

AK LEGISLATURE SPECIAL COMMITTEE FILES SCOMM 155 3310

Alaska Pipeline Project



- **Alberta Hub is the most liquid market in North America**
- **TransCanada's Alberta System is the Alberta Hub**
- **Access to all North American markets coast-to-coast on TransCanada's existing pipelines**
 - **By 2018, spare takeaway capacity sufficient for full Alaska volumes**
- **One-third of Alaska pipeline in-service as Prebuild moving 3 BCFD**
- **LNG alternative if insufficient gas commitments through Canada or via Y-line**

Project Description



- Gas treatment plant at Prudhoe Bay
 - 5 Bcf/d initial capacity
 - TransCanada will develop/own only if necessary
- Natural gas pipeline from Prudhoe Bay to Alberta Hub
 - 4.5 Bcf/d initial capacity
 - Expansion to 5.9 Bcf/d with compression only
 - More than 1700 miles
 - 48-inch diameter; 2500/2600 psig
- Alberta Hub to Lower 48
 - TransCanada's existing pipeline system in Alberta is the "Alberta Hub"
 - TransCanada's Alberta pipeline is both a physical and commercial system
 - Largest natural gas trading hub in North America
 - By 2018, downstream pipelines projected to have spare capacity for full Alaska volumes

Project Economics ¹



- Capital costs
 - \$26 billion (2007 \$US excluding AFUDC)
 - Approximately \$0.6 billion for Open Season and regulatory certification
- Tolls
 - \$US 2.76/MMbtu in 2018 to the Alberta Hub
 - Levelized negotiated toll for 4.5 Bcf/d in nominal dollars, including fuel
 - Expansion Tolls
 - Rolled-in tolls in Canada
 - Rolled-in tolls in Alaska up to 115% of initial tolls, including fuel

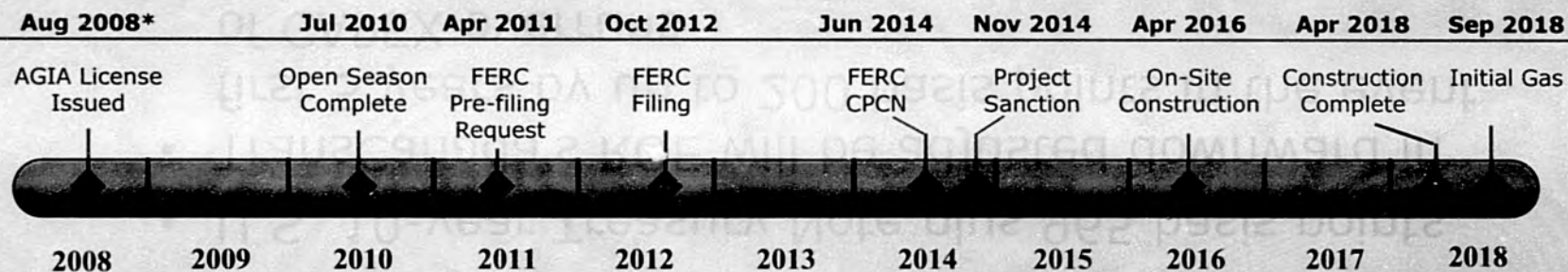
¹ Based on information provided by the State and current TransCanada estimates

Financial Parameters



- Debt/Equity Ratio
 - 70/30 during construction
 - 75/25 upon completion of initial project
 - 60/40 for all expansions
- Return on Equity
 - U.S. 10-year Treasury Note plus 965 basis points
 - TransCanada's ROE will be adjusted downward in first 5 years by up to 200 basis points in the event of CAPEX overruns
- Fuel
 - 7.9% including GTP from Prudhoe Bay to Alberta Hub
 - \$US 0.35/MMbtu in 2018 @ 4.5 Bcf/d

Project Schedule



* AGIA license assumed to be issued in August 2008

Partnership Opportunity



- TransCanada will offer equity opportunity to Shippers in the initial Open Season that subscribe for a threshold volume
 - Should improve likelihood of success and alignment of interests between project sponsors and Shippers

Upstream Fiscal Terms



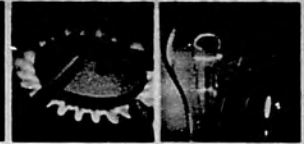
- TransCanada's AGIA obligations are not conditional on a review of Alaska's upstream fiscal terms.
- TransCanada acknowledges that this issue is between the State and natural gas producers.
 - TransCanada requests that the State review upstream fiscal terms for natural gas prior to the initial open season.

Other Project Components



- Natural Gas Liquids (NGLs) Extraction
 - TransCanada can accommodate NGL extraction in Alaska or downstream
 - TransCanada's Alberta system is straddled by three NGL complexes owned by third parties
 - Excess capacity expected at those plants sufficient to process Alaskan gas if Shippers so choose
- LNG Alternative
 - TransCanada is willing to offer gas treatment and transportation services from Prudhoe Bay to an LNG terminal should insufficient gas be committed through Canada or via a Y-line

Regulatory Structure



- Alaska
 - TransCanada Alaska Company, LLC will proceed under Alaska Natural Gas Pipeline Act of 2004
- Canada
 - Foothills Pipe Lines Ltd. will proceed under the Northern Pipeline Act (NPA)
- Canada/U.S. Treaty
 - The pipeline will follow the route set out in the Treaty and the NPA

AGIA "Must-haves" Promote Basin Development



- Rolled-in tolls up to 115% of initial rates in Alaska
- Open Season every 2 years
- In-State deliveries
 - Distance-sensitive tolls
 - Minimum 5 delivery points
- Low equity ratio requirement for pipeline sponsors
- State fiscal incentives (if any) targeted to AGIA pipeline shippers

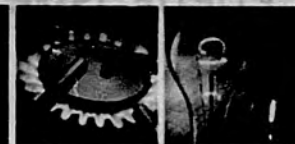
Long-run Basin Development – Pipeline Expansions



- Value to Producers / Governments?
- Does Alaska have enough gas?
- Drilling impacts?
- Impact of rolled-in tolls?
 - Minimum 2 delivery points
 - Distance-sensitive tolls
- In-State deliveries
- Open season every 5 years
- Rolled-in tolls up to 112% of initial rates in Alaska



Value of Potential Expansions (\$Billions)¹

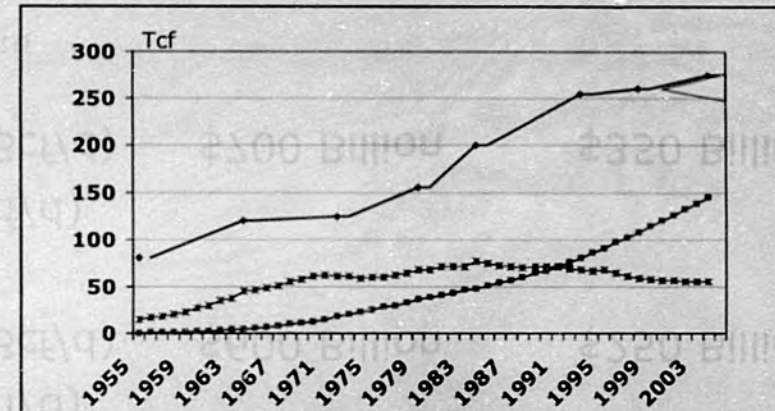
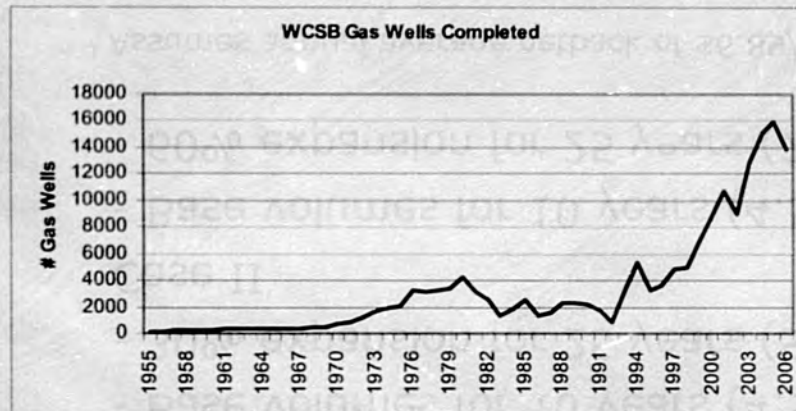


	<u>Producer/Govts. Total Revenue *</u>	<u>Expansion Value</u>
Base Project		
- 25 years @ 4.5 Bcfd	\$350 Billion	
Expansions		
Case I		
- Base volumes for 10 years (4.5 Bcf/d)		
- 30% expansion for 25 years (5.9 Bcf/d)	\$600 Billion	\$250 Billion
Case II		
- Base volumes for 10 years (4.5 Bcf/d)		
- 60% expansion for 25 years (7.2 Bcf/d)	\$700 Billion	\$350 Billion

¹ Assumes annual average netback of \$6.89/MMbtu

* Direct revenue only
- no indirect impacts from additional E&P activity and spin-offs

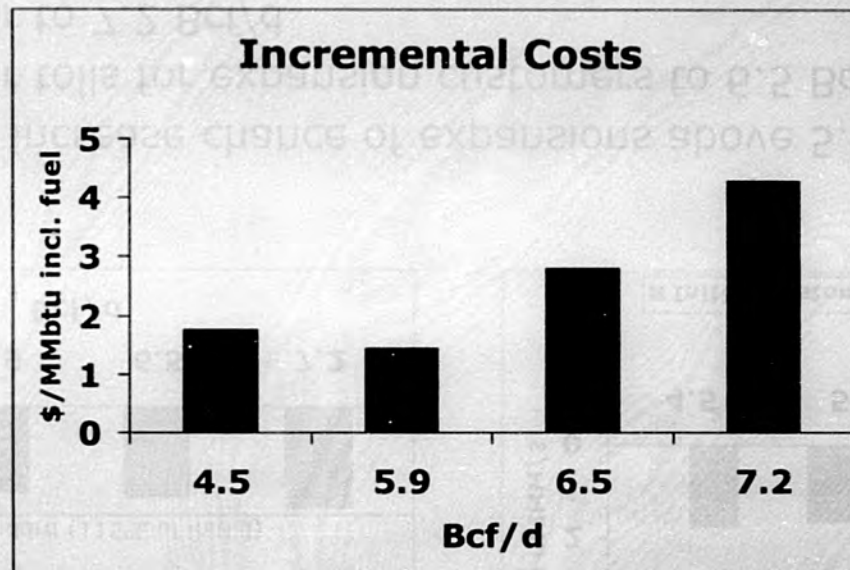
Basin Development – Western Canada Example



— Ultimate Resource Potential Estimate
— Proven Reserves
— Cumulative Production

- Pipeline expansion can create “virtuous circle”
 - More exploration and drilling
 - If successful, leads to more pipeline expansion
- Exploration and drilling drives service industry and employment over long term

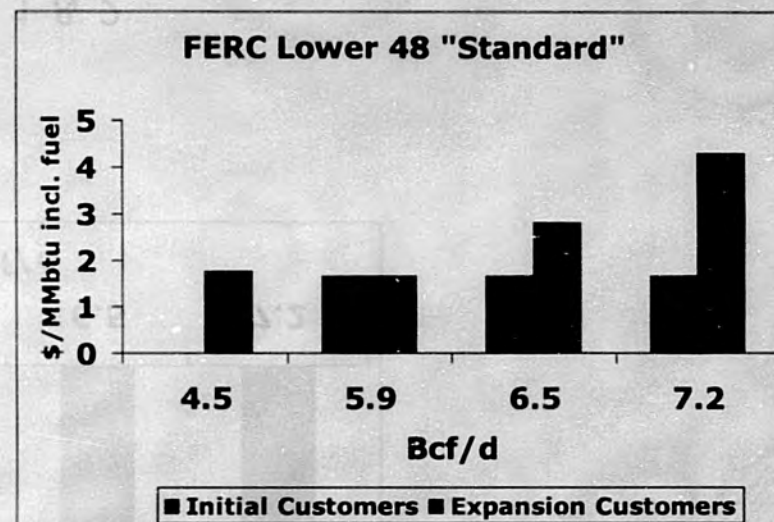
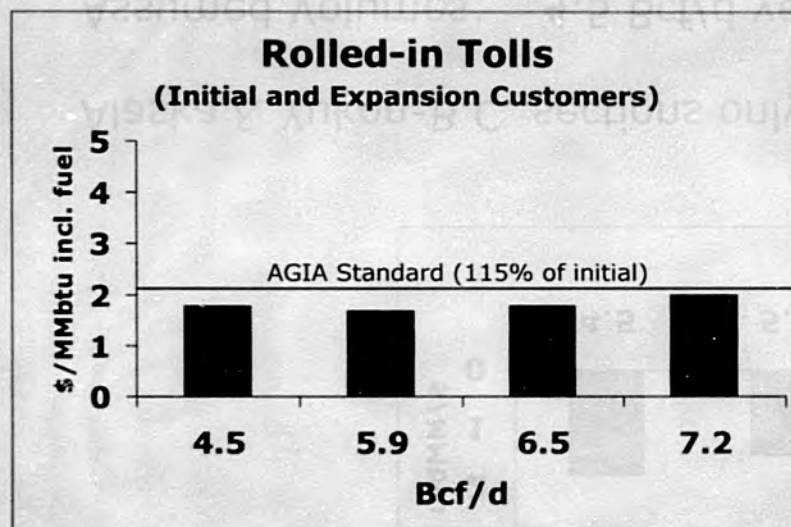
Impact of Rolled-in Tolls?



Alaska & Yukon-B.C. sections only

Assumed Volumes: 4.5 Bcf/d years 1 & 2
5.9 Bcf/d years 3 & 4,
6.5 Bcf/d years 5 & 6,
7.2 Bcf/d years 7 & beyond

Impact of Rolled-in Tolls?



- Rolled-in tolls increase chance of expansions above 5.9 Bcf/d
 - 35% lower tolls for expansion customers to 6.5 Bcf/d
 - 50% lower to 7.2 Bcf/d

Summary



- Last year, the Administration and Legislature established AGIA as Alaska's transparent and competitive process to advance a gas pipeline project
 - AGIA was structured to encourage:
 - Construction of base project
 - Long-run basin development
 - Open access terms for:
 - Initial and future shippers
 - In-State, Lower 48, and LNG markets
- TransCanada has the credentials and capacity to build, own, operate and expand the project
- TransCanada's objectives are aligned with AGIA
 - Early in-service
 - Long-run basin development
 - Open access – equitable treatment for all customers

presented 6-24-08 - Tuesday
Palmer Train Depot 1-6 pm

AGIA

Summary of the Commissioners' Findings and Determination

Special Session
June 2008

Commissioners' AGIA Findings and Determination



- The pipeline project proposed by TC Alaska's application
 - will sufficiently maximize the benefits to the people of Alaska, and
 - merits issuance of an AGIA license.
- Issuing an AGIA License to TC Alaska maximizes benefits to Alaskans more than pursuing an LNG project or the Producers Project.

Maximizing Benefits to Alaskans



- Get a Pipeline
 - Jobs and long-term careers
 - Opportunity of affordable energy for Alaskans
 - Maximize state revenue and create opportunity for future growth of state economy
- Handwritten notes:*
- ① Make pt @ dist. sensitive rates
 - ② Expansion Provisions
 - ③ doesn't interfere w/ Bullet Line pjt.
 - ① Lowest reasonable Transportation Rates (tariff)
 - ② Expansion Provisions

The Alaska Gasline Inducement Act



Maximizing Benefits to Alaskans



- Get a Pipeline
 - A feasible project plan, sponsored by a capable pipeline company
 - An economic project likely to attract firm transportation commitments and secure financing
- Jobs and long-term careers
- Opportunity of affordable energy for Alaskans
- Maximize state revenue and create opportunity for future growth of state economy

Maximizing Benefits to Alaskans



- Get a Pipeline
 - Does not interfere with "Bullet Line" project
 - Expansion provisions
 - Off-take points and distance-sensitive rates
- Opportunity for affordable energy for Alaskans
- Jobs and long-term careers
- Maximize state revenue and create opportunity for future growth of state economy

Maximizing Benefits to Alaskans



- Get a Pipeline
- Jobs and long-term careers
- Opportunity of affordable energy for Alaskans
 - Off-Take Points, and Distance-Sensitive Rates
 - Expansion Provisions
 - Does not interfere with “Bullet Line” project
- Maximize state revenue and create opportunity for future growth of state economy

Maximizing Benefits to Alaskans



- Get a Pipeline
- Jobs and long-term careers
- Opportunity of affordable energy for Alaskans
- Maximize state revenue and create opportunity for future growth of state economy
 - Lowest Reasonable Transportation Rates (tariff)
 - Expansion Provisions

TC Alaska Project Evaluation



- Economic Evaluation
 - Net Present Value (NPV) to the State
 - NPV to the Producers
- Likelihood of Success

The Alaska Gasline Inducement Act



TC Alaska Project Evaluation



- As allowed in AGIA, TC Alaska's application had alternative project designs based on how much gas was committed at the initial open season
- Analysis considered many different possible designs



NPV Analysis



- Two “Base Cases” Reported for TC Alaska’s Project

- “Proposal Base Case”

- 4.5 Bcf/d (including 0.9 Bcf/d from Pt. Thomson)
 - 75/25 debt to equity
 - 14% return on equity
 - 25 year shipping contracts

- “Conservative Base Case”

- 4.0 Bcf/d (No gas from Pt. Thomson)
 - 75/25 debt to equity
 - 14% return on equity
 - 20 year shipping contracts

NPV Analysis



- Factors in NPV Analysis *— "looking out 35 yrs from now"*
 - Gas Prices
 - Transportation Costs
 - Pipeline Project Capital Costs
 - Cost Escalation Rates
 - Initial Pipeline Throughput
 - Tariff Terms (e.g. debt to equity ratio)
 - Pipeline Construction Schedule
 - Gas Production Costs

Project Economic Analysis



- Gas Price Models
 - Separate price forecasts were obtained from
 - US DOE's Energy Information Administration (EIA)
 - Wood Mackenzie
 - Gas Strategies Consulting
 - Black and Veatch

- Factors in NPV Analysis



Project Economic Analysis



- Project Cost and Schedule
 - “Technical Team”, included
 - Westney Consulting
 - Energy Project Consultants
 - Pingo International
 - AMEC Paragon
 - Colt Engineering
 - Mustang Management
 - Energy Operations Consulting
 - Black and Veatch
 - Merlin Associates

Project Economic Analysis



- Project Cost Estimates – Mid-Range
 - Proposal Base Case
 - \$31 Billion in today's dollars
 - \$3.19 tariff
 - \$45 Billion in dollars spent
 - \$4.73 tariff
 - Conservative Base Case
 - \$29 Billion in today's dollars
 - \$3.59 tariff
 - \$42 Billion in dollars spent
 - \$5.33 tariff

Project Economic Analysis



Project Cost Estimates – Why Higher than TC Alaska's?

- Different Purposes – Project Planning vs. Risk Assessment
- TC Alaska's Cost Estimates are “realistically aggressive” and appropriate for project planning
 - Analytical team tested sensitivity of estimates to changed circumstances
- Difference Between Assumptions Mandated in the RFA and the final analysis assumptions
 - Exchange rate, cost escalation rate
- Assumed “Neutral Competence” of Operator
- Cost of the GTP
 - One vs. Two seasons of sea-lift

Project Economic Analysis



- Project Schedule
 - Mid-range probability put first gas in 2020
 - State's Canadian Counsel advised on expected regulatory timeline in Canada, including First Nation issues
 - TC Alaska's Cost Estimates are "realistically aggressive" and
 - Different purposes – Project Planning vs. Risk Assessment

Project Cost Estimates – Why higher than TC Alaska's?



Project Economic Analysis



Reporting NPV Results – Proposal Base Case

– Gas Prices (WoodMac)

– Transportation Costs

- Pipeline Project Capital Costs (\$31.5 billion)
- Cost Escalation Rates (4%)
- Initial Pipeline Throughput (4.5 Bcf/d)
- Tariff Terms (e.g. debt to equity ratio[75/25])

– Pipeline Construction Schedule (2020)

– Gas Production Costs

Project Economic Analysis



Proposal Base Case Results

- The State of Alaska would realize an estimated cash flow of \$261.5 billion, and an estimated NPV of approximately \$66.1 billion at a discount rate of 5%.
- The Major North Slope Producers would realize an estimated cash flow of \$147.4 billion, and an estimated NPV of approximately \$13.5 billion at a discount rate of 10%.

Project Economic Analysis



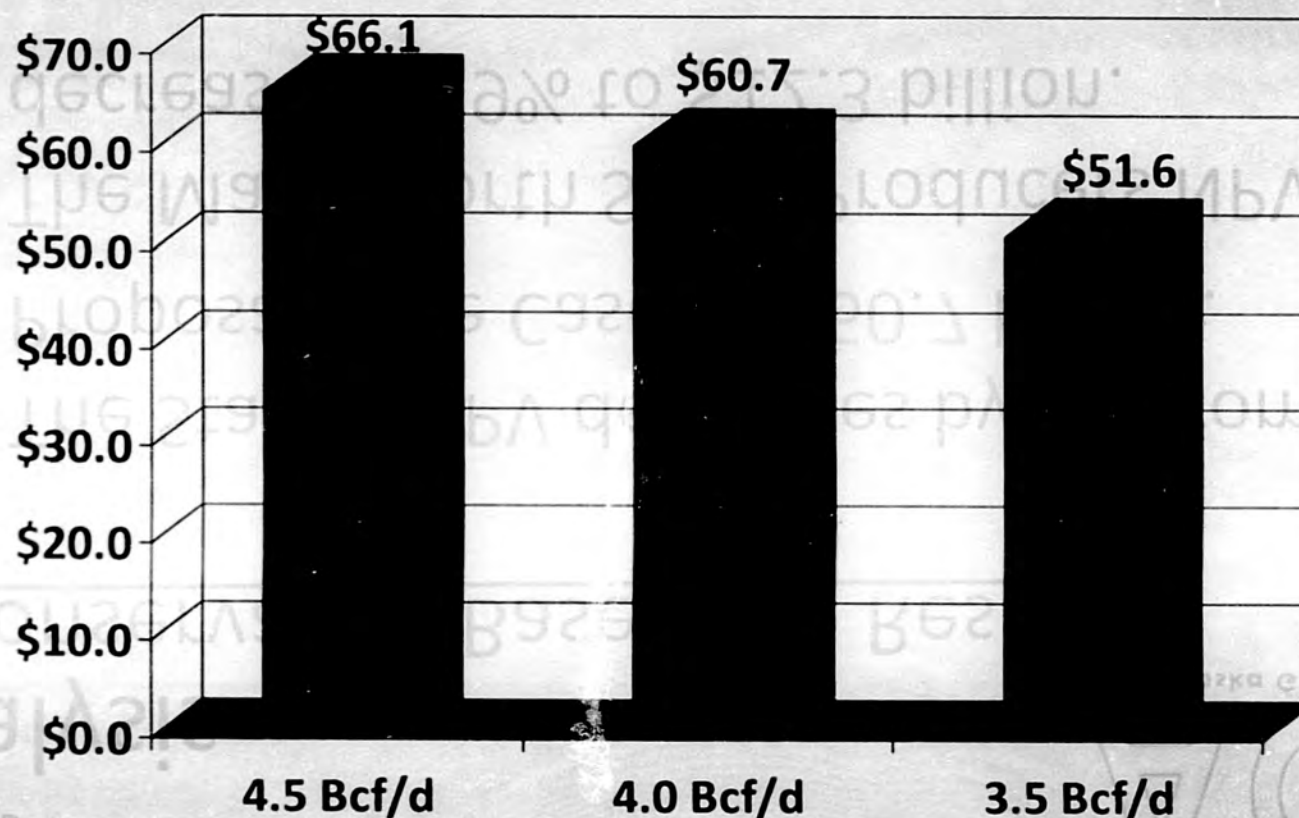
Conservative Base Case Results

- The State's NPV decreases by 8% from the Proposal Base Case to \$60.7 billion.
- The Major North Slope Producers NPV decreases by 9% to \$12.3 billion.

Project Economic Analysis



State NPV at Various Initial Throughput



■ State NPV

*this illustration
assumes no
expansions*

Project Economic Analysis



- The Project Economics are Extremely Robust
 - It would take a “perfect storm” of worst case scenarios of multiple factors for the Project to be uneconomic to the Producers.
 - Indeed, a “perfect storm” of low gas prices and high construction costs, together, are not enough to generate a negative NPV for the State.

\$500 Million Matching Contribution



Effect of State's \$500 Million Matching Contribution to TC Alaska's Project

- Tariff is reduced by 6 cents
- State's NPV increases by \$200 Million

TC Alaska Project Is Likely to Succeed



- TC Alaska has submitted a plan for its project that is technically feasible, reasonable, and specific.
- TC Alaska has demonstrated the technical and financial ability to construct the project.
- TC Alaska has submitted a reasonable commercial plan which, coupled with economic and political factors, should help to encourage firm shipping commitments

Attracting Gas Commitments to TC Alaska's Project



- Robust economics and reasonable commercial terms.
- Extremely capable pipeline company.
- State's Upstream Inducements
 - 10-year tax certainty
 - Royalty valuation certainty
- Avoid Problems of Not Committing Gas
 - Duty to develop
 - Anti-trust
 - Congressional Attention
 - Shareholder Questions

sort w/ modify leases of those who commit gas to antitrust pipe to make them more attractive to gas production (vs oil)

TC Alaska Project Is Likely to Succeed



Contingent Liability Issue *(withdrawn partners)*

- Risk of litigation is significantly overstated.
- Potential legal claims by withdrawn partners are, at best, weak and unlikely to succeed.
- Not a reasonable basis for the Major North Slope Producers to refrain from partnering with TC Alaska or contracting with the Project.

TC Alaska Project Comparisons



- Not a reasonable basis for the Major North
- Producer Project (Denali)
- Potential legal claims by withdrawn partners
- Risk of litigation is significantly overstated.

Contingent Liability Issue (contingent liability)

success

TC Alaska project is likely to



Denali Project Is More Risky For the State



The Alaska Gasline Inducement Act

- Lack of commitments create risks for state
- No certainty on project schedule
 - Likely Anti-trust Challenges
- Undefined tariff terms
 - Example, 50/50 debt to equity increases the tariff by \$1 compared to 75/25, costing the state over \$8 billion in NPV
- Undefined state fiscal concessions needed for Denali
 - SGDA concessions worth over \$10 billion
- No Certainty on Expansion Provisions
 - Producer Incentives to exercise basin control
 - Stifles North Slope basin development
 - Loss of long-term jobs and careers
 - Loss of Potential LNG development

changes in taxes, royalties, judicial systems were required before - don't see that as having changed.

Producer Pipeline Considerations



- Even if TC Alaska License is issued, Producers can proceed with Denali, commit gas to it, and build it without any additional state concessions
- State has significant interest in attracting Producers to commit gas to TC Alaska's project
 - Expansion Provisions
 - Lowest reasonable tariff - Highest Netback
- State Needs to Use Power of Competition to Protect Alaskans Interests

LNG Analysis



- Extensive Analysis of LNG economics and likelihood of success

- Asian market price
- LNG project costs and schedule
- How LNG projects are developed
- Potential hurdles for LNG projects



LNG Economic Analysis



- Ran economics on both a 2.7 bcf/d and 4.5 Bcf/d projects
- Alaskan LNG is economical and viable
- Confirmed Asian market premium price
- Liquefaction plant costs create an economic drag
- LNG does not provide time or cost savings over TC Alaska project
- State and Producer NPV lower under all stand-alone LNG options than under TC Alaska project

LNG Likelihood of Success



- LNG is viable, but less likely to succeed without TC Alaska Project
 - Entire project stream, from gas supply, to pipeline, to liquefaction, to tankers, to re-gasification, to gas sales must be negotiated and executed nearly simultaneously
 - Expansions are more difficult because of size
 - Export authorization is a challenge

Opportunity for “Y line”

LNG



- If gas is committed, TC Alaska will transport gas from Delta Junction to Prince William Sound
- LNG project will benefit from TC Alaska's financial and technical capabilities
- State will benefit from supplying gas to both
- LNG and North American markets
- “Y line” is the best LNG option for the state

Additional Considerations

AGIA
The Alaska Gasline Inducement Act

Year	Annual Spend	Expenditure State	Expenditure TC Alaska	Expenditure Alaska 3X TC	Exposure State Cumulative
2000	\$200	\$200	\$200	\$200	\$200
2001	\$214	\$214	\$214	\$214	\$414
2002	\$234	\$234	\$234	\$234	\$648
2003	\$245	\$245	\$245	\$245	\$893
2004	\$247	\$247	\$247	\$247	\$1140
2005	\$247	\$247	\$247	\$247	\$1387
2006	\$247	\$247	\$247	\$247	\$1634
2007	\$247	\$247	\$247	\$247	\$1881
2008	\$247	\$247	\$247	\$247	\$2128
2009	\$247	\$247	\$247	\$247	\$2375
2010	\$247	\$247	\$247	\$247	\$2622
2011	\$247	\$247	\$247	\$247	\$2869
2012	\$247	\$247	\$247	\$247	\$3116
2013	\$247	\$247	\$247	\$247	\$3363
2014	\$247	\$247	\$247	\$247	\$3610
2015	\$247	\$247	\$247	\$247	\$3857
2016	\$247	\$247	\$247	\$247	\$4104
2017	\$247	\$247	\$247	\$247	\$4351
2018	\$247	\$247	\$247	\$247	\$4598
2019	\$247	\$247	\$247	\$247	\$4845
2020	\$247	\$247	\$247	\$247	\$5092
2021	\$247	\$247	\$247	\$247	\$5339
2022	\$247	\$247	\$247	\$247	\$5586
2023	\$247	\$247	\$247	\$247	\$5833
2024	\$247	\$247	\$247	\$247	\$6080
2025	\$247	\$247	\$247	\$247	\$6327
2026	\$247	\$247	\$247	\$247	\$6574
2027	\$247	\$247	\$247	\$247	\$6821
2028	\$247	\$247	\$247	\$247	\$7068
2029	\$247	\$247	\$247	\$247	\$7315
2030	\$247	\$247	\$247	\$247	\$7562
2031	\$247	\$247	\$247	\$247	\$7809
2032	\$247	\$247	\$247	\$247	\$8056
2033	\$247	\$247	\$247	\$247	\$8303
2034	\$247	\$247	\$247	\$247	\$8550
2035	\$247	\$247	\$247	\$247	\$8797
2036	\$247	\$247	\$247	\$247	\$9044
2037	\$247	\$247	\$247	\$247	\$9291
2038	\$247	\$247	\$247	\$247	\$9538
2039	\$247	\$247	\$247	\$247	\$9785
2040	\$247	\$247	\$247	\$247	\$10032
2041	\$247	\$247	\$247	\$247	\$10279
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2043	\$247	\$247	\$247	\$247	\$10773
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2045	\$247	\$247	\$247	\$247	\$11267
2046	\$247	\$247	\$247	\$247	\$11514
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2049	\$247	\$247	\$247	\$247	\$12255
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2061	\$247	\$247	\$247	\$247	\$15219
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2063	\$247	\$247	\$247	\$247	\$15713
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2065	\$247	\$247	\$247	\$247	\$16207
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2068	\$247	\$247	\$247	\$247	\$16948
2069	\$247	\$247	\$247	\$247	\$17195
2070	\$247	\$247	\$247	\$247	\$17442
2071	\$247	\$247	\$247	\$247	\$17689
2072	\$247	\$247	\$247	\$247	\$17936
2073	\$247	\$247	\$247	\$247	\$18183
2074	\$247	\$247	\$247	\$247	\$18430
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2077	\$247	\$247	\$247	\$247	\$19171
2078	\$247	\$247	\$247	\$247	\$19418
2079	\$247	\$247	\$247	\$247	\$19665
2080	\$247	\$247	\$247	\$247	\$19912
2081	\$247	\$247	\$247	\$247	\$20159
2082	\$247	\$247	\$247	\$247	\$20406
2083	\$247	\$247	\$247	\$247	\$20653
2084	\$247	\$247	\$247	\$247	\$20900
2085	\$247	\$247	\$247	\$247	\$21147
2086	\$247	\$247	\$247	\$247	\$21394
2087	\$247	\$247	\$247	\$247	\$21641
2088	\$247	\$247	\$247	\$247	\$21888
2089	\$247	\$247	\$247	\$247	\$22135
2090	\$247	\$247	\$247	\$247	\$22382
2091	\$247	\$247	\$247	\$247	\$22629
2092	\$247	\$247	\$247	\$247	\$22876
2093	\$247	\$247	\$247	\$247	\$23123
2094	\$247	\$247	\$247	\$247	\$23370
2095	\$247	\$247	\$247	\$247	\$23617
2096	\$247	\$247	\$247	\$247	\$23864
2097	\$247	\$247	\$247	\$247	\$24111
2098	\$247	\$247	\$247	\$247	\$24358
2099	\$247	\$247	\$247	\$247	\$24605
2100	\$247	\$247	\$247	\$247	\$24852

\$Millions

AGIA
The Alaska Gasline Inducement Act

Treble Damages Exposure



\$Millions

Year	Annual Spend	State Expenditure	TC Alaska Expenditure	3x TC Alaska Expenditure	Cumulative State Exposure
2008	\$41	\$21	\$21	\$62	\$82
2009*	\$42	\$21	\$21	\$63	\$166
2009	\$34	\$31	\$3	\$10	\$207
2010	\$141	\$127	\$14	\$42	\$376
2011	\$144	\$130	\$14	\$43	\$549
2012	\$147	\$132	\$15	\$44	\$726
2013	\$75	\$39	\$36	\$109	\$874
Total	\$625	\$500	\$125	\$374	\$874

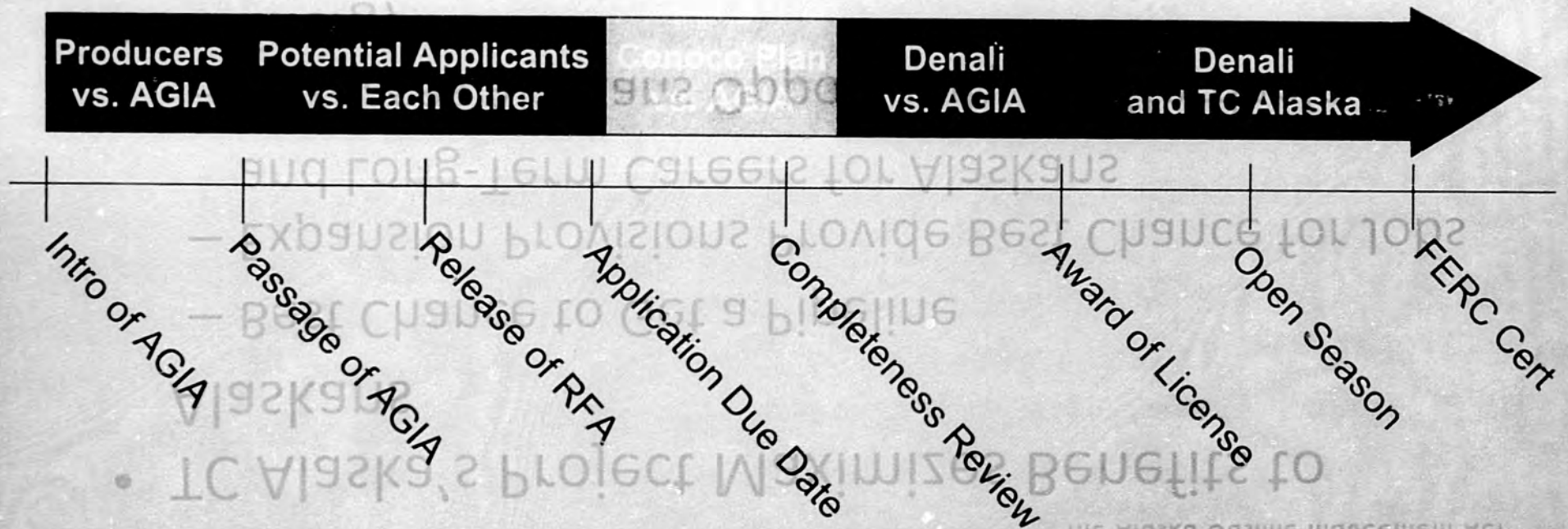
*Scheduled Open Season

Expenditure Schedule Based on TC Alaska Application

Competition



- TC Alaska's project is better for the state than
 - Maximizes state revenue



Summary



- TC Alaska's Project Maximizes Benefits to Alaskans
 - Best Chance to Get a Pipeline
 - Expansion Provisions Provide Best Chance for Jobs and Long-Term Careers for Alaskans
 - Increases Alaskans Opportunity of Affordable Energy
 - Maximizes State Revenue
- TC Alaska's Project is Better for the State than LNG Options and the Producer Project (Denali)

SCOMM

155:18

presented 6-25-2008 SJUD cmte. 10:20 AM
Anch AK
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In-State Demand and AGIA's 500 MMcf/d "competing project" limit

✓ Antony Scott

Division of Oil and Gas

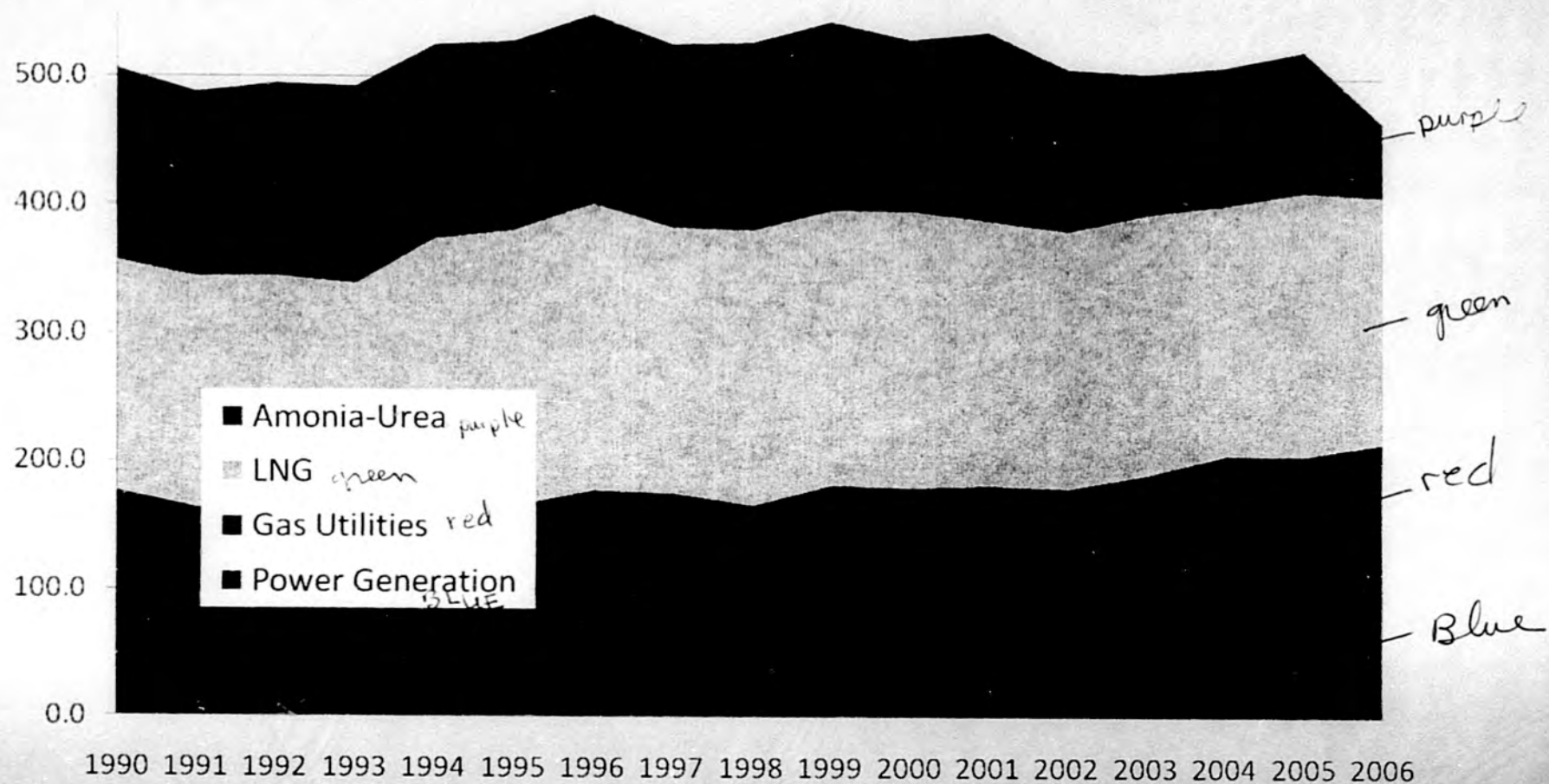
6/25/2008

Will 500 MMcf/d Project Assurance Limit Hinder Meeting In-state Needs?

Key Takeaways

- Average historical daily gas use for electricity and heating has been less than 220 MMcf/d
- Projections of future gas consumption for electricity and heating expected to stay under 300 MMcf/d through the year 2025
- Significant Cook Inlet production will expand opportunities to meet in-state needs

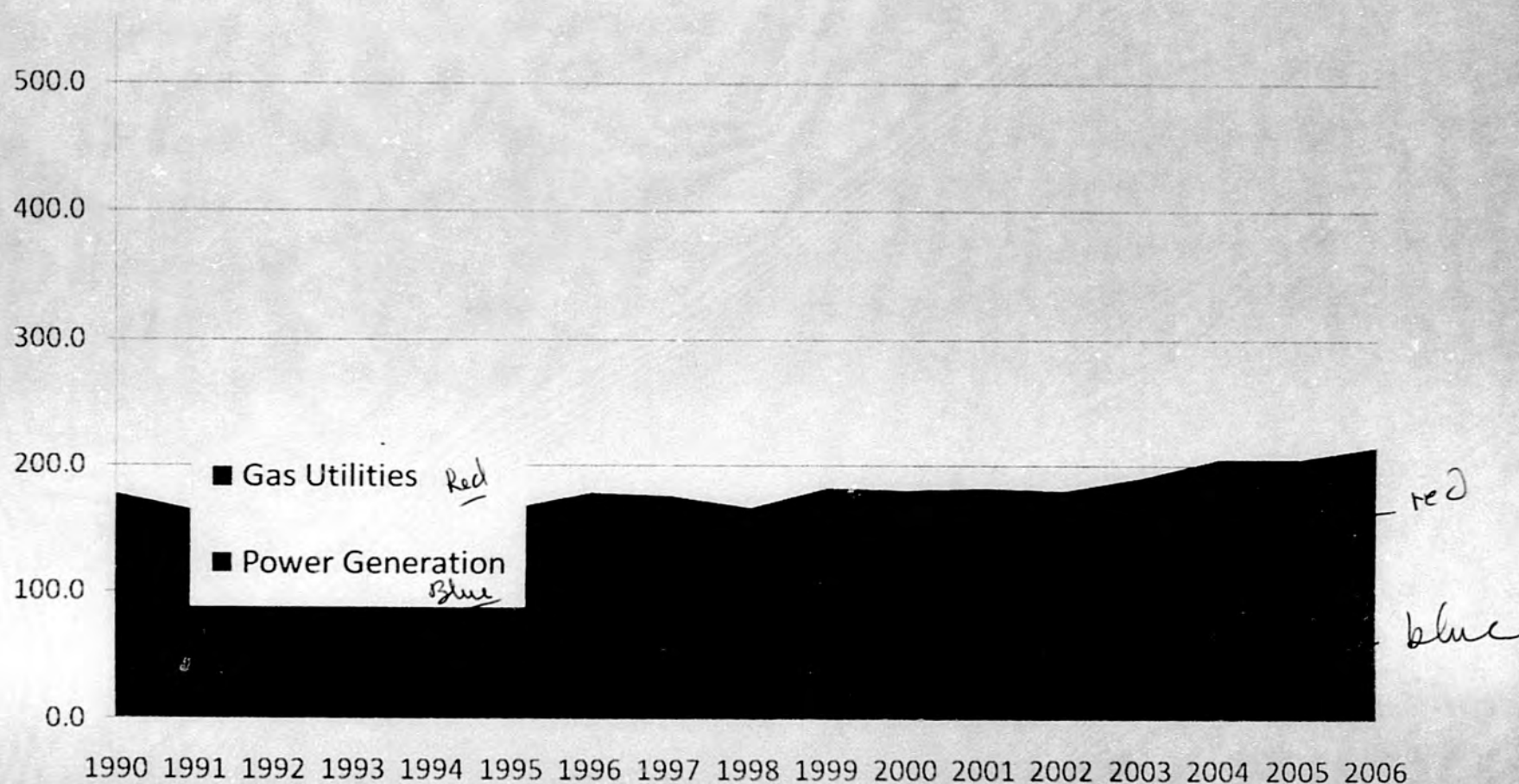
Historical Cook Inlet Gas Disposition, MMcf/d



Source: DNR 2007 Annual Report

Historical In-state Gas Use: Less than 220 MMcf/d

— mostly
cook in let
(Fbx gas used today
comes from C.I.)



Source: DNR 2007 Annual Report

Projected In-State Gas Use: SAIC

Potential Consumption and Prices by Sector

Potential Demand	Sector	Maximum Price \$/MMBtu* (2005\$)	Demand in 2025
	Residential / Commercial	\$8.50	134 MMcf/d methane
	Power	\$5.20	131 MMcf/d methane

Total projected in-state demand: 265 MMcf/d

Employed by U.S. D.O.E.
Source: Charles Thomas, SAIC, "Spur Line Analysis
– Alaska Gas Needs and Assessment", South
Central Energy Forum, 9/20/2006