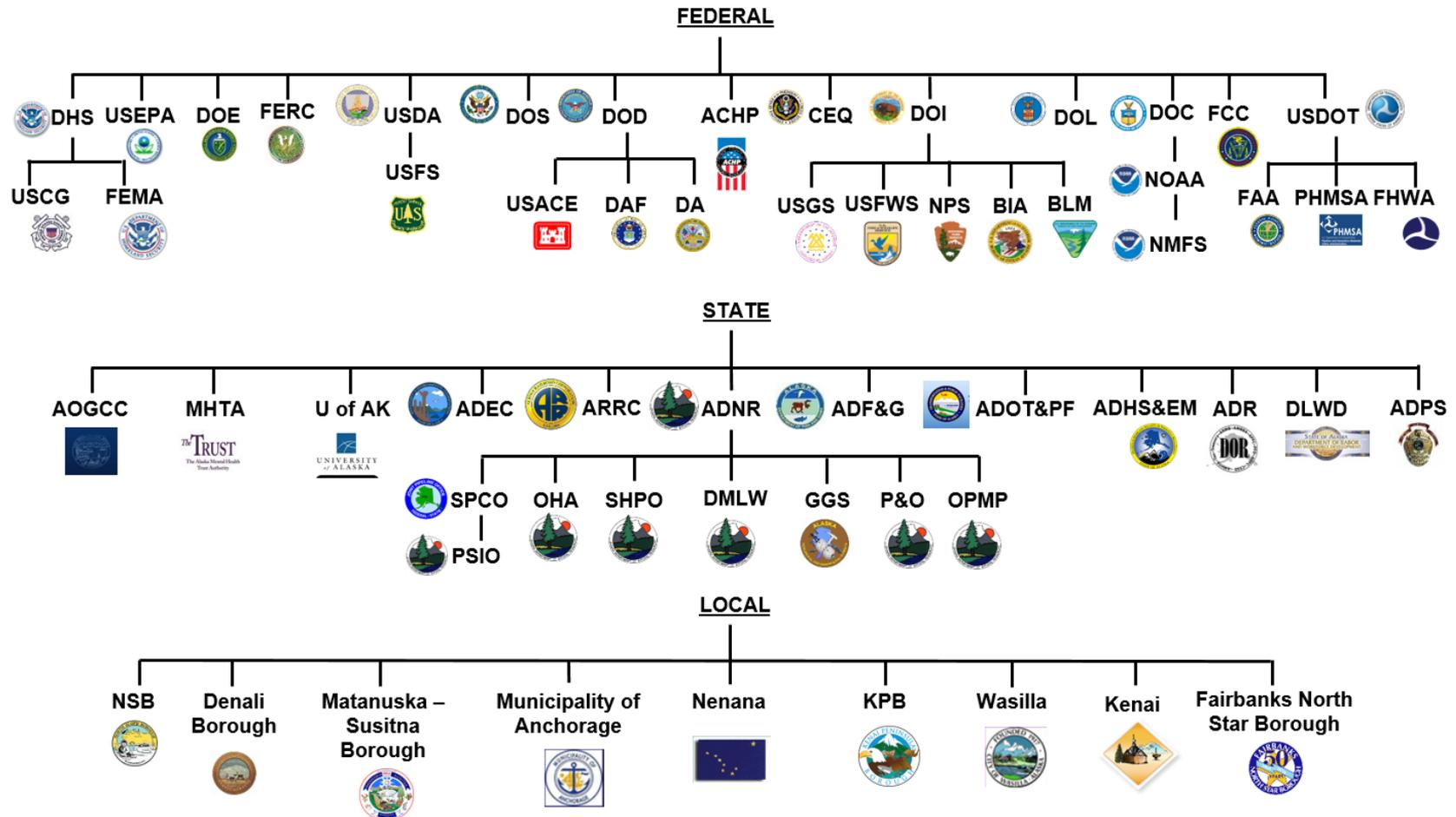
Continued engagement through application review:

- Responding to 801 environmental data requests.
- Engaging with regulatory agencies.



REGULATORY PROCESS - FERC

FERC leads NEPA process – umbrella for creation of all other permit applications.
Requires collaboration with cooperating and reviewing federal, state, Alaska Native, and local entities.



FAST-41 APPLICATION/ACCEPTANCE

Fixing America's Surface Transportation Act (FAST-41)

- Trump Administration recommended.
- Application: August 7th – Acceptance: August 17th.
- Enhanced coordination.
- Increased accountability.
- Permitting dashboard.
 - Permitting timetable within 60 days.
 - Comprehensive schedule for ALL federal permits.
- Steering Committee reports to White House.
- Transparency for public.
- Requires federal agencies to report to OMB, if delays.
- State permitting agencies may participate.

PRESIDENTIAL EXECUTIVE ORDER

Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure – August 15, 2017

- Major Goals:
 - Environmental reviews & authorizations ~ 2 years.
 - Performance accountability.
 - Develop and follow permitting timetable.
 - One federal decision.
- CEQ-led Interagency Working Group.
- Energy Corridors of Federal Lands.
 - Expedited environmental reviews.
- All federal authorizations within 90 days of Record of Decision.

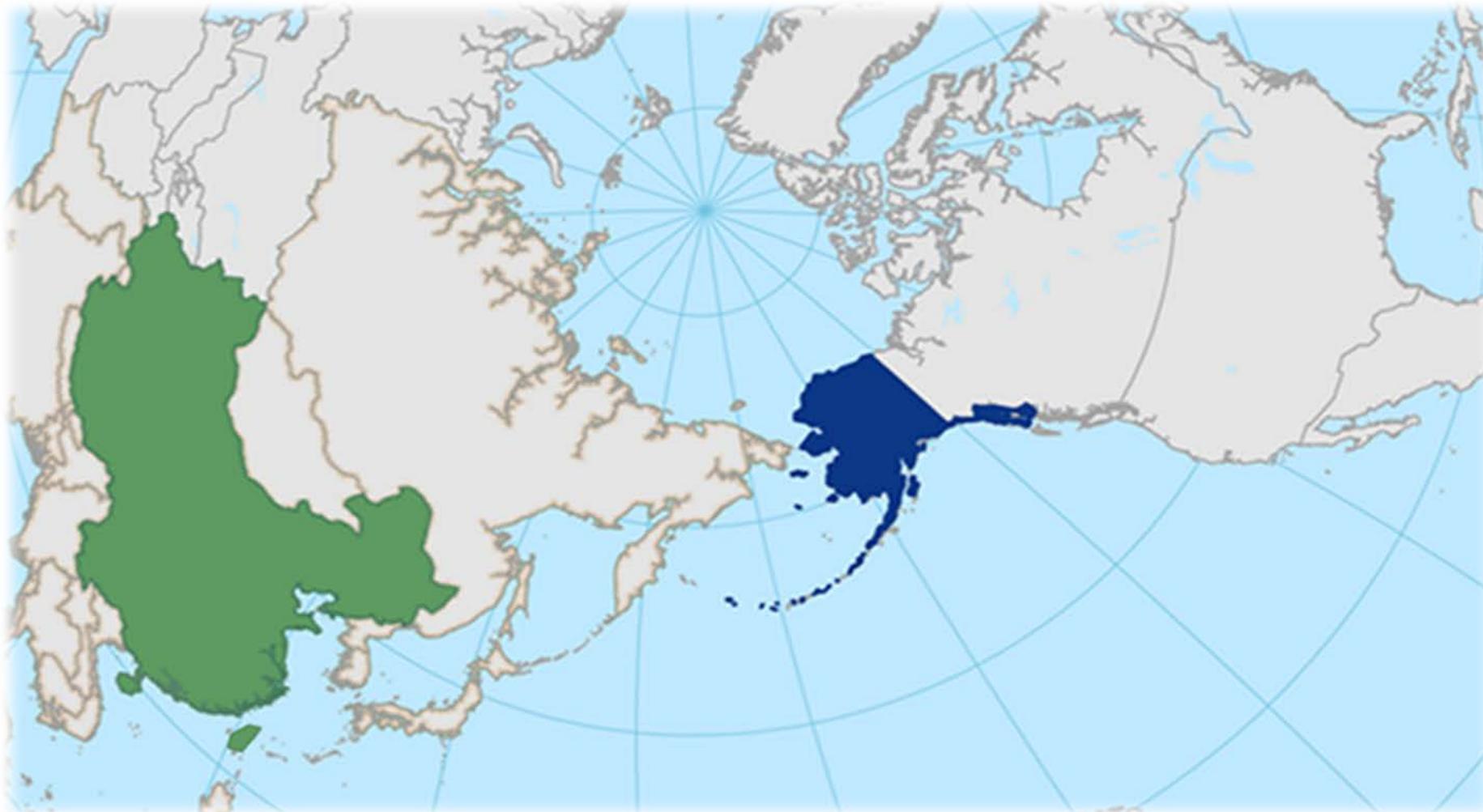
FEDERAL SUPPORT

- **Congressional Delegation:**
 - Denali Park provision in Senate Energy Bill.
 - Looking at ANGPA (2004) revisions.
 - Nominees briefed on Alaska LNG.
- **White House Meetings and Working Session:**
 - Council on Environmental Quality – NEPA and Wetlands Policies.
- **Trump Administration Cabinet Members:**
 - Strong support with action:
 - Rationalized permitting process.
 - New policies and EO's executed.
 - Agencies working to support.

REGULATORY TIMELINE

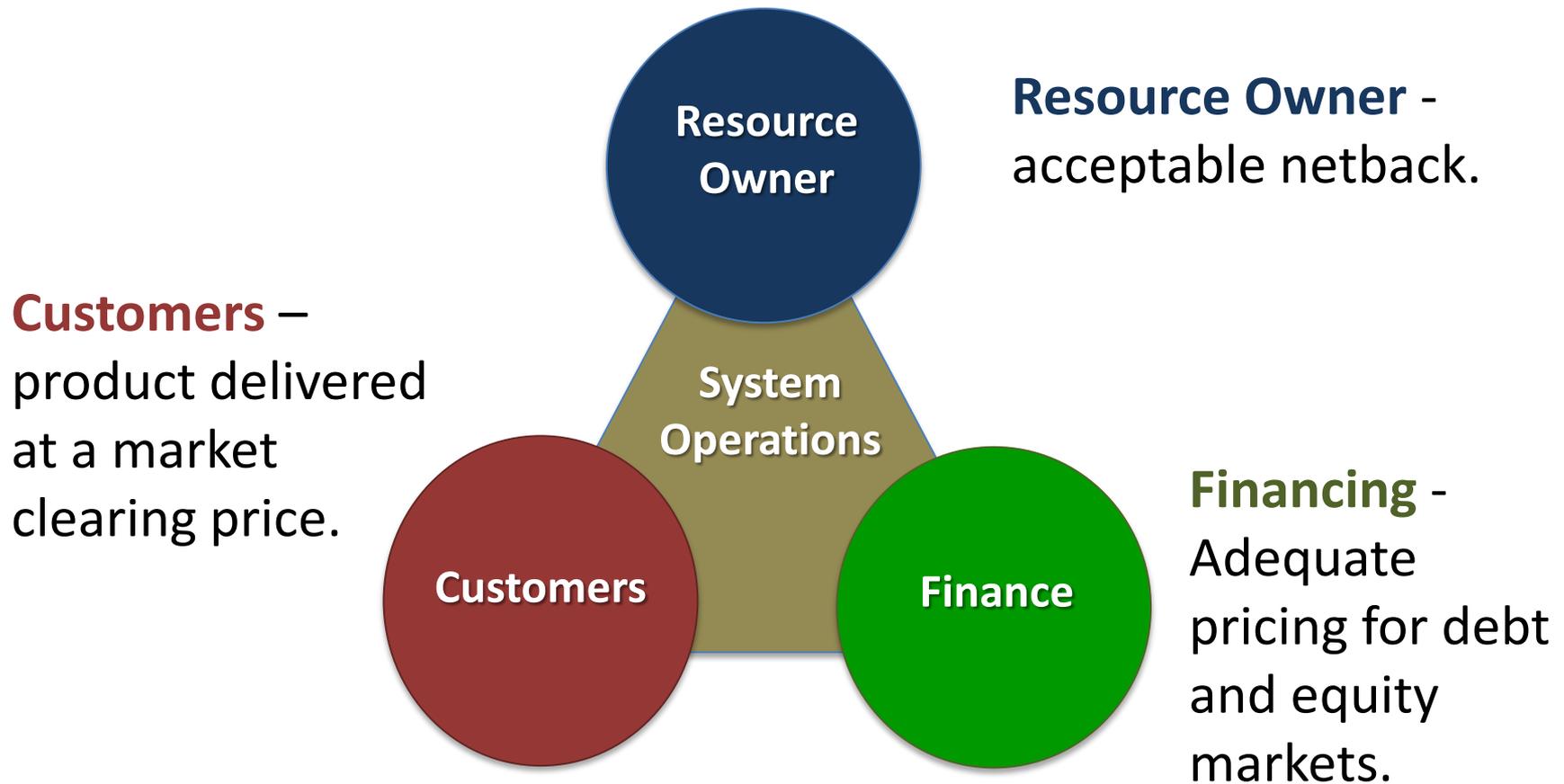
ALASKA LNG TIMELINE															
2014 – 2016 Producer Led Effort	<p style="text-align: center;">\$600 million of engineering, environmental, and science completed to advance permitting of Alaska LNG under Producer led effort.</p> <p style="text-align: center;">State of Alaska takes lead – December 2016</p>														
2017 and Beyond AGDC Led Effort	<table border="1"> <tr> <td style="text-align: center;">April 2017</td> <td>AGDC Files FERC Application</td> </tr> <tr> <td style="text-align: center;">August 2017</td> <td>Fast Act Approval</td> </tr> <tr> <td style="text-align: center;">August 2017</td> <td>Presidential Executive Order</td> </tr> <tr> <td style="text-align: center;">November 2017</td> <td>Joint Development Agreement</td> </tr> <tr> <td style="text-align: center;">December 2017</td> <td>EIS Schedule Published</td> </tr> <tr> <td style="text-align: center;">December 2018</td> <td>Final EIS Published</td> </tr> <tr> <td style="text-align: center;">February 2019</td> <td>Record of Decision</td> </tr> </table>	April 2017	AGDC Files FERC Application	August 2017	Fast Act Approval	August 2017	Presidential Executive Order	November 2017	Joint Development Agreement	December 2017	EIS Schedule Published	December 2018	Final EIS Published	February 2019	Record of Decision
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CHINA: ALASKA'S EXPORT PARTNER



PROJECT ECONOMICS REQUIRES BALANCE

Three key drivers have to be balanced to make the project economic.



THE CHALLENGE

- **A large capital intensive project.**

- Requires funding of up to \$43 billion if all LNG production trains are constructed together.
- Cost of Alaska LNG is in line with some global LNG projects, but relatively high compared to other U.S. LNG projects due to pipeline.

- **Project transferred to the state.**

- From a pipeline owner and infrastructure investor perspective – both of which are willing to accept lower profits in exchange for long-term stability and pricing – the project can be very economic if structured properly.
- Producers were involved in the initial phases of the project, but due to the decline in global oil prices, determined the project was not as profitable and approached the state to take control of the project and restructure the project as a low-cost infrastructure project.

- **Low oil and gas prices.**

- Oil and gas prices have dropped in recent years and may stay low.
- Profit potential on investments by oil and gas producer companies has dropped, which forces responsible producers to prioritize their global projects.

- **Alaska LNG – an infrastructure project.**

- The State of Alaska , through AGDC, agreed to take over the Alaska LNG project.
- In order to compete in the global LNG arena, the project needs to be economic in 3 areas:

1. The global LNG customers, who now have many options.

2. The debt and equity financial markets, who need to earn a reasonable return.

3. The State of Alaska has to be satisfied that the price for the gas supply is adequate to justify selling gas into the system.

MEETING THE CHALLENGE

- AGDC developed a **unique proposal** for large LNG buyers and banks to work in concert with AGDC:
 - Structure is called “debt for equity.”
 - Proposal is referred to as “G2G”, which stands for “Government to Government,” because it was initially developed as a comprehensive proposal for large government-owned buyers and banks, which are prevalent in China.
- The proposal envisions **75% of the funding to come from the buyers**, in exchange for an equivalent amount of LNG capacity going back to the buyer.

JOINT DEVELOPMENT AGREEMENT

ALASKA GASLINE
DEVELOPMENT CORP.



ALASKA
GASLINE
DEVELOPMENT CORP.



中国投资有限责任公司
CHINA INVESTMENT CORPORATION

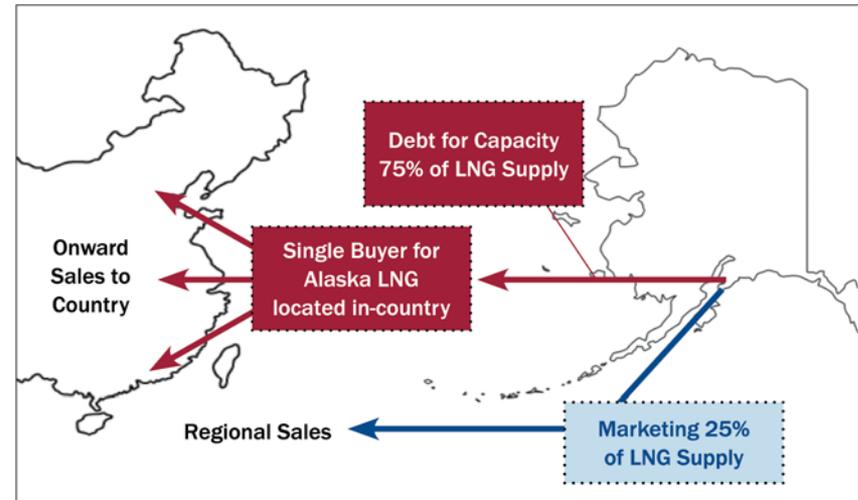
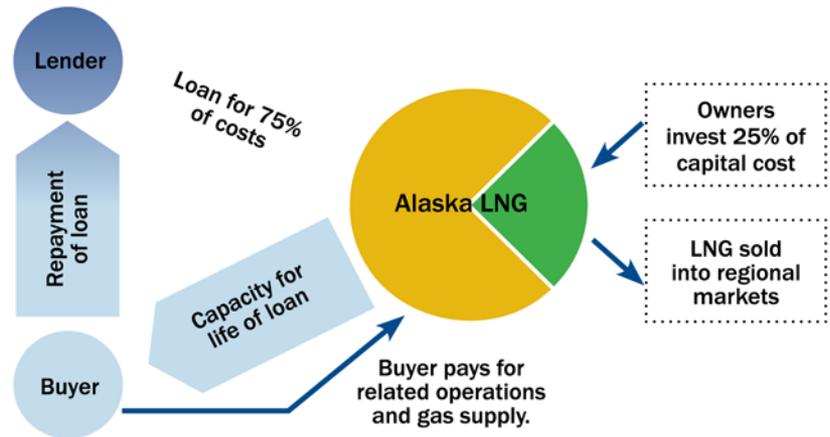


中國銀行
BANK OF CHINA

- Disposition in China of 75% of Alaska LNG.
- 75% of project financing from China.
- 25% of the LNG being sold by AGDC or a special project entity to the wider Asia market.
- A transparent and feasible investment model.
- Strategic financing.
- Largest energy transaction between U.S. and China.
- Alaska retains majority ownership of Alaska LNG.

MEETING THE CHALLENGE

<h2>75% DEBT FOR CAPACITY</h2>	<h2>25% OWNERSHIP CAPACITY</h2>
<p>In-country bank provides loan for 75% of the Alaska LNG project costs (up to 30 year term).</p>	<p>Alaska LNG owners pay for 25% of the Alaska LNG project costs.</p>
<p>China receives 75% of capacity for the life of the loan. Capacity comes “at cost”, meaning the cost of debt, operations, and gas supply.</p>	<p>Alaska LNG retains 25% of capacity for the life of the loan and will sell LNG into regional Asian LNG import nations. After loan is paid, 100% of capacity is retained by Alaska LNG project.</p>



AGDC – THE DEVELOPER

- **Alaska Gasline Development Corporation:**
 - Independent, public corporation of the State of Alaska.
 - Empowered to maximize the benefit of Alaska’s vast North Slope natural gas through the development of infrastructure necessary to move the gas into local and international markets.
 - Primary focus is to build the Alaska Gasline and the associated LNG production facility at Nikiski, allowing the stranded gas on Alaska’s North Slope to be brought to market, providing gas for Alaskans, and providing a significant source of new export revenue for the State of Alaska.
 - The majority owner of the Alaska LNG system.
 - AGDC will work with state departments and agencies to ensure the Alaskan workforce has every opportunity to be trained and is ready to meet the labor challenges ahead.

SINOPEC – THE BUYER

- **Sinopec:**

- Large petroleum and petrochemical enterprise group, established in 1998.
- World's largest fully-integrated oil and gas company by revenue, with upstream, midstream, and downstream operations.
- China's largest producer and supplier of refined oil products.
- Largest oil refinery company
- 2nd largest chemical company in the world.



Fortune Global 500 Rankings, 2017

Company	Revenues (US\$M)
1 Walmart	\$485,873
2 State Grid	\$315,199
3 Sinopec Group	\$267,518
4 China National Petroleum	\$262,573
5 Toyota Motor	\$254,694
6 Volkswagen	\$240,264
7 Royal Dutch Shell	\$240,033
8 Berkshire Hathaway	\$223,604
9 Apple	\$215,639
10 ExxonMobil	\$205,004

Sinopec's track record of LNG developments and investments:

- Sinopec has 3 LNG receiving terminals on China's coast (9 MTPA).
- Partner with ConocoPhillips in Australia Pacific LNG (APLNG) with an offtake commitment for 7.6 MTPA for 20 years.
- 20 year, 2 MTPA contract with ExxonMobil from Papua New Guinea (PNG LNG).

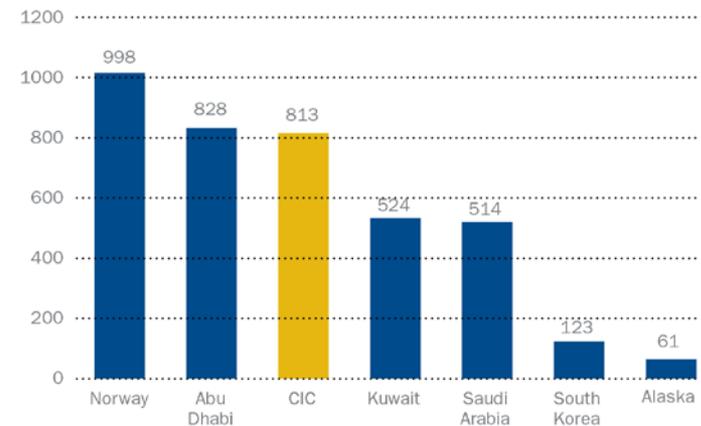
CIC – THE INVESTOR

- **China Investment Corporation (CIC):**



- World's 3rd largest sovereign wealth fund.
- CIC Capital is a subsidiary specializing in making direct investments in infrastructure, mining, and energy (oil and gas) to refine CIC's overall portfolio management and enhance investment on long-term assets.
- Acquired a 10% stake in Teck Resources Limited, which operates Red Dog Mine.
- Acquired a stake in 1 New York Plaza office tower for \$700 million (1st direct U.S. investment).

Sovereign Wealth Funds (US \$ Bill), 2017



Track Record of Successful LNG Investment:

- CIC Invested \$3.15 billion in GDF Suez Exploration & Production International SA and \$850 million in Atlantic LNG Company of Trinidad and Tobago in 2011.

BANK OF CHINA – THE LENDER

- **Bank of China:**

- World’s 4th largest bank
- China’s most internationalized and diversified bank.
- Engages in commercial and investment banking and insurance and investment services.



Current Rank▲	Company (ticker-exchange)	Total assets (US\$B)
1	Industrial & Commercial Bank of China Ltd. (1398-HKG)	3,473.24
2	China Construction Bank Corp. (0939-HKG)	3,016.58
3	Agricultural Bank of China Ltd. (1288-HKG)	2,816.04
4	Bank of China Ltd. (3988-HKG)¹	2,604.30
5	Mitsubishi UFJ Financial Group Inc. (8306-TKS)	2,589.56
6	JPMorgan Chase & Co. (JPM-NYSE)	2,490.97
7	HSBC Holdings Plc (HSBA-LON) ²	2,374.03
8	BNP Paribas SA (BNP-PAR)	2,190.42
9	Bank of America Corp. (BAC-NYSE)	2,187.70
10	Wells Fargo & Co. (WFC-NYSE)	1,930.12

Track Record of Successful LNG Financing:

- Coral South floating LNG project in Mozambique.
- Tangguh LNG in Indonesia.
- Cheniere's Corpus Christi trains 1 and 2.
- Australia Pacific LNG.

GROWING WITH THE GASLINE

Energy Resources

Oil
Oil
71-84 billion barrels

Gas
Gas
100's trillion cubic feet

Mineral Resources

Au
Gold
11% of Global Reserves
6,400 tonnes

C
Coal
13% of Global Reserves
127 billion tonnes

Ag
Silver
6% of Global Reserves
32,200 tonnes

Zn
Zinc
8% of Global Reserves
16.8 million tonnes

C
Graphite
4% of Global Reserves
9.9 million tonnes

Cu
Copper
6% of Global Reserves
42 million tonnes

Pb
Lead
5% of Global Reserves
4.8 million tonnes

Mo
Molybdenum
11% of Global Reserves
1.6 million tonnes

Did you know?

The Arctic Strategic Transportation and Resource Project (ASTAR) would create a road system used to further explore and develop northern Alaska. Past exploration projects have shown incredible potential that could add valuable oil and gas to the pipeline projects.

Did you know?

Most cargo vessels between Asia and North America transit through the Aleutians.

Did you know?

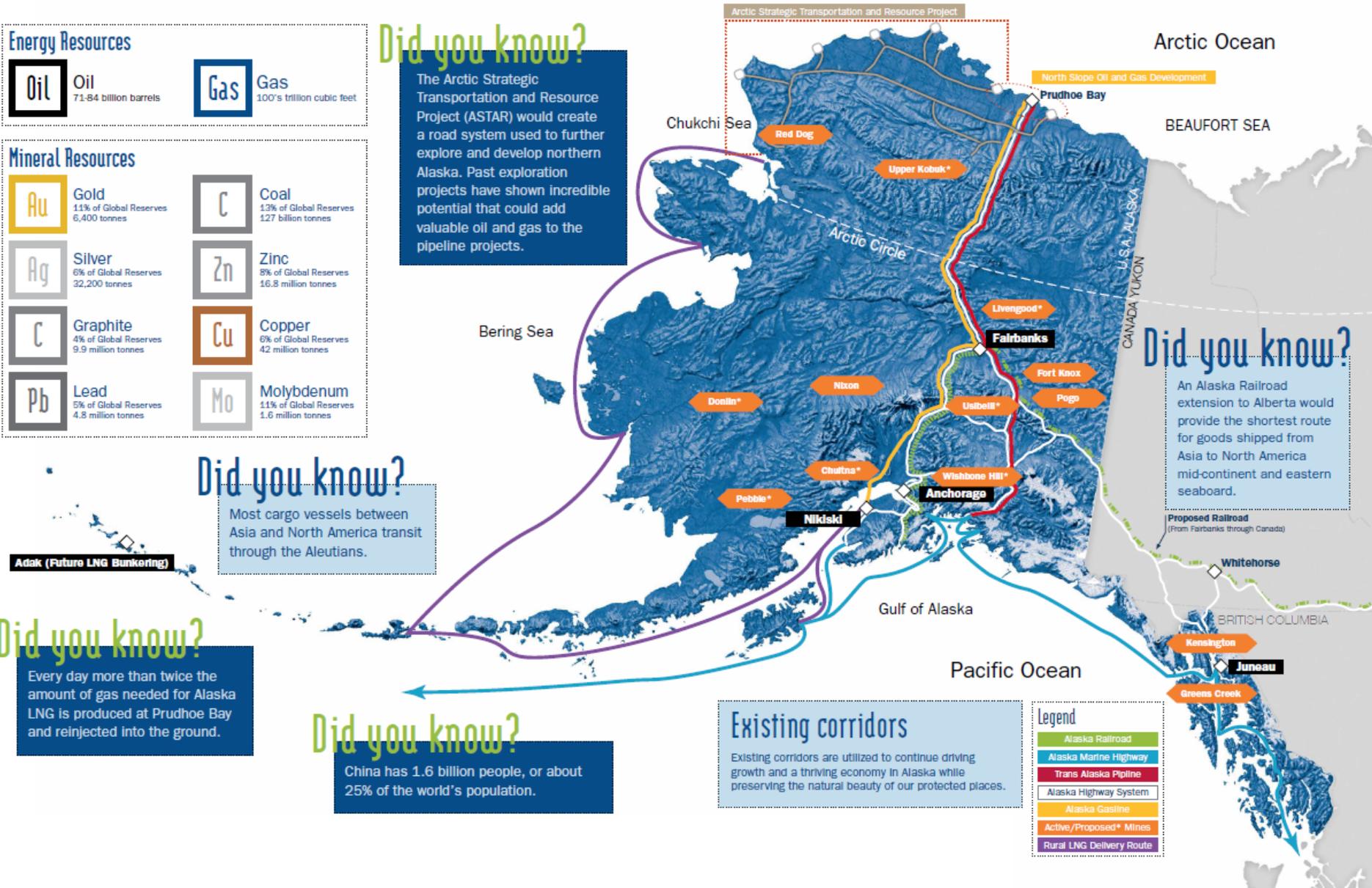
Every day more than twice the amount of gas needed for Alaska LNG is produced at Prudhoe Bay and reinjected into the ground.

Did you know?

China has 1.6 billion people, or about 25% of the world's population.

Did you know?

An Alaska Railroad extension to Alberta would provide the shortest route for goods shipped from Asia to North America mid-continent and eastern seaboard.



Existing corridors

Existing corridors are utilized to continue driving growth and a thriving economy in Alaska while preserving the natural beauty of our protected places.

- Legend**
- Alaska Railroad
 - Alaska Marine Highway
 - Trans Alaska Pipeline
 - Alaska Highway System
 - Alaska Gasline
 - Active/Proposed* Mines
 - Rural LNG Delivery Route

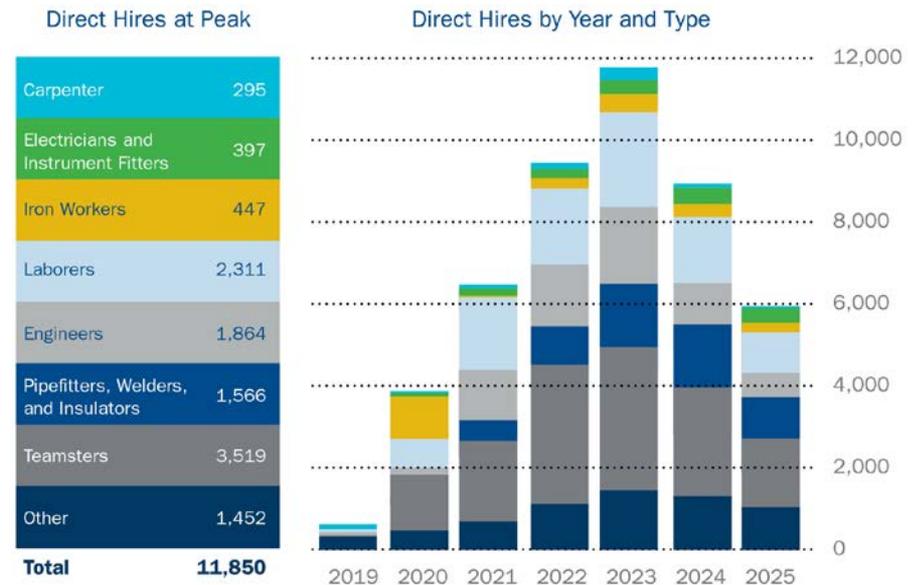
Adak (Future LNG Bunkering)

Proposed Railroad (From Fairbanks through Canada)

BRITISH COLUMBIA

JOBS FOR ALASKANS

- Alaska LNG construction will create an **employment boom** similar to what was seen with the Trans Alaska Pipeline System (TAPS).
- **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.



12,000 jobs during construction; 1,000 long-term operations jobs.

GAS FOR ALASKANS

- **Low cost energy for Alaskans.**

\$1,000

Savings per household/year



- **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.

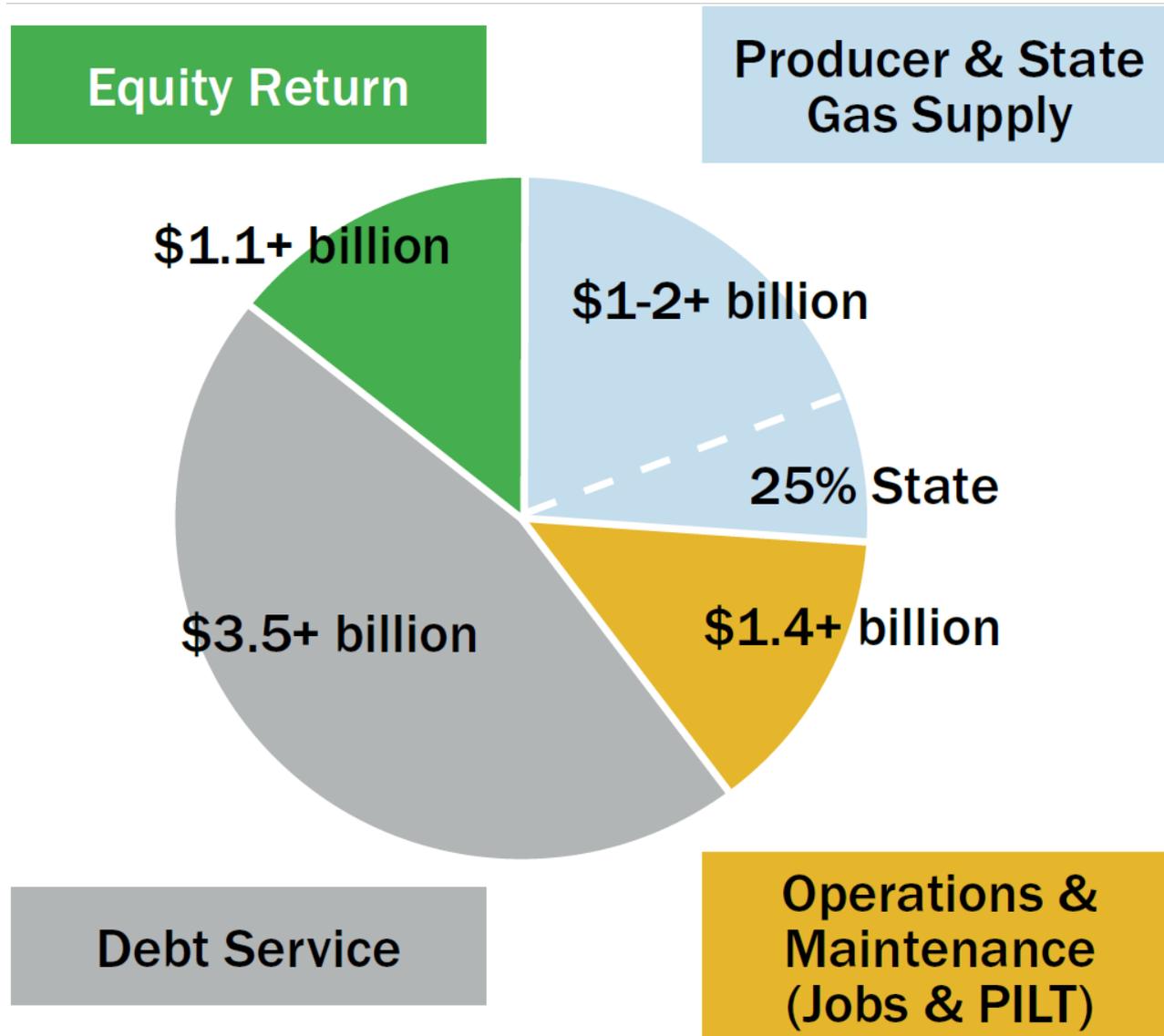
In an effort to address both concerns and provide a backup fuel for intermittent renewables, China is working to increasingly replace coal with cleaner-burning natural gas. As a first step, the government aims to boost the share of natural gas in its primary energy supply from 6 to 10 percent by 2020.



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

PROJECT CASH FLOWS



NEXT STEPS

- **Large amounts of paperwork:**
 - Multi-billion dollar international purchase agreement, loan documents, investment agreements, construction contracts, and regulatory approval.
- **Joint Development Agreement:**
 - Define specifics by May 2018 (interest rate, term of debt, system capacity, LNG shipping, pricing, operations and maintenance forecasts, contributions of parties, etc.)
 - Definitive Agreements by end of 2018.
 - Construction commences as planned in 2019.



Get involved.

Get Ready.

Get Engaged.



www.agdc.us

[Facebook.com/AKGasline DevelopmentCorp.](https://www.facebook.com/AKGaslineDevelopmentCorp)