


Alaska Industrial Development and Export Authority
Alaska Energy Authority

HB 74 AIDEA Development Project Financing for a Liquefied Natural Gas Production and Distribution System

AIDEA/AEA Policy Presentation on HB 74
House Labor and Commerce Committee

March 4, 2013 – Juneau, AK

Interior Energy Plan

- Opportunity to provide Alaskans with low-cost North Slope natural gas and propane
- Governor's finance package acts as a catalyst, bringing together LNG and propane customers with the private entities that will construct and operate the system
- AIDEA is investigating project feasibility and will only utilize their authorized finance tools if the project makes economic sense
- AIDEA will take an equity stake in project but will not outright build or operate the LNG plant or distribution system
- Governor's finance package is targeted at funding the initial capacity with future expansion funded by private/community investment

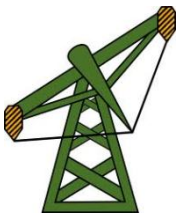
Project Goals

- Provide lowest-cost energy to Interior Alaska consumers as soon as possible
- Get gas first to the Interior while assuring long-term access to gas and propane from liquefaction plant for all Alaskans
- Utilize private sector mechanisms as much as possible

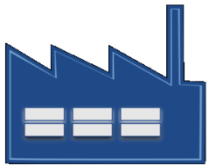
Project Description

- Natural gas will be liquefied on the North Slope and trucked to Interior Alaska
- Propane will be produced and delivered to Interior and Rural Alaskans
- Primary LNG demand anticipated to be Fairbanks and North Pole
- LNG will be temporarily stored and re-gasified in Interior Alaska
- Natural gas distribution system with storage to supply natural gas for heating

LNG Trucking Value Chain

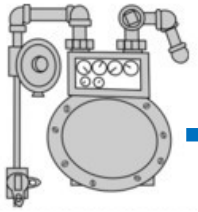


Gas Supply



North Slope Liquefaction Plant

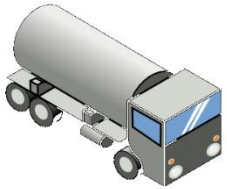
Seasonal Storage



Distribution

Space Heating

Propane



Trucking

Regasification

Electric

Industrial

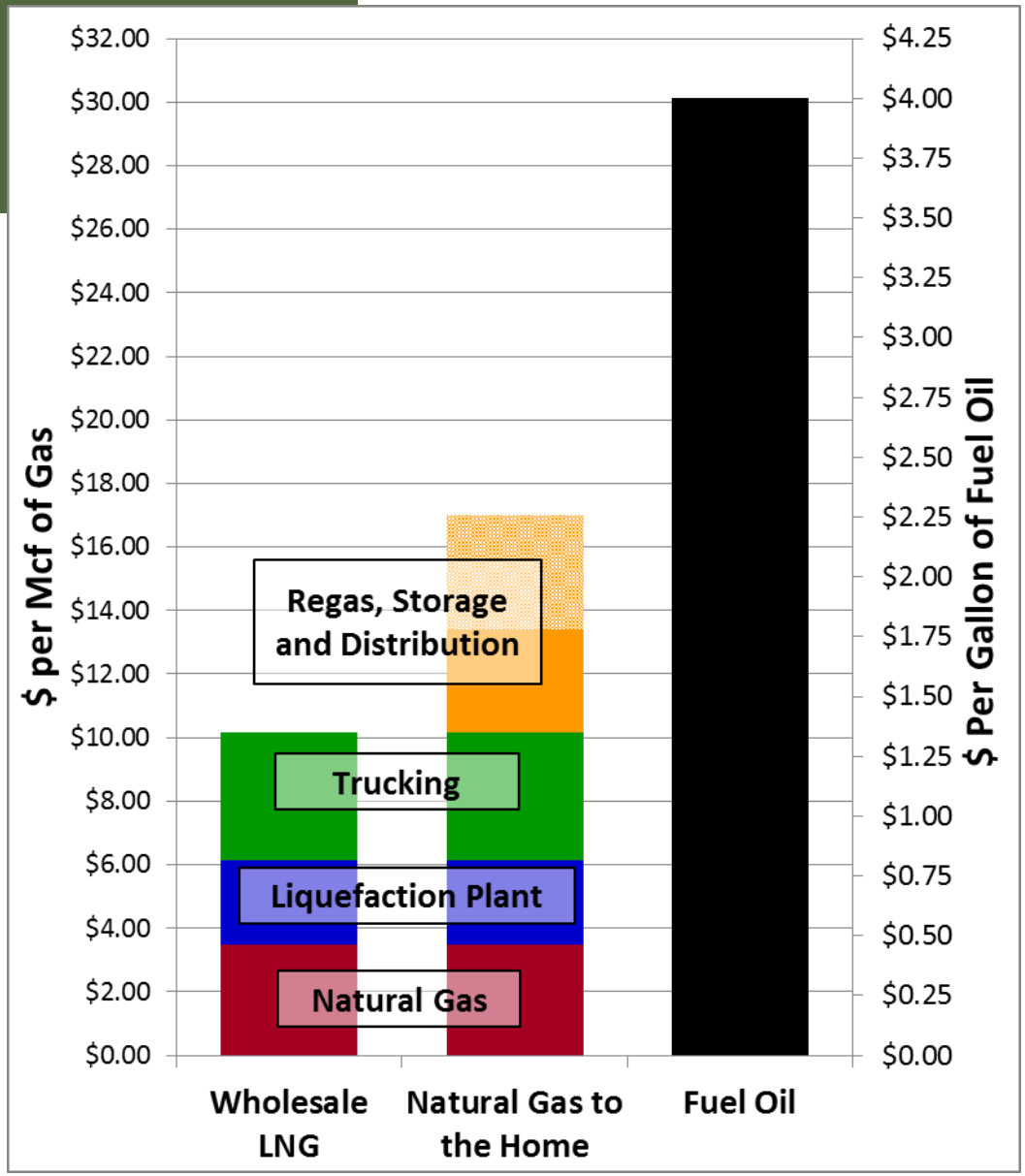
LNG Lowers Energy Costs

Expected Utility Price per Mcf

- Wholesale LNG: $10.15
- Natural Gas to home: $13.42-$17.00 per Mcf
- Delivered price is equal to $1.79 - $2.27 per gallon of fuel oil

Key Assumptions

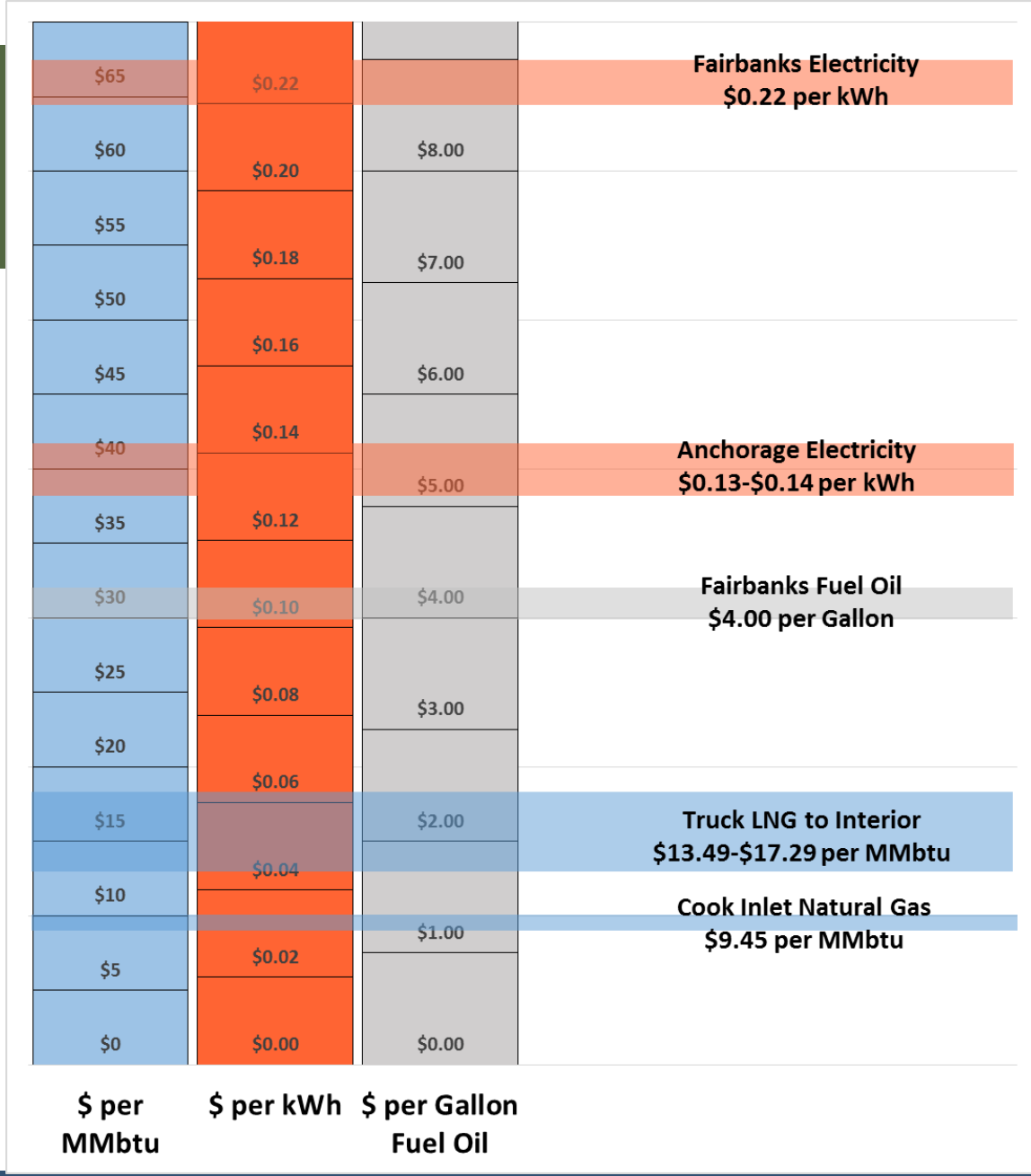
- Initial costs associated with a 9 Bcf plant at start up
- Snapshot in time, costs change with expansion
- LNG plant bifurcated into two sections (industry and utility)
- $50 million capital cost reduction applied to 6.5 Bcf utility section



Heating Energy Supply Comparison

Trucked LNG is the lowest-cost option for Interior Alaska heating

- Electricity would need to be $0.04 - $0.06 per kWh to compete with trucked LNG
- Electricity would need to be much cheaper to compete with fuel oil



Plant Use and Expansion

Plant Expansion

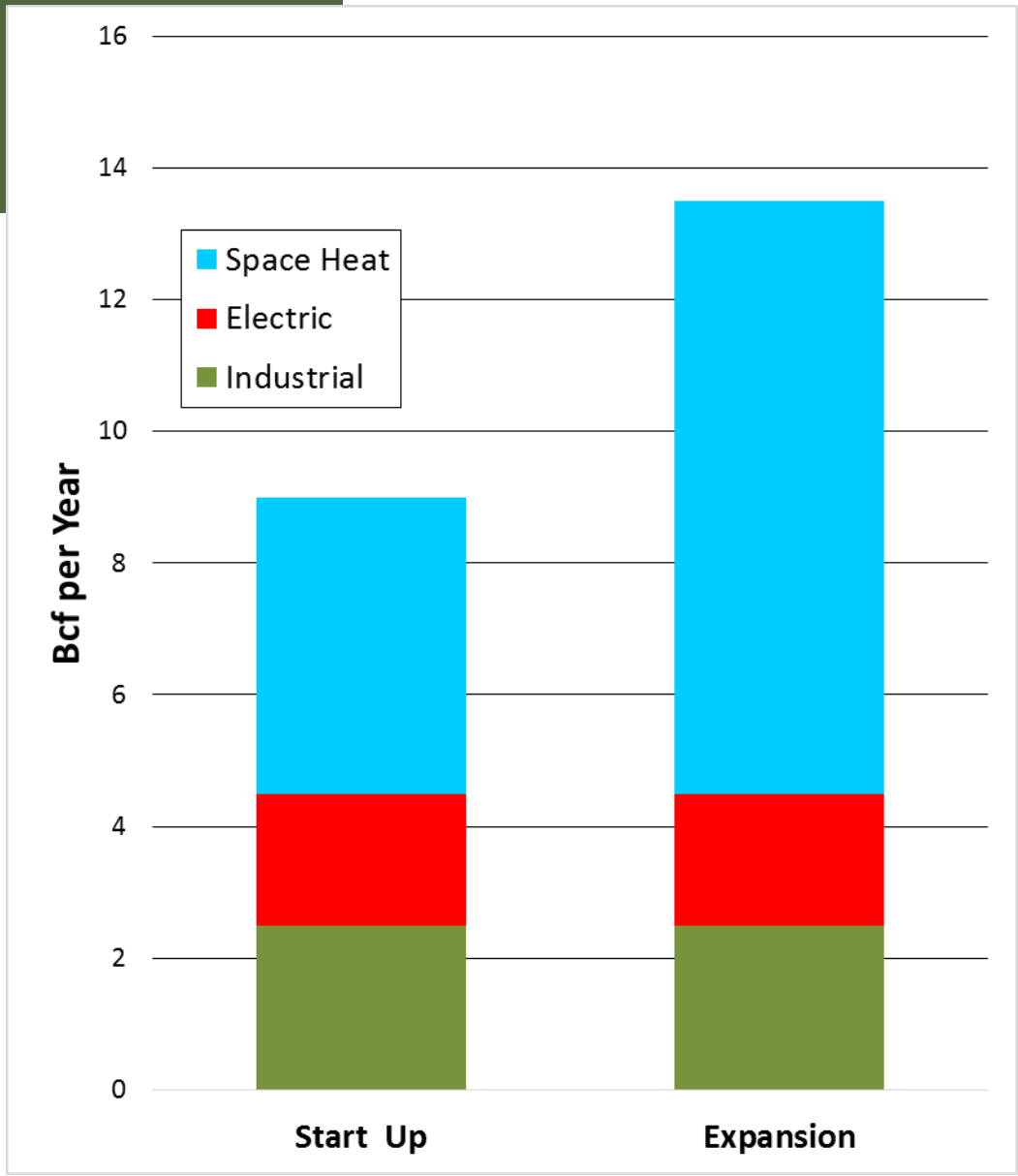
- LNG plant will expand as the demand for natural gas increases
- Size or timing of expansion is driven by demand
- Customer count includes residential and commercial users
- Second expansion is possible based on pipeline timing

Capacity (Bcf per year)

	Start Up	Expansion
Space Heat	4.5	9.0
Electric	2.0	2.0
Industrial	2.5	2.5
Total Demand	**9.0**	**13.5**

Estimated Customers

LNG	7,800	15,900
Propane	1,800	2,700



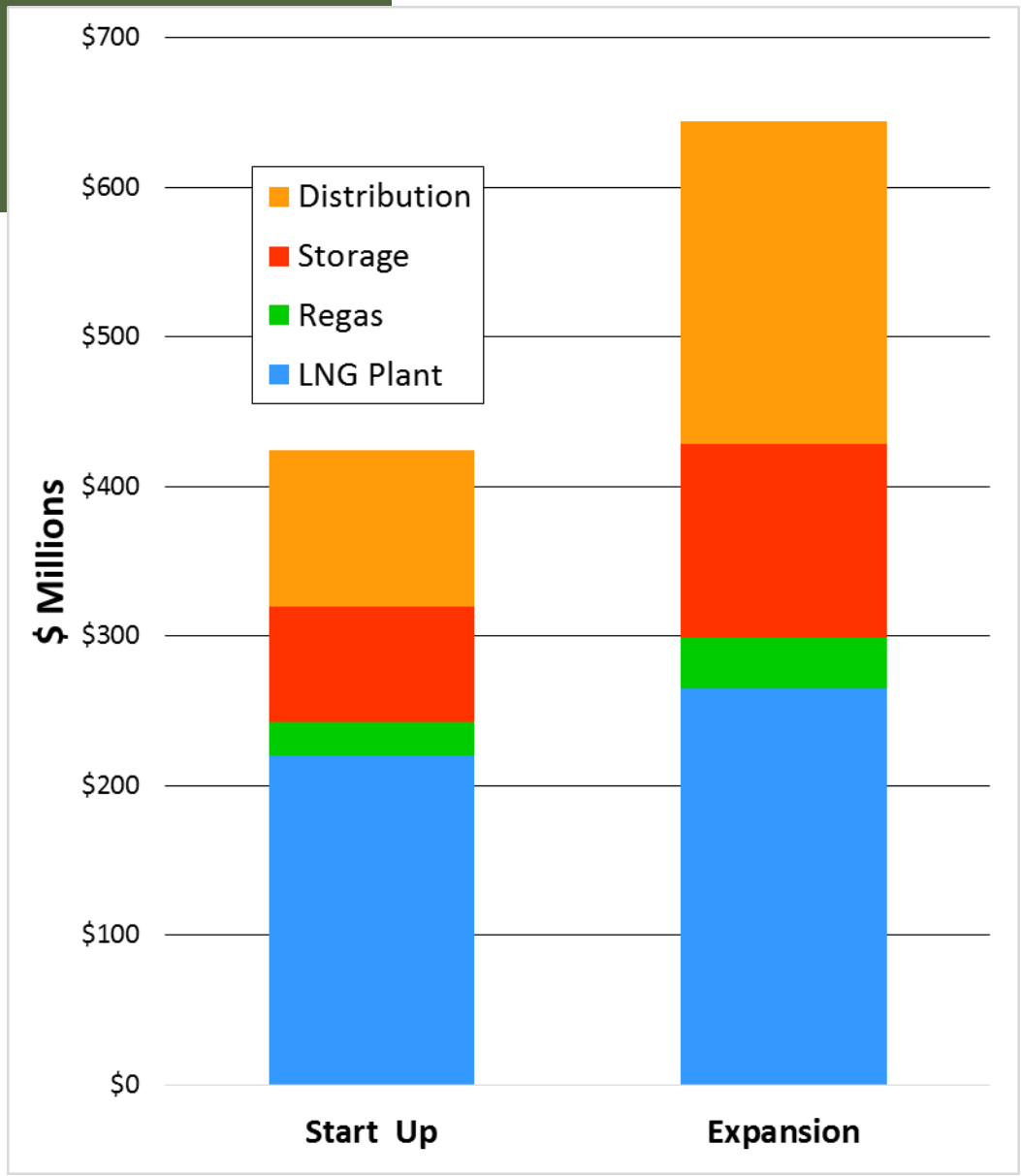
Capital Cost Breakdown

Capital Costs

- Based on “Mid Cost” scenario
- Economies of scale achieved in LNG plant as additional 4.5 Bcf trains are added
- Costs for expansions are cumulative
- Does not include trucking capital

Capital Costs ($millions)

	Start Up	Expansion
LNG Plant	$220	$265
Regas	$23	$34
Storage	$77	$130
Distribution	$105	$216
Total	**$425**	**$644**
Low Cost	*$368*	*$522*
High Cost	*$481*	*$767*



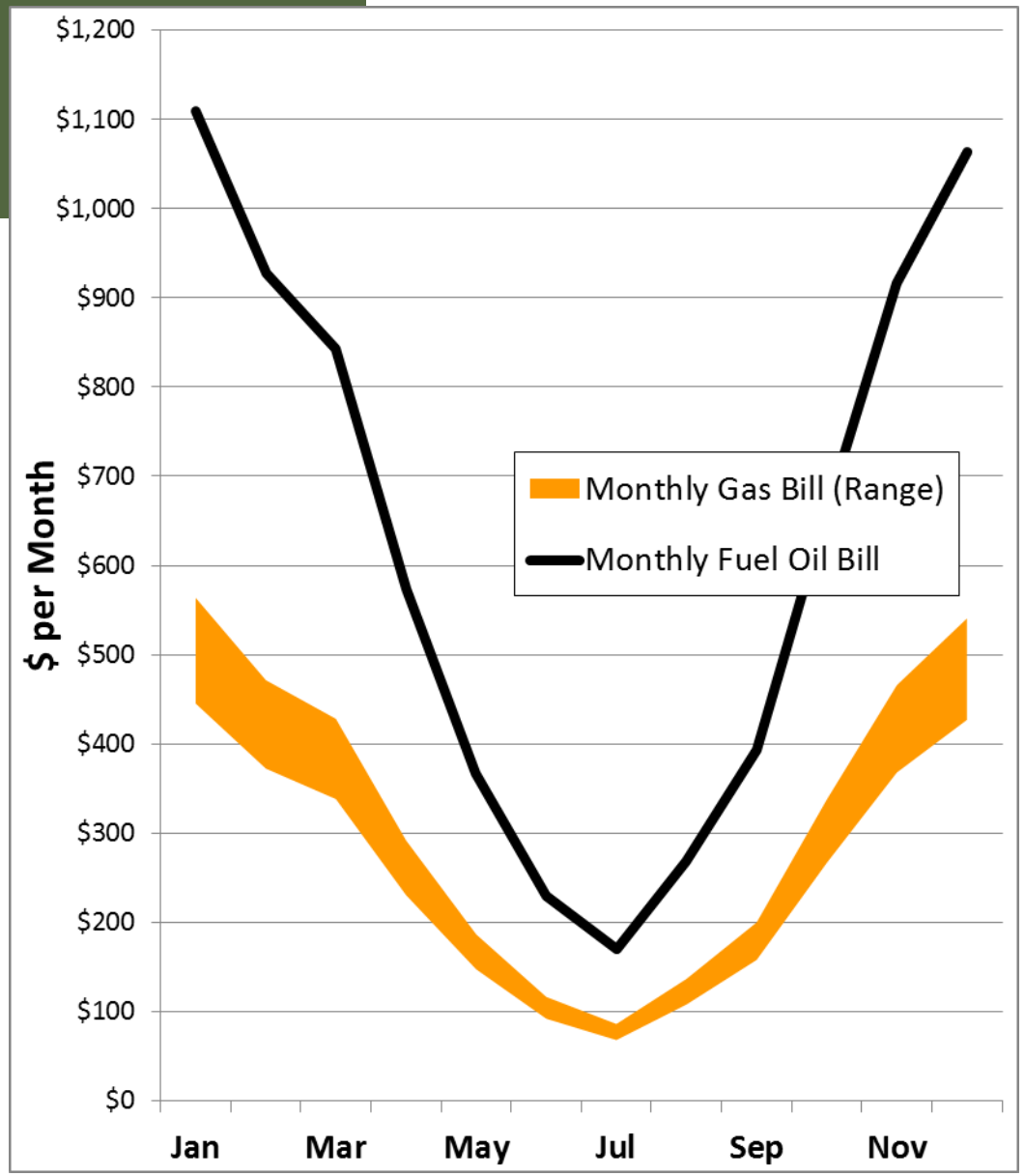
Household Heating Savings

Typical Home Heating Savings

- $2,900 - $3,750 annually
- 43% - 55% reduction in cost

Key Assumptions

- Typical Interior Alaska household will use 225 Mcf of gas per year (equivalent to 1,700 gallons of fuel oil)
- Does not account for expected improvement in heating efficiency with natural gas



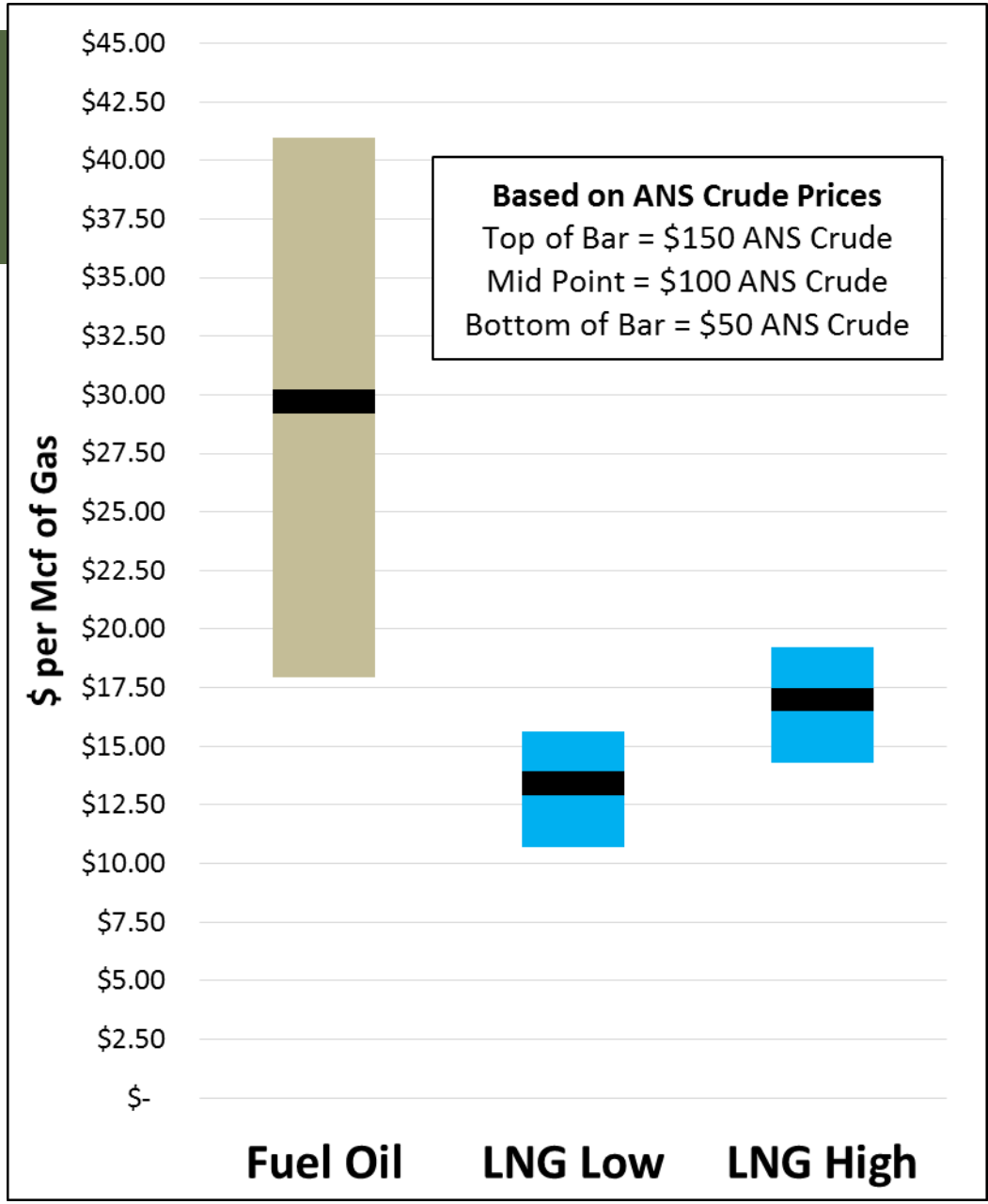
Reduce Fuel Price Uncertainty

Reduced price variability

- Small portion of delivered LNG price is natural gas cost
- Fuel oil prices are much more volatile than trucked LNG
- Trucked LNG is cheaper even when oil prices drop

Key Assumptions

- Fairbanks fuel oil price is based on linear regression analysis
- Natural gas price uses publicly available information on LNG supply contracts



Air Quality

Conversion to natural gas should reduce air pollutant emissions in Fairbanks and North Pole

- Will reduce overall emissions of PM 2.5
- Fairbanks is presently a non-attainment area for PM 2.5
- Potential public health benefits of natural gas is substantial

Impact on Federal funding and economic development

- Alaska risks losing Department of Transportation and Public Facilities funding if State fails to submit an attainment plan to EPA
- Federal projects in the area face funding hurdles while area is non-attainment
- Cleaner, healthier air in Fairbanks will promote economic development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POLITICS NATION NOW POLITICS NOW TOP OF THE TICKET SCIENCE SCIENCE

TRENDING NOW▲ MIDWEST STORM | OSCAR PISTORIUS | TB OUTBREAK | JERRY BUSS | LAS V

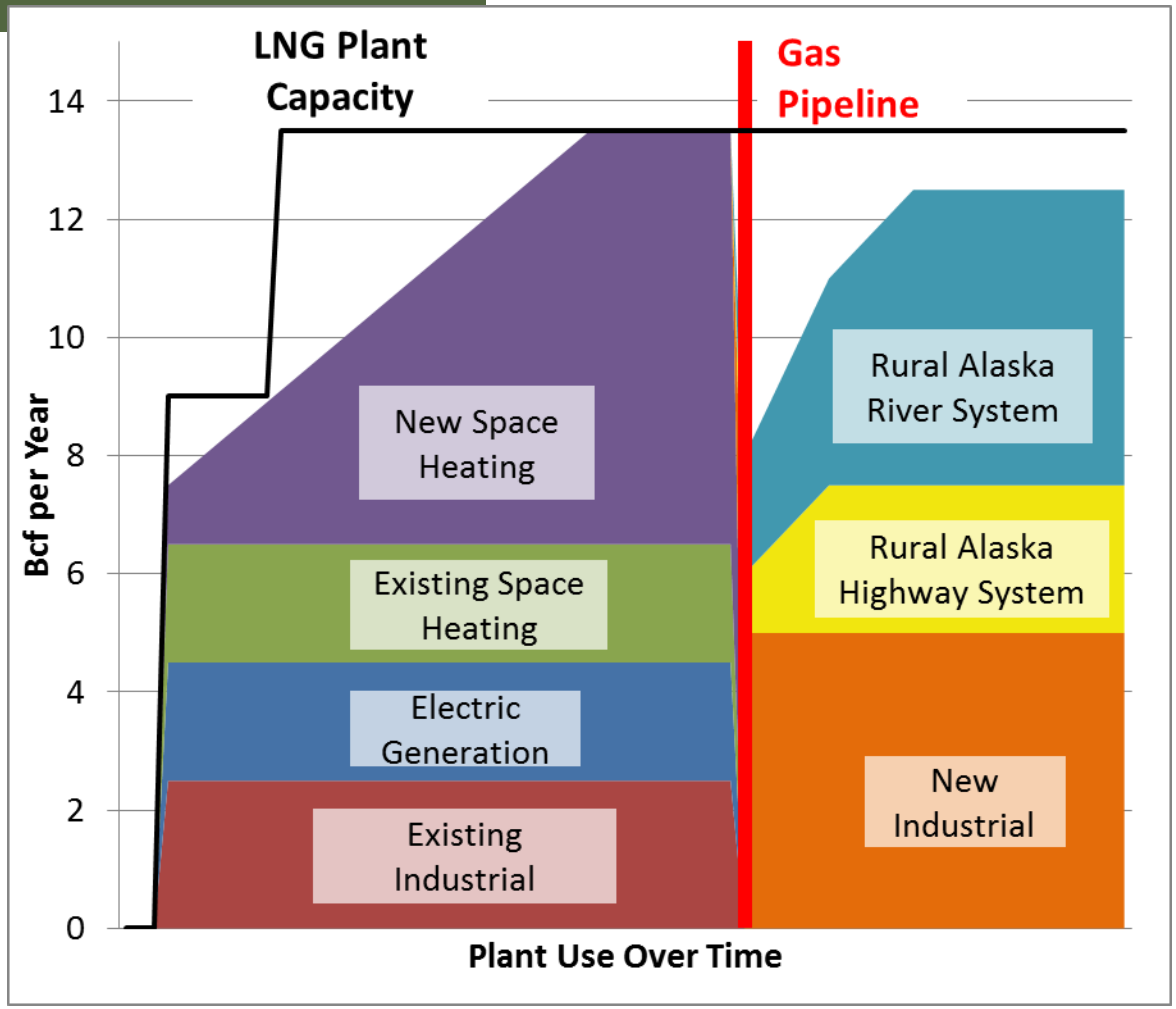
Fairbanks area, trying to stay warm, chokes on wood stove pollution

Wood-burning stoves give the Fairbanks, Alaska, area some of the worst winter air pollution in the country.

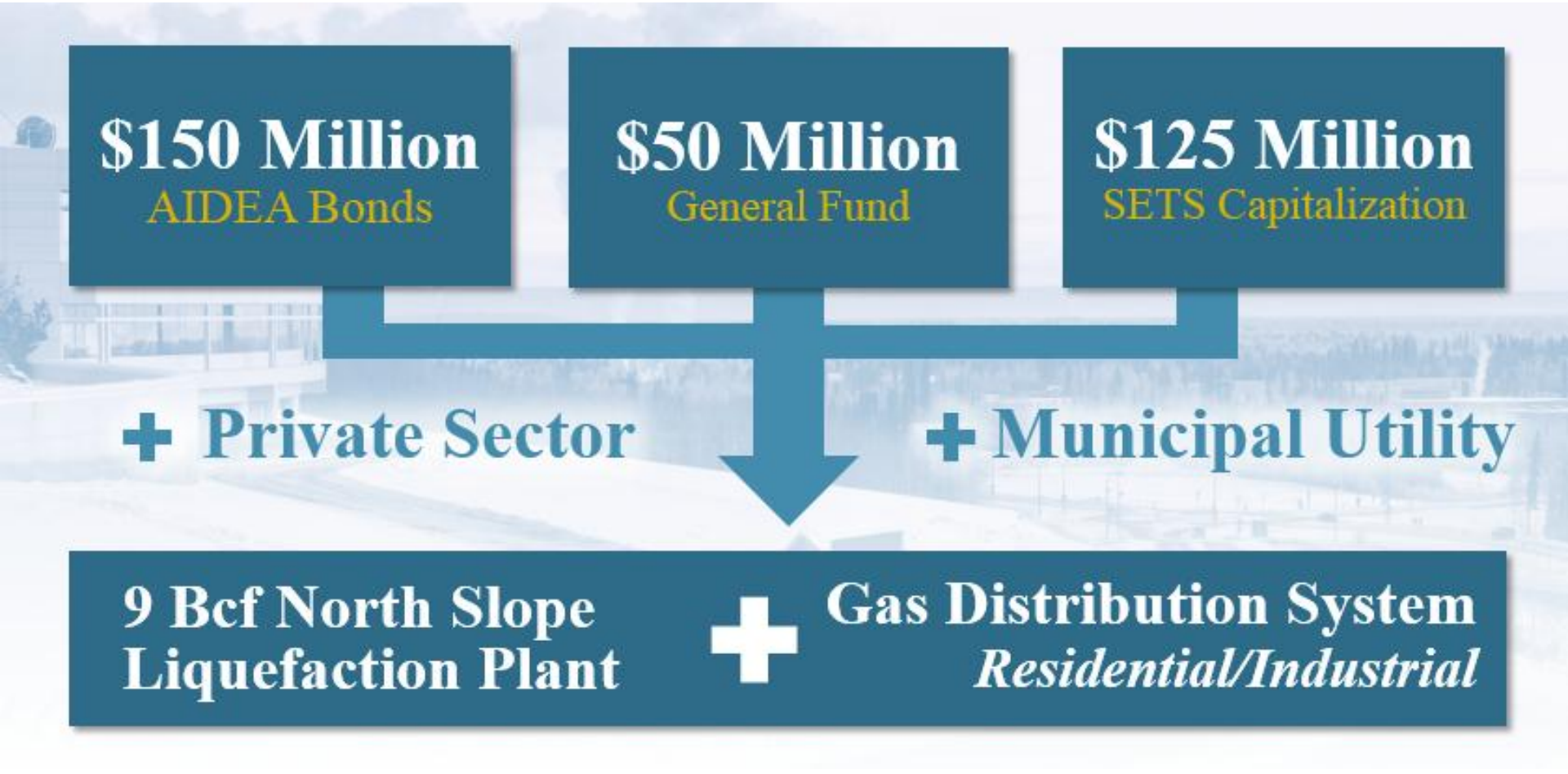
Long Term Use of LNG Plant

LNG Plant will be used after gas pipeline

- Plant can serve Rural Alaska before gas pipeline is constructed
- Expect opportunity to sell LNG to new industrial users both before and after pipeline
- Information in chart is for demonstration only



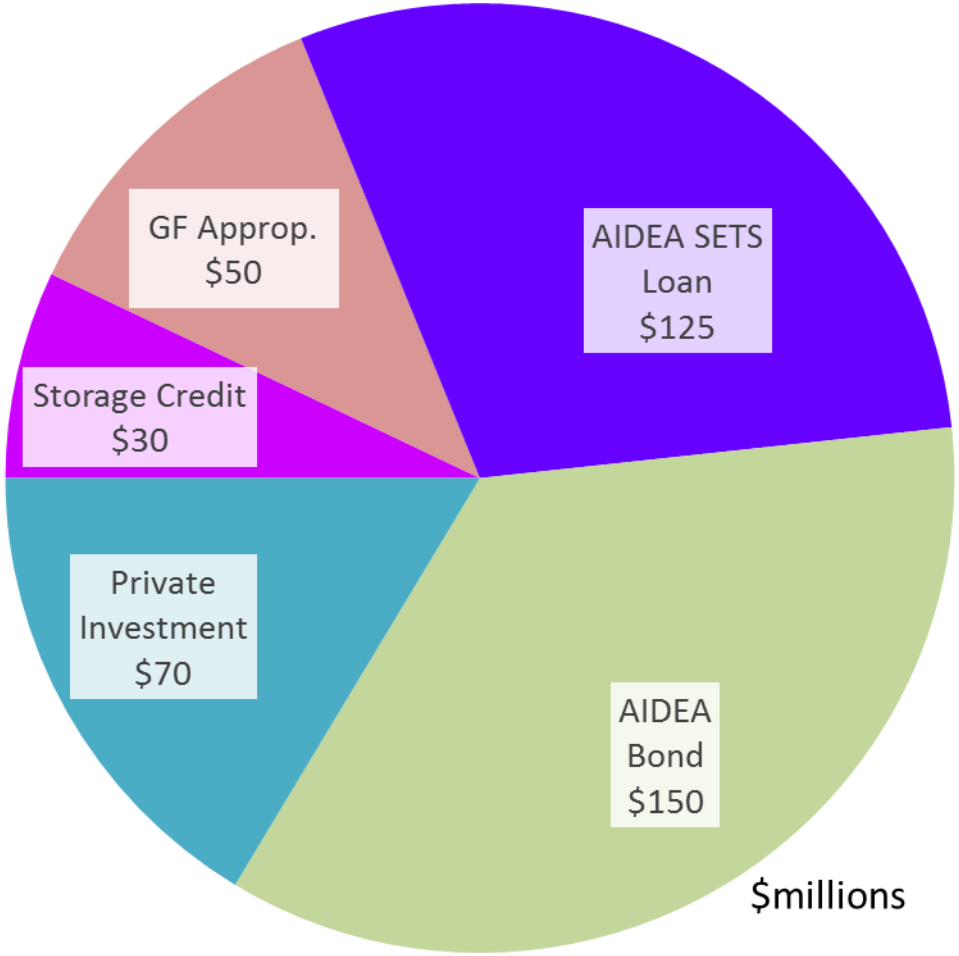
Governor's Finance Package



Governor's Finance Package

- $50 million General Fund appropriation
  - Directly reduces the cost of LNG
- $150 million AIDEA bonds
  - 3% to 4.5% interest rate (depending on tax-exempt status of component financed and market rates)
  - $125 million SETS capitalization
  - 3% interest rate (set by SB23/HB74)
  - Flexibility to provide optimal commercial structure
- **$325 million total 2013 package**
- $30 million natural gas storage credit
  - $15 million tax credit per qualifying storage tank
  - Created through previous legislative action
- **$355 million total Governor's package**

Potential Finance Options for Initial Buildout



- The initial buildout will be funded from multiple sources, the example used here is just one possibility
- Projected 30 years payback period
- Private/community investment will fund future expansion
- Authorization to use State funds will not be used if AIDEA determines the project is not feasible

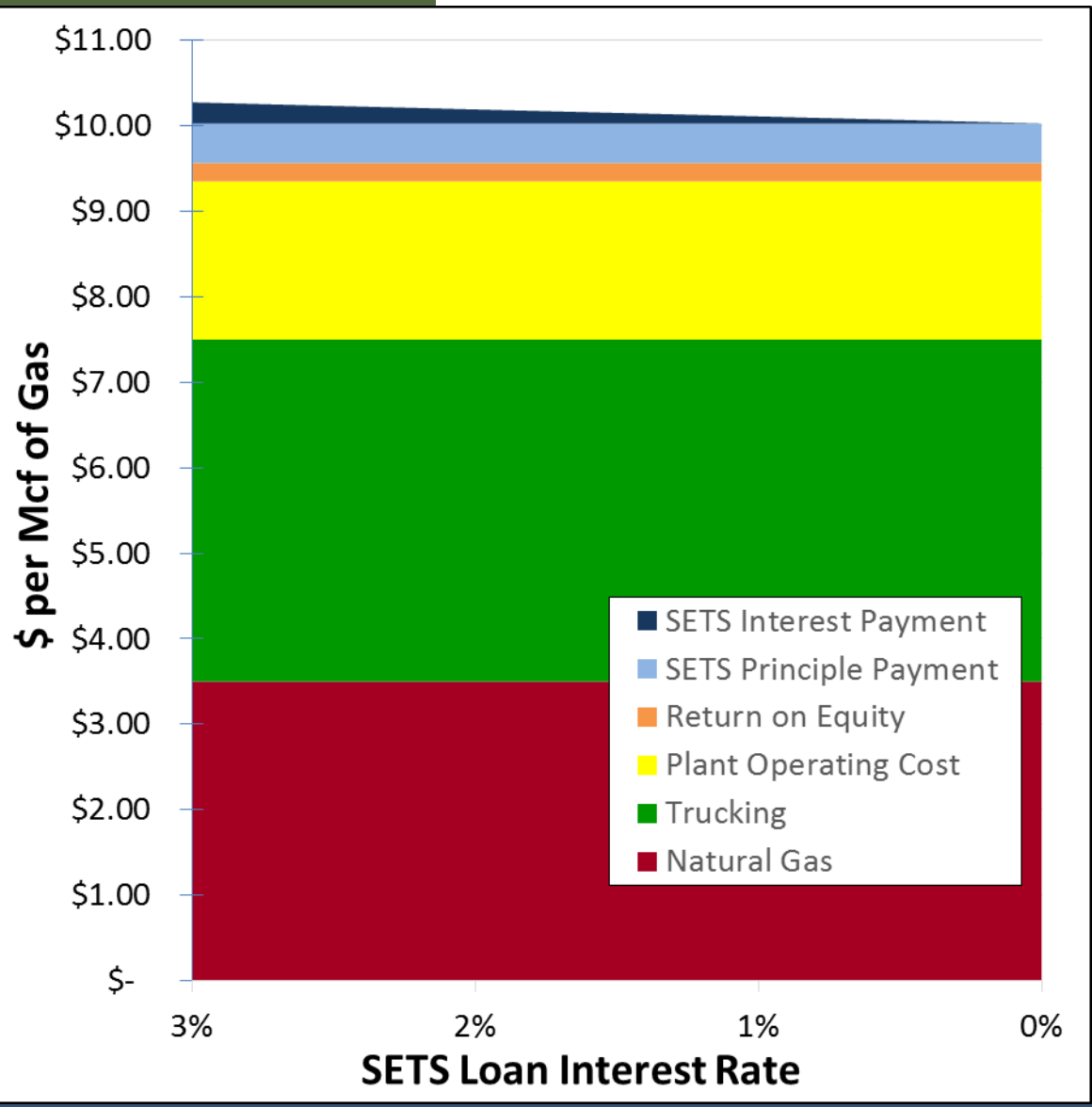
	LNG Plant	Regas, Storage & Distribution	Total
State Storage Credit	$15	$15	$30
General Fund Approp.	$50	$0	$50
AIDEA SETS Loan	$125	$0	$125
AIDEA Bond	$0	$150	$150
Private Investment	$30	$40	$70
Total Capital	**$220**	**$205**	**$425**

SETS Loan Interest Rate

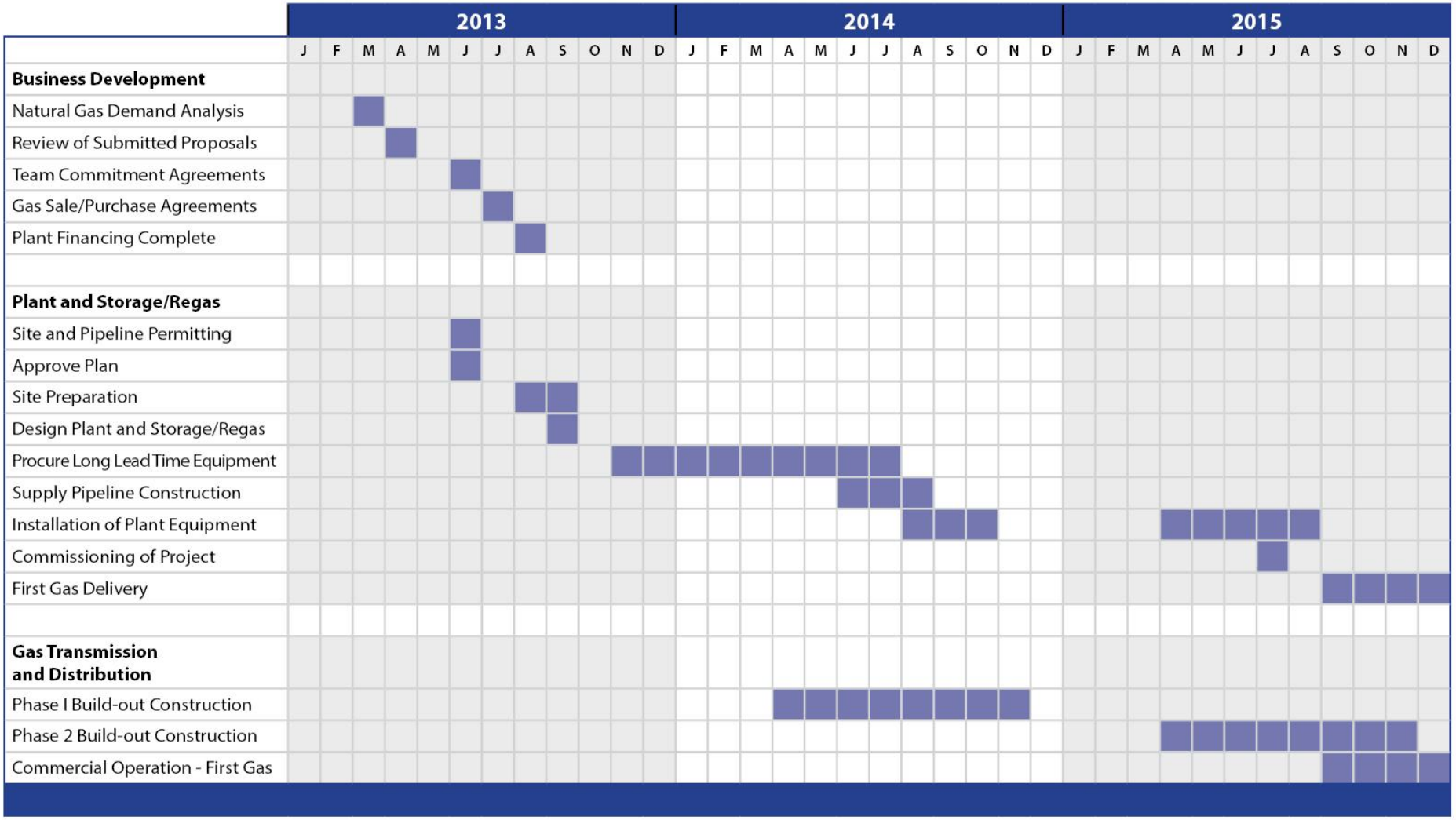
SETS Loan interest rate has minimal impact on LNG Price

- Assumes 30-year loan term
- Reduces natural gas price by $0.25 per Mcf

	3.0%	2.0%	1.0%	0.0%
SETS Interest Payment	$0.25	$0.16	$0.08	$0.00
SETS Principle Payment	$0.46	$0.46	$0.46	$0.46
Return on Equity	$0.21	$0.21	$0.21	$0.21
Plant Operating Costs	$1.85	$1.85	$1.85	$1.85
Trucking	$4.00	$4.00	$4.00	$4.00
Natural Gas	$3.50	$3.50	$3.50	$3.50
Total	**$10.28**	**$10.19**	**$10.11**	**$10.03**



Project Timeline and Milestones



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