

SCOMM

155:15

ALASKA STATE LEGISLATURE

Senator Charlie Huggins, Chair
Senate Special Committee on Energy
State Capitol, Room 119
Juneau, AK 99801
Phone: 465-3878
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Representative John Harris, Chair
House Rules Subcommittee on AGIA
State Capitol, Room 208
Juneau, AK 99801
Phone: 465-4859
Fax: 465-3799

Third Special Session
Twenty-Fifth Legislature

Howard Johnson Plaza, Anchorage
Thursday June 19, 2008
9:00-8:00 p.m.

Joint Meeting AGENDA

Presentations: Review of AGIA Findings and Determination; Natural Gas Pipeline Project as proposed by TransCanada Alaska Company, LLC and Foothills Pipelines Ltd. (TC Alaska) to the State of Alaska.

➤ **Net Present Value Analysis & Results** (continued from 6/18/08)

Scott Smith, Black & Veatch
Deepa Poduval, Black & Veatch
Mike Elenbaas, Black & Veatch
Paul Bloom, Goldman Sachs

➤ **TransCanada AGIA Application**

Tony Palmer, Vice President, Alaska Gas Development

➤ **Findings & Determination Summary**

Pat Galvin, Commissioner, Dept. of Revenue

not presented

Testimony: By Invitation

➤ **6:00 – 8:00 PM Public Testimony**

Testimony – Time Limit May Be Set

Teleconference- Listen Only

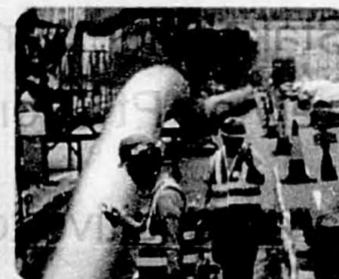
presented 10:15 AM Scott Smith (Black & Veatch)
@Anch AK

6-18-2008
6-19-2008



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BLACK & VEATCH



Net Present Value (NPV) Analysis

State of Alaska - Anchorage Special Session

June 18, 2008

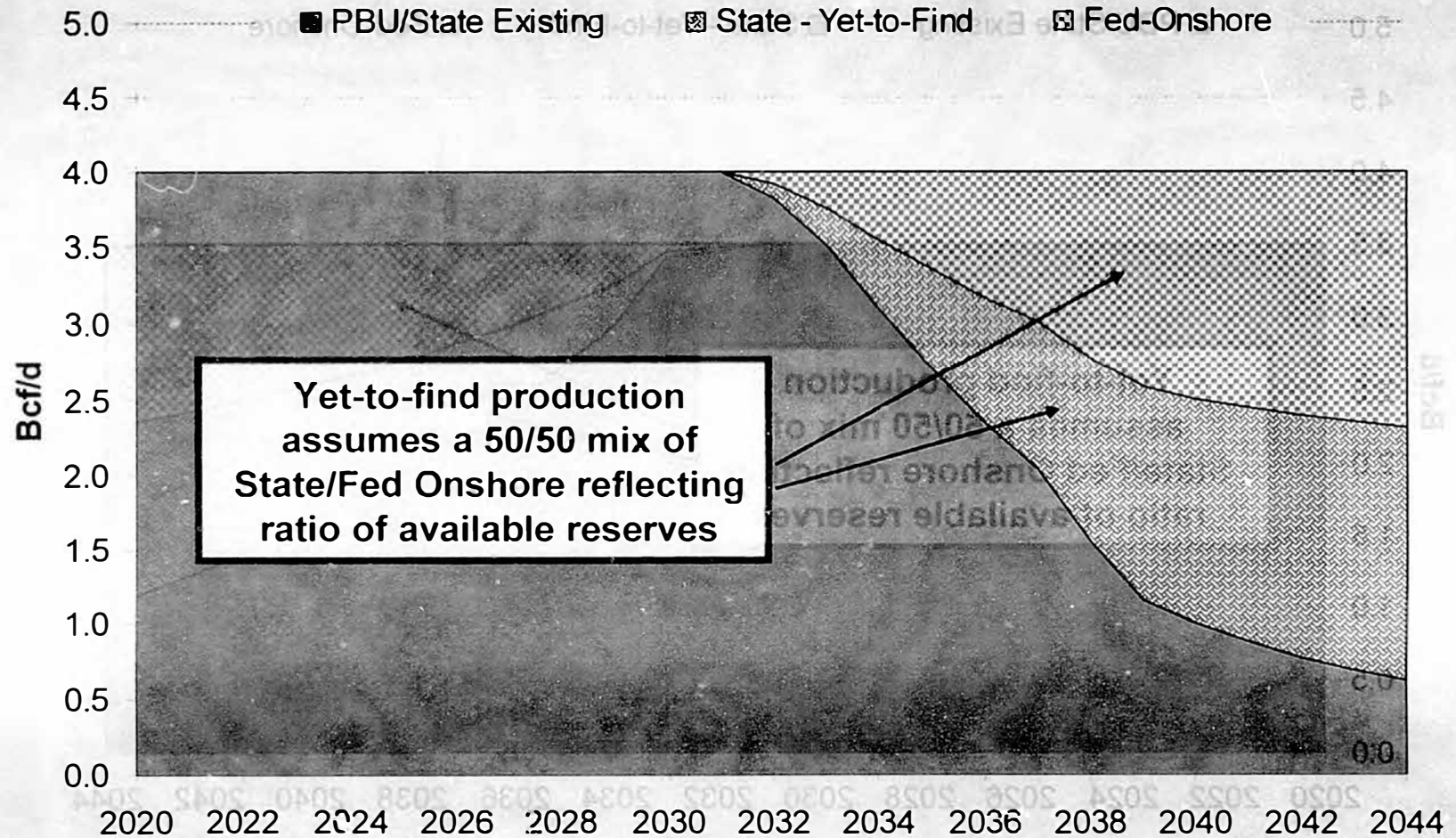


Project Economics are Robust

- NPV for Key Stakeholders Indicates Positive NPV for 4.0 Bcf/d project that does not rely on Pt Thomson
- NPV Results are Sensitive to Many Factors with Commodity Prices being the Most Significant
 - Producer NPV Remains Positive with Low Market Price Assumptions
- 4.0 Bcf/d project has acceptable netback risks, lower reserve risk than 4.5 Bcf/d project with Pt Thomson gas
- NPV positive across wide range of project cost outcomes, cost escalation scenarios
- Tariffs for Smaller Pipeline Configurations (4.0 & 3.5 Bcf/d) Increase by 13% to 21% Relative to the 4.5 Bcf/d Proposal Base Case

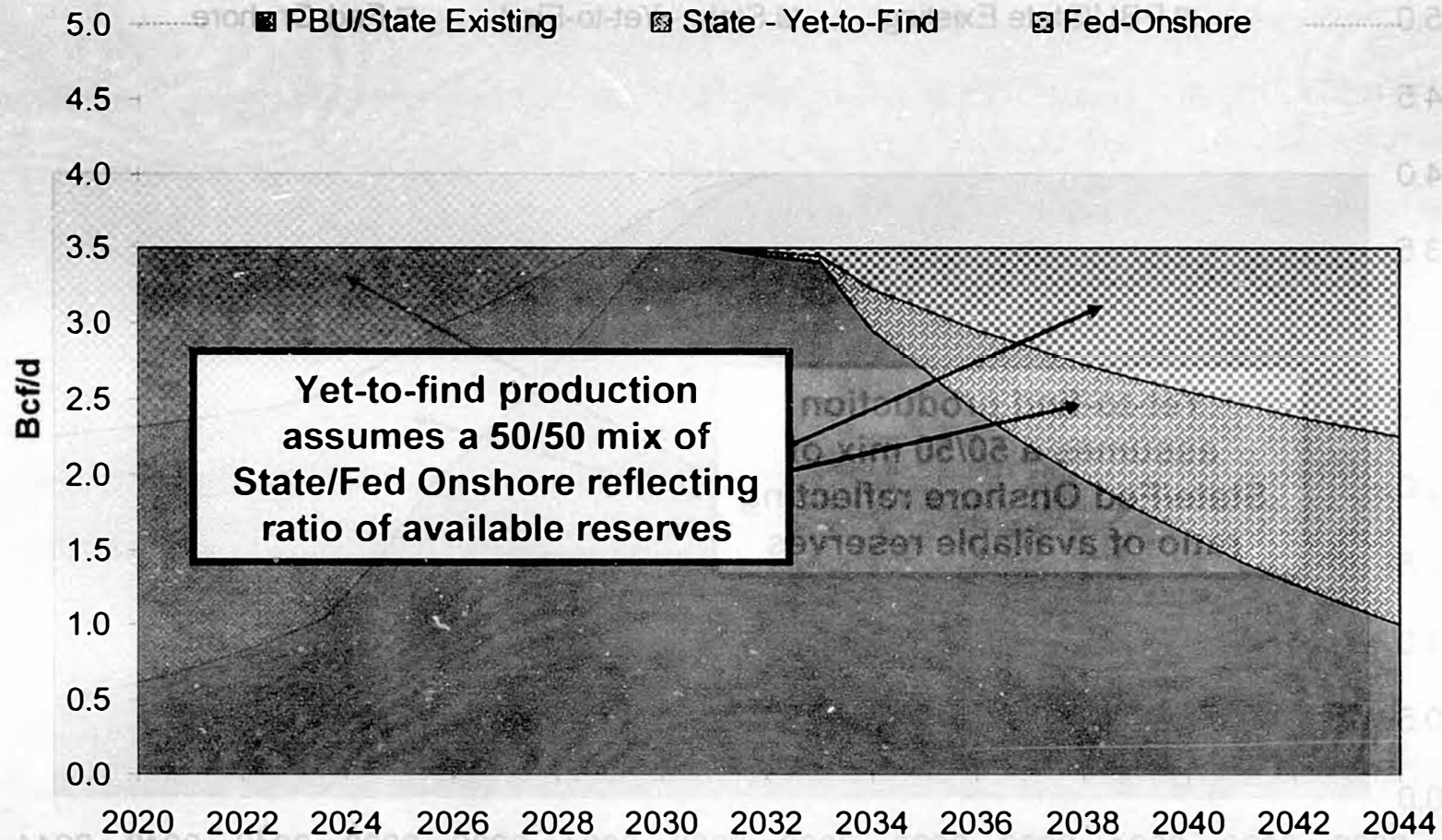


Production Assumptions: 4.0 Bcf/d Case





Production Assumptions: 3.5 Bcf/d Case





Production Assumptions used in the NPV Analysis for the 4.0 Bcf/d Conservative Base Case

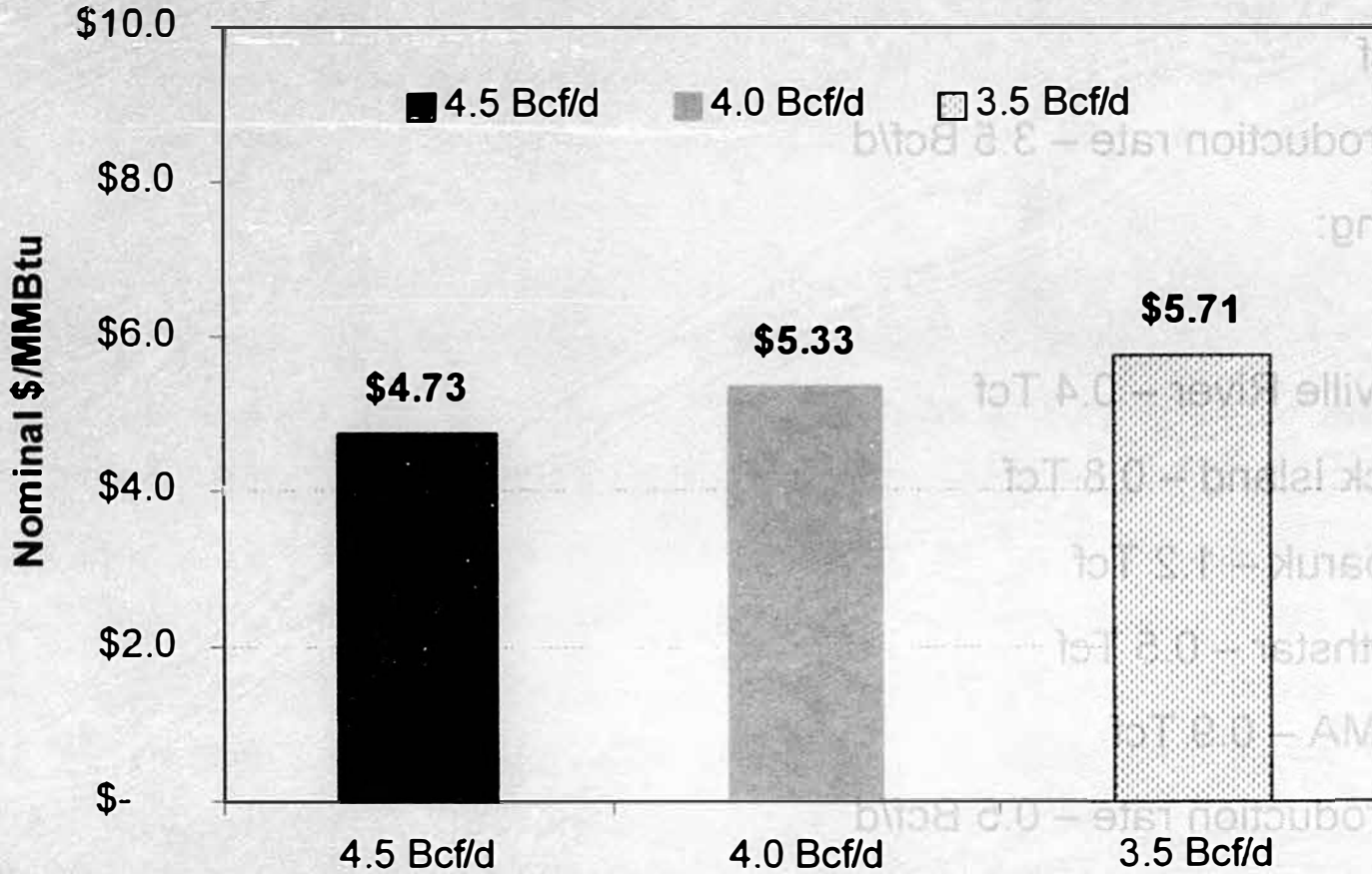
- Prudhoe Bay:
 - 24.5 Tcf
 - Initial production rate – 3.5 Bcf/d
- State existing:
 - 3.7 Tcf:
 - Colville River – 0.4 Tcf
 - Duck Island – 0.8 Tcf
 - Kuparuk – 1.2 Tcf
 - Northstar – 0.5 Tcf
 - GPMA – 0.9 Tcf
 - Initial production rate – 0.5 Bcf/d
- Note – this case assumes NO Point Thomson production





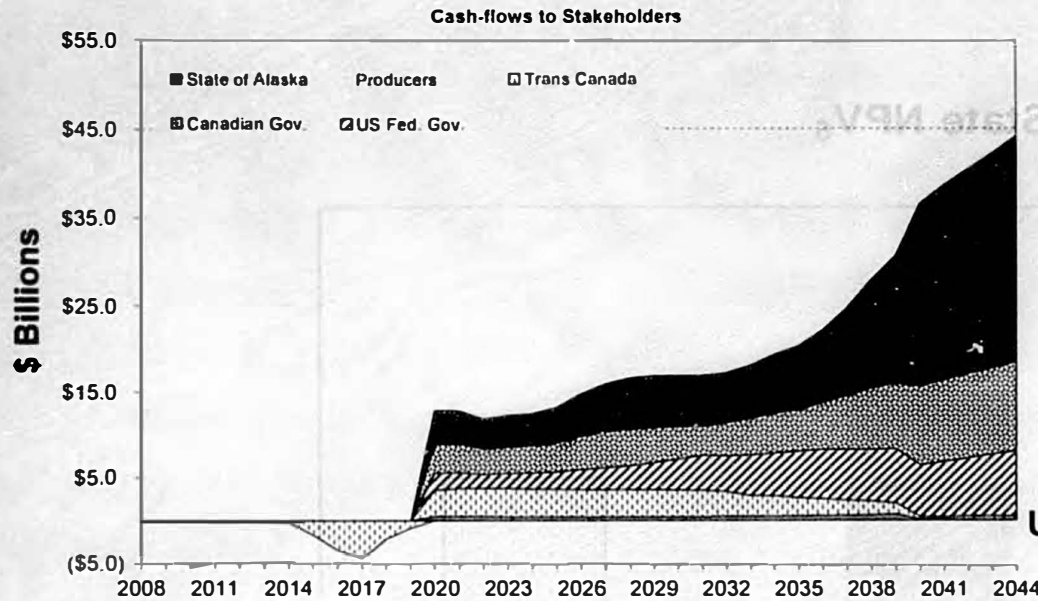
Expected Tariffs from the North Slope to the AECO Market

AECO Tariff

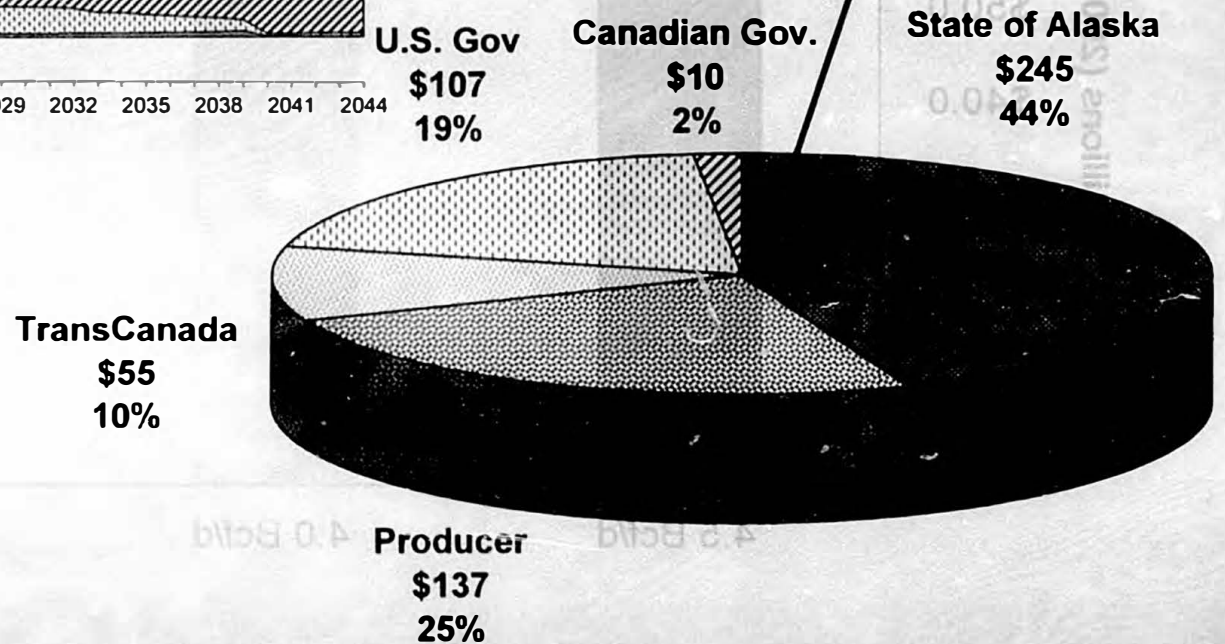




4.0 Bcf/d Conservative Base Case Cash Flows

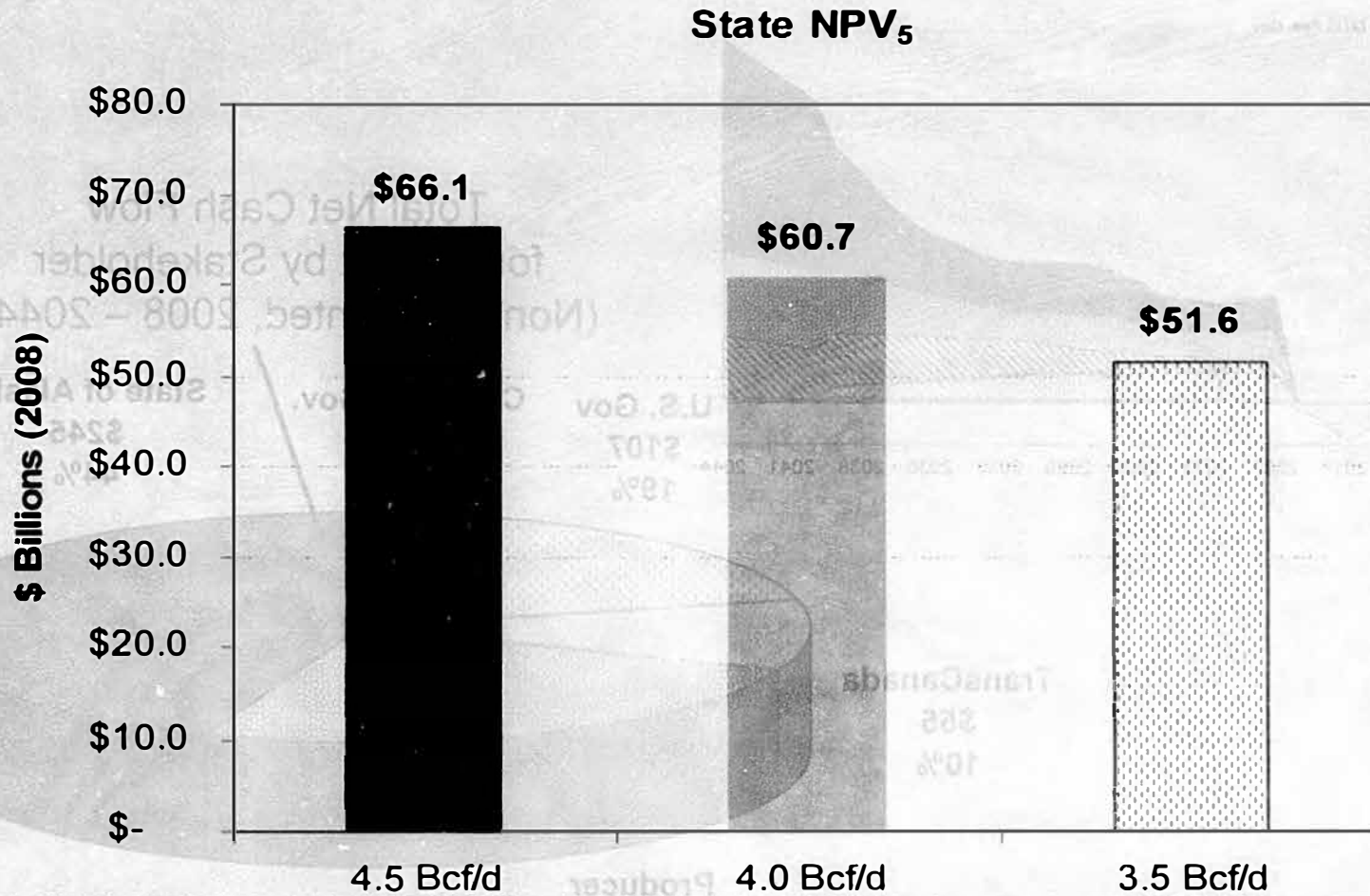


Total Net Cash Flow
for Project by Stakeholder
(Non-Discounted, 2008 – 2044)





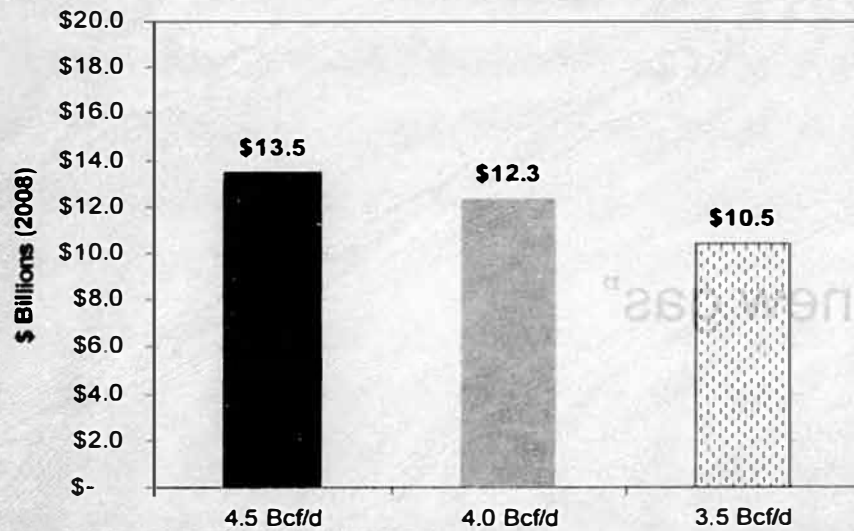
The State's NPV₅ is Lower with Smaller Project Capacity but Remains Significant



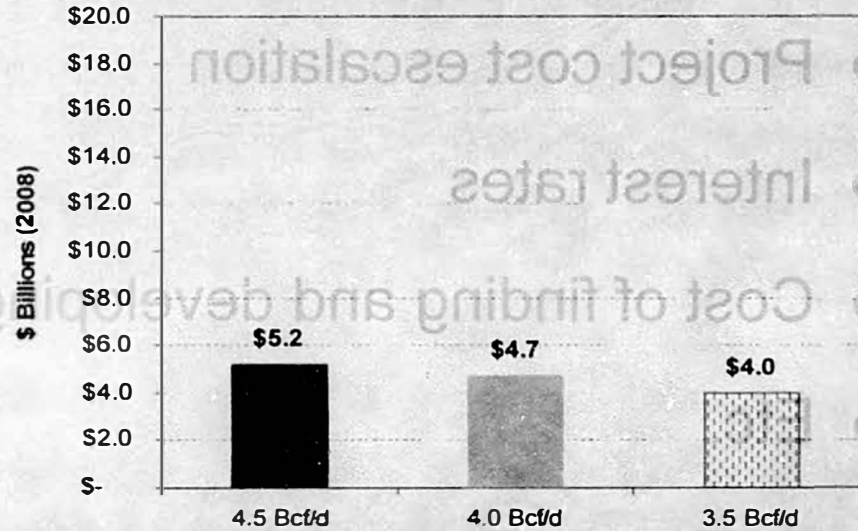


Producer NPV Shows a Similar Trend When Compared to the State

Aggregate Producer NPV₁₀



Aggregate Producer NPV₁₅





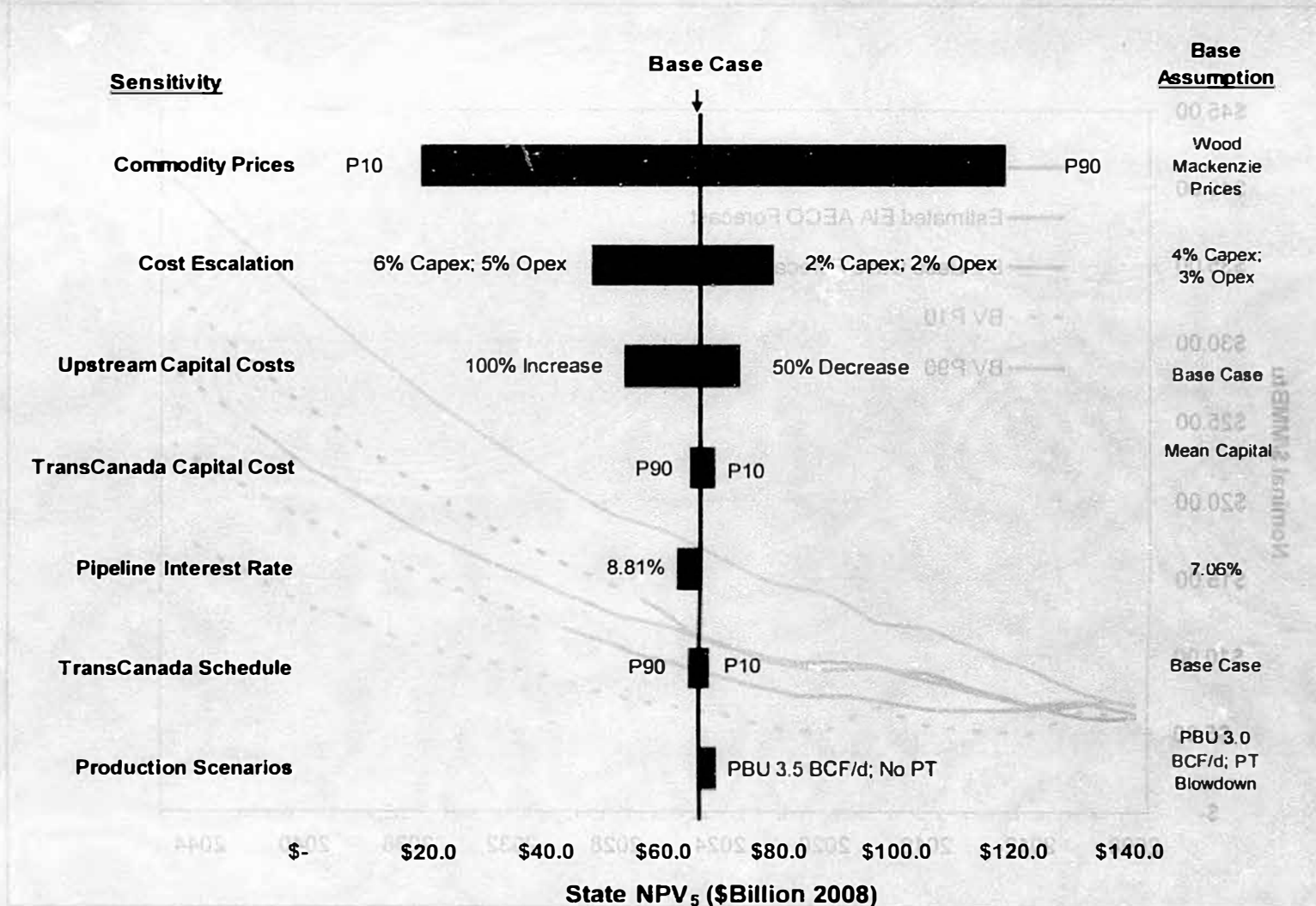
Project NPV is Affected by Many Factors

- Prices
- Project cost
- Project cost escalation
- Interest rates
- Cost of finding and developing “new gas”
- Etc.

Bottom line: Understanding how project economics are affected by uncertainty in inputs that affect cash flows.

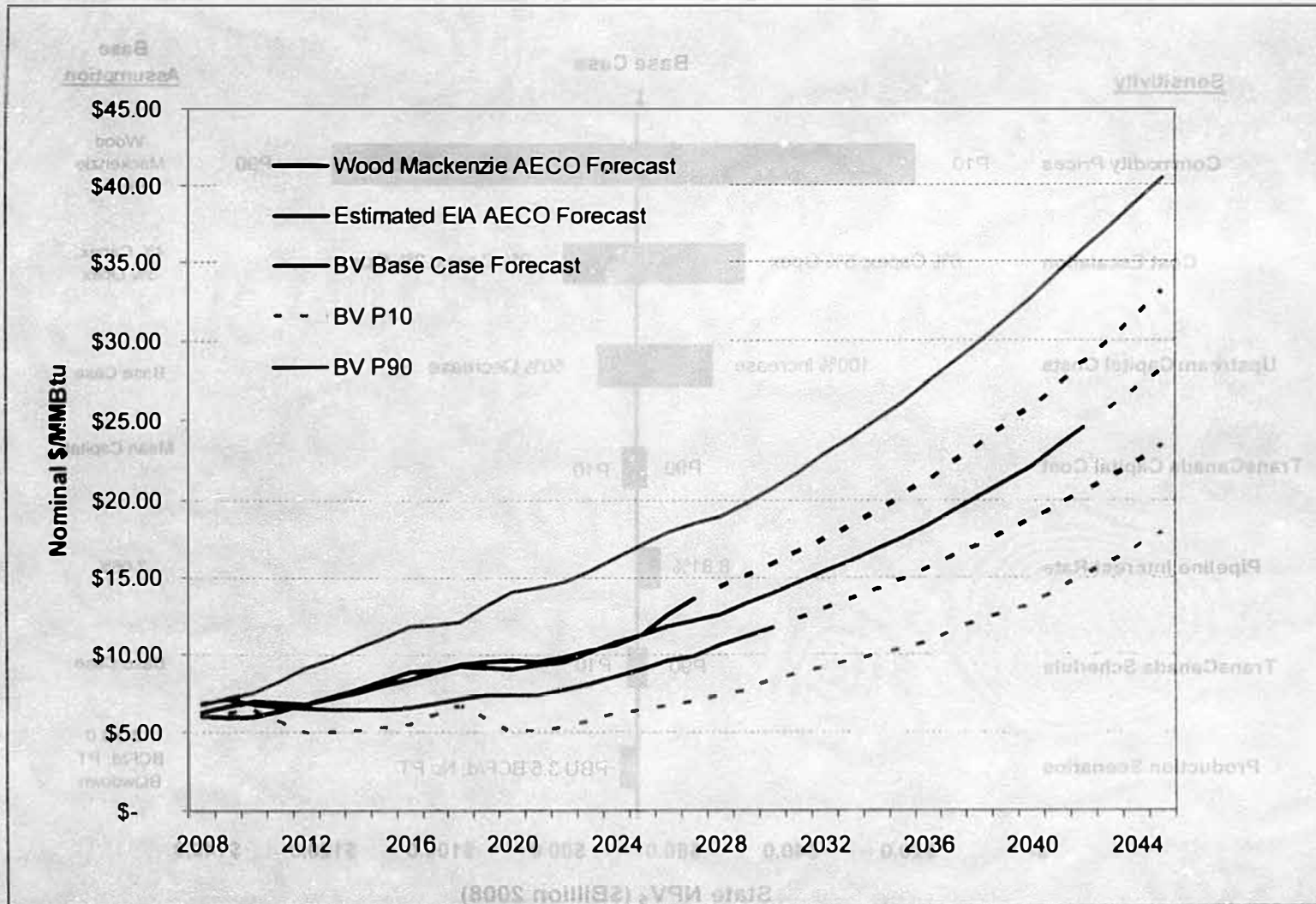


Price is a Key Driver to Variations in the NPV₅ to the State of Alaska



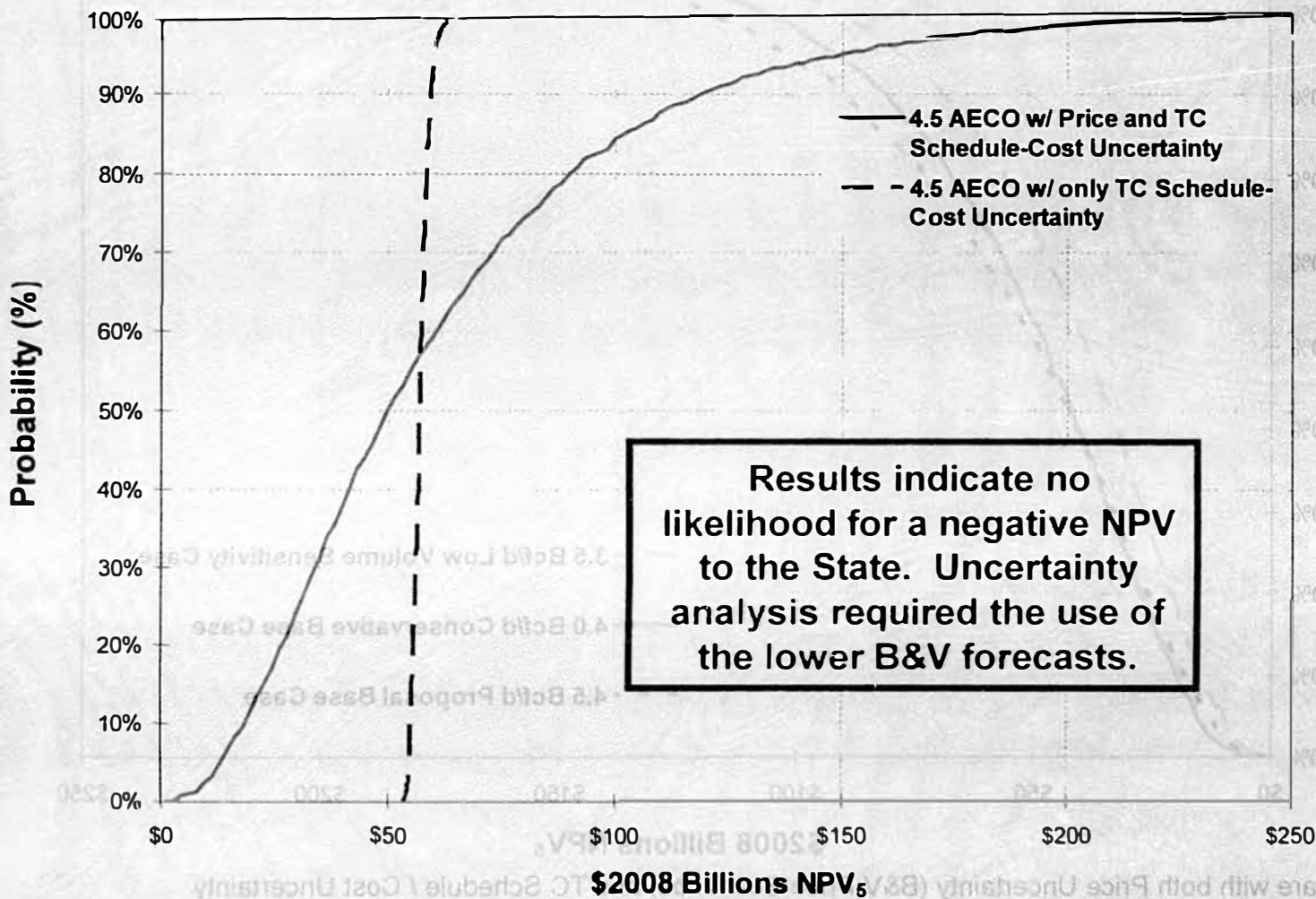


Various Price Forecasts were Considered in Analysis



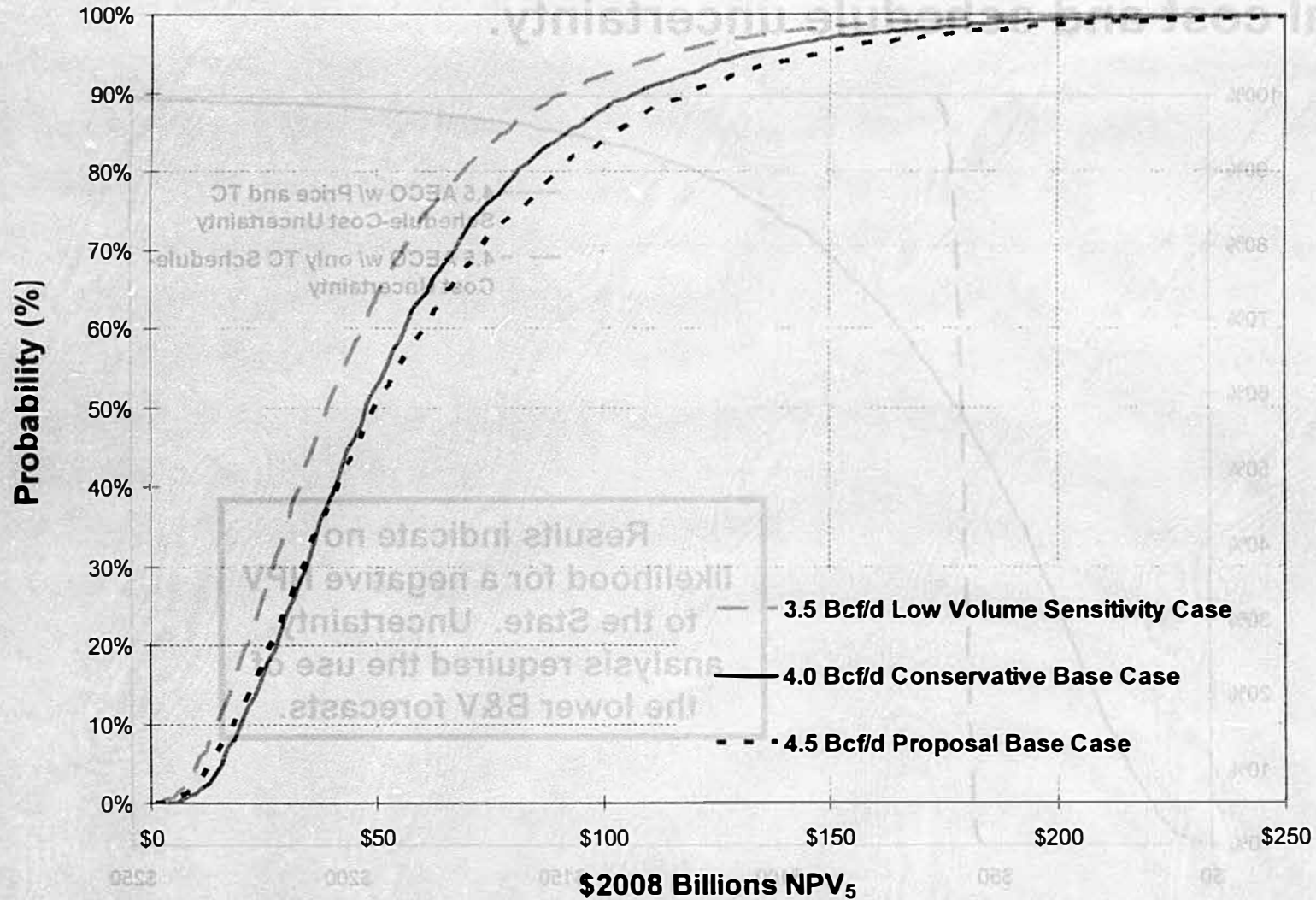


The impact from price uncertainty swamps estimated capital cost and schedule uncertainty.





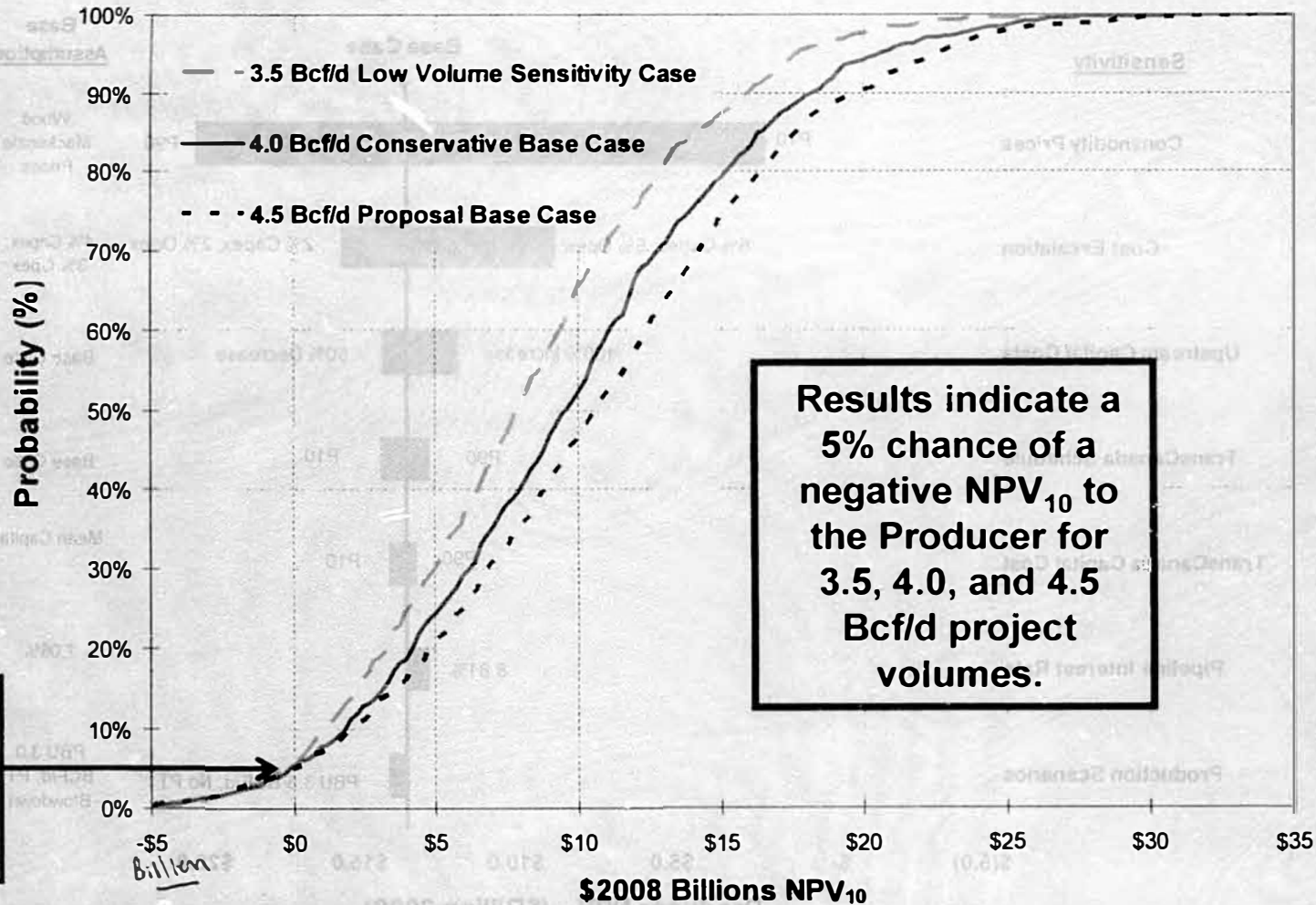
Lower Project Volumes yield similar State NPV results



Results shown are with both Price Uncertainty (B&V Price Scenarios) and TC Schedule / Cost Uncertainty



The producers have a very low likelihood for a negative NPV₁₀, even with lower project volume of 3.5 or 4.0 Bcf/d.



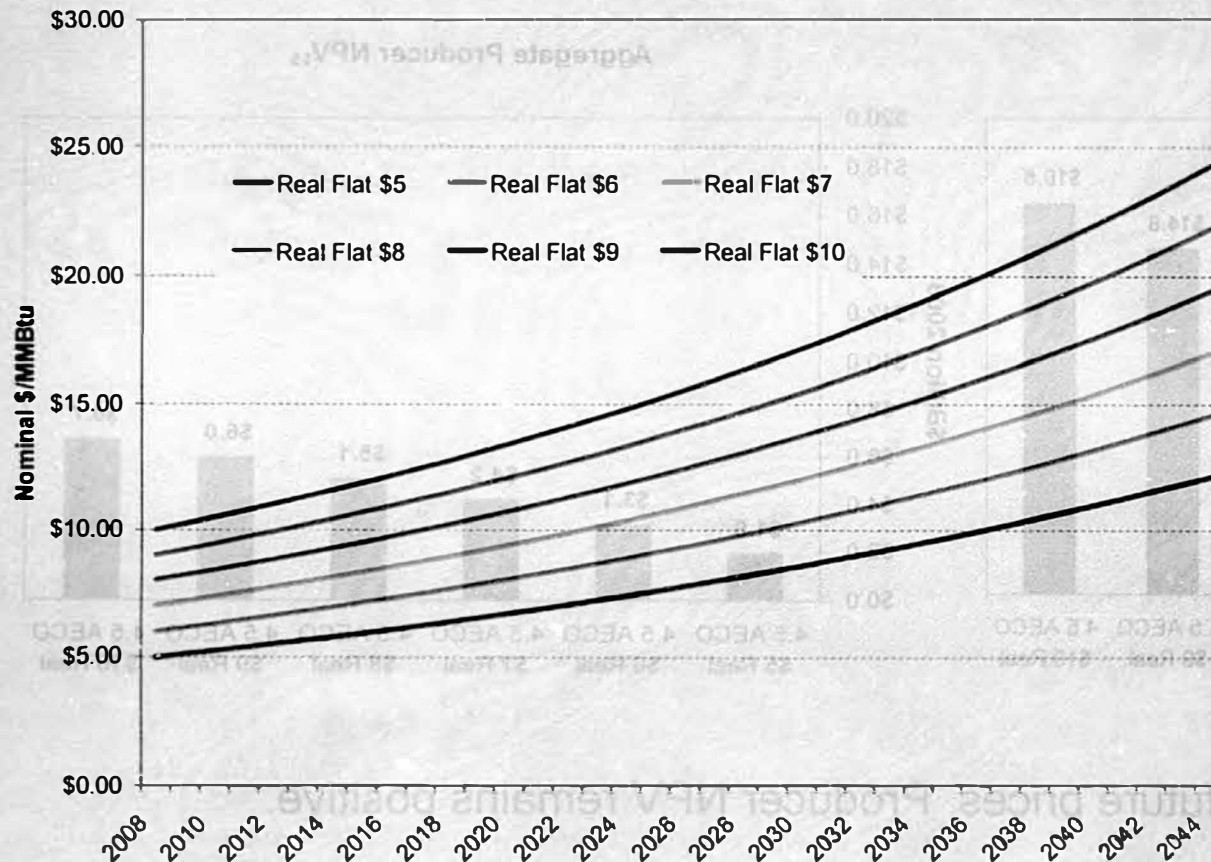
Chance of negative NPV₁₀ is ~ 5%

Results indicate a 5% chance of a negative NPV₁₀ to the Producer for 3.5, 4.0, and 4.5 Bcf/d project volumes.

Results shown are with both Price Uncertainty and TC Schedule / Cost Uncertainty



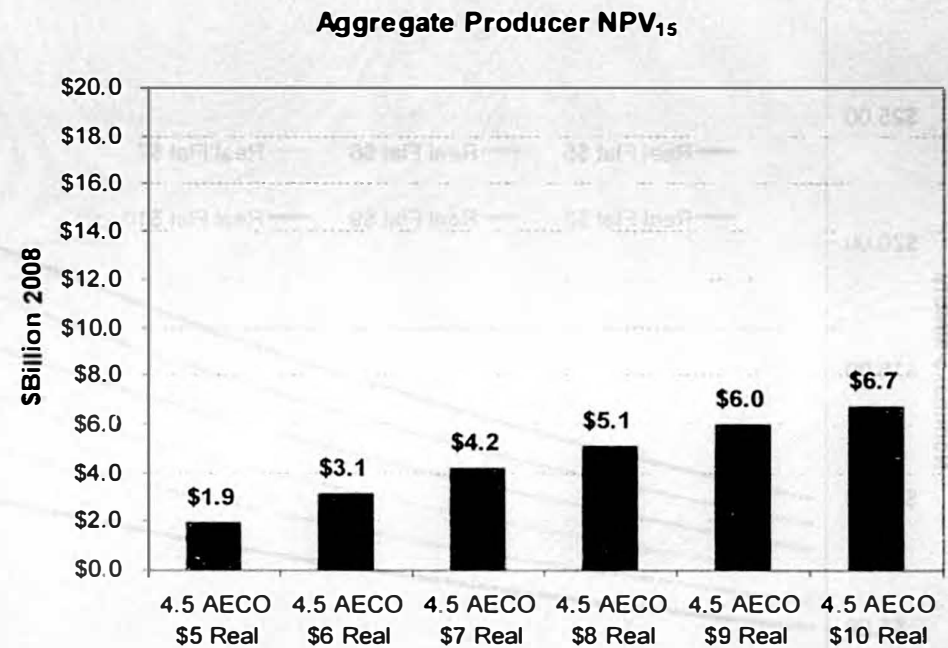
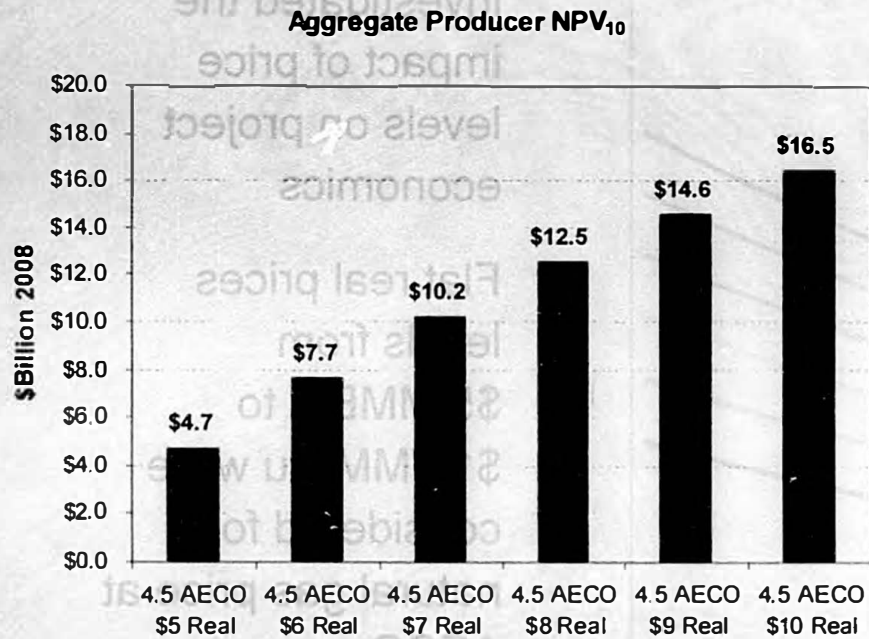
Analysis of Impact of Price Levels - Flat Real Prices



- Analysis investigated the impact of price levels on project economics
- Flat real prices levels from \$5/MMBtu to \$10/MMBtu were considered for natural gas price at AECO
- 2.5% inflation assumed to estimate dollars of the day prices



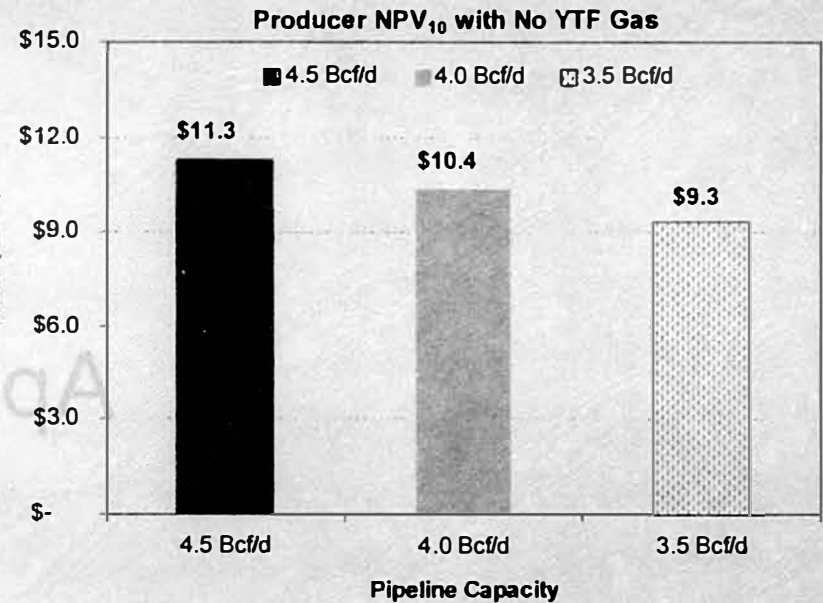
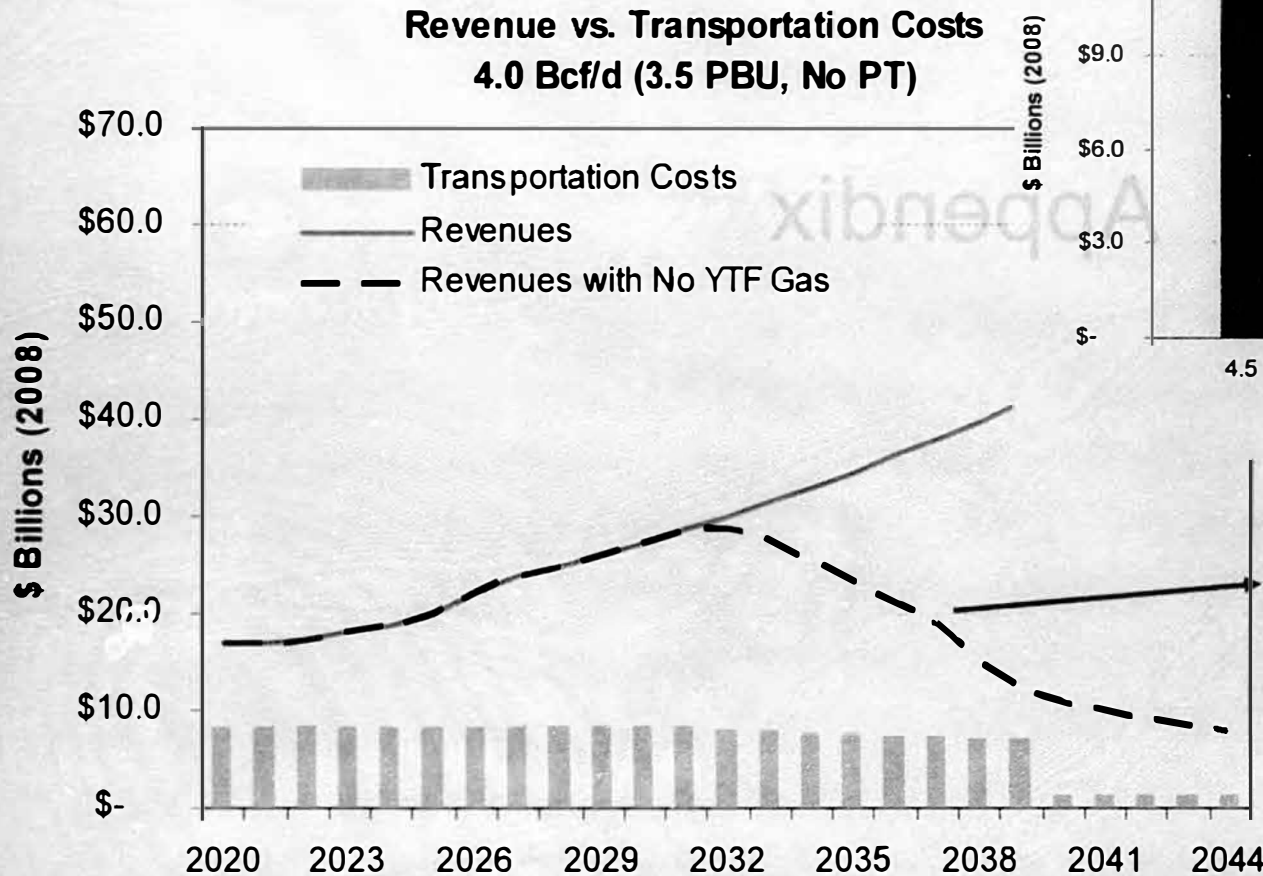
Price levels have a significant impact on Producer NPV. NPV₁₀ remains positive with real prices in \$5-\$10/MMBtu range for the 4.5 Bcf/d case.



Even at very low future prices, Producer NPV remains positive.



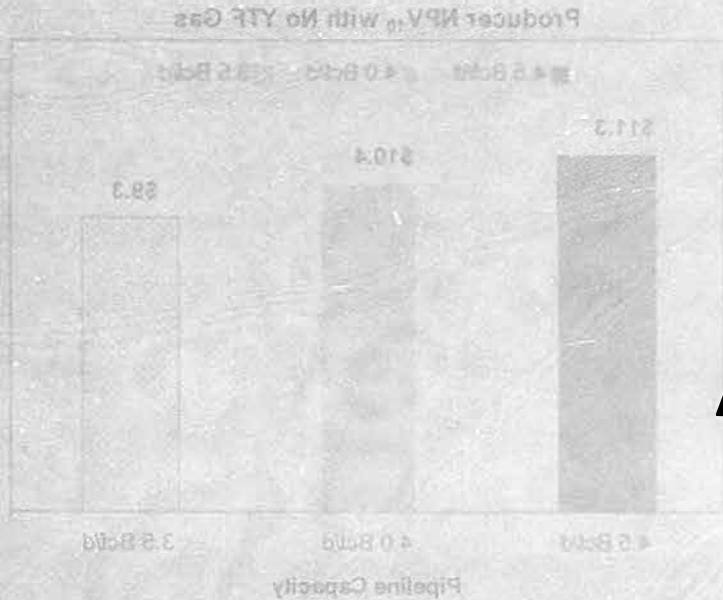
Producer NPV (for 4.0 Bcf/d) is Expected to Remain Positive if No YTF Gas is Produced



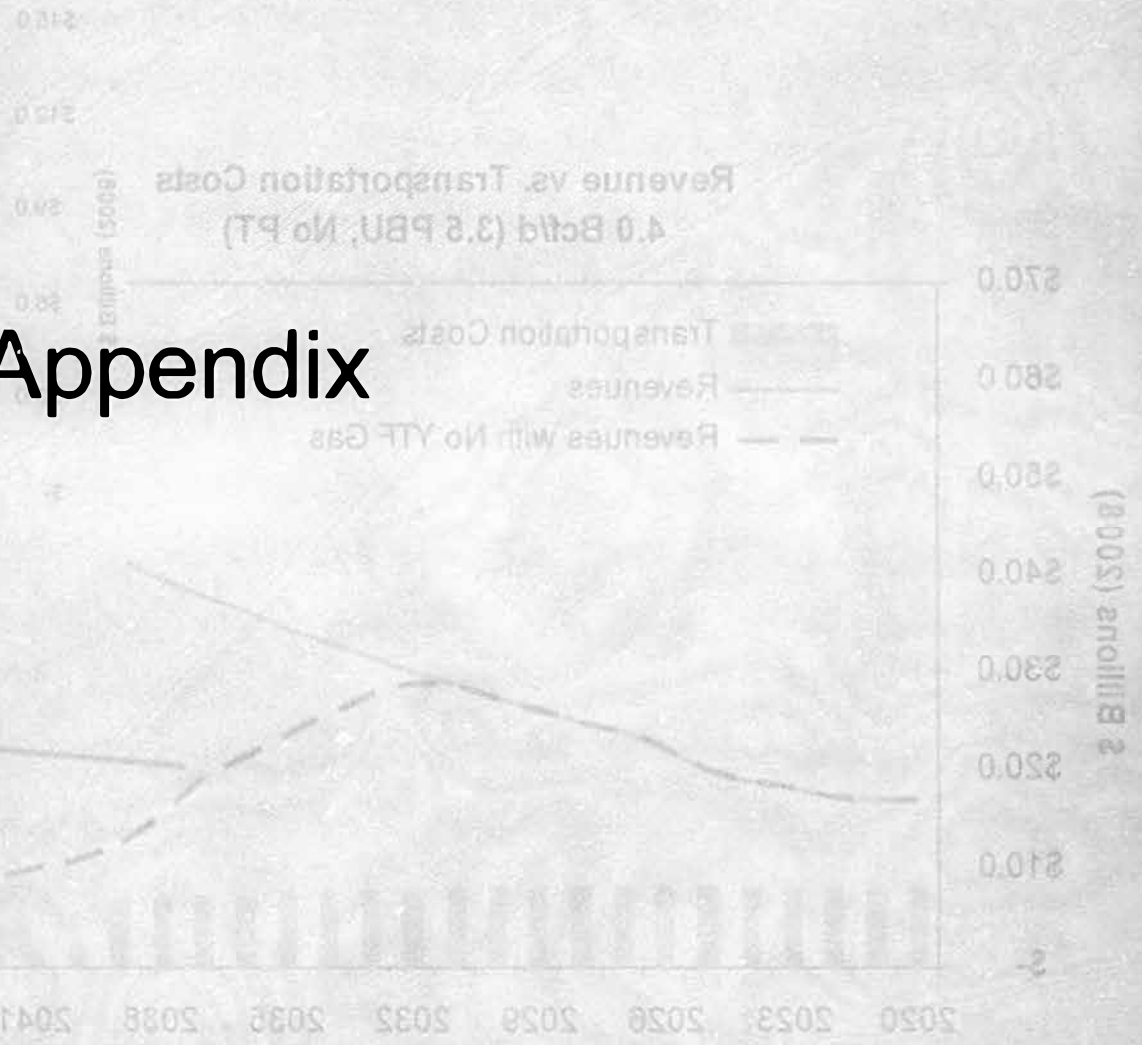
↓
Producer NPV₁₀ is equal to \$10.4 billion with No YTF Gas at 4.0 Bcf/d



Producer NPV (for 4.0 Bcf/d) is Expected to Remain Positive if No YTF Gas is Produced



Appendix



Producer NPV₁₀ is equal to \$10.4 billion with No YTF Gas at 4.0 Bcf/d



Impact of the Gasline: Cash flows and NPV calculated are the difference between oil+gas and oil only operations.

Oil + Gas \$\$

-

Oil Only \$

=

Cash Flows from Gas \$



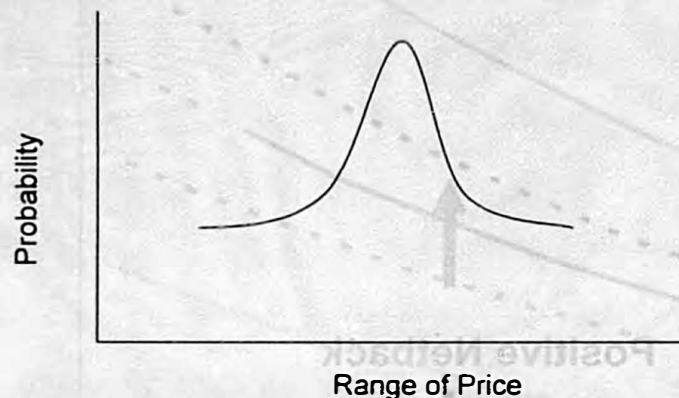
Overview of Natural Gas Price Assumptions Utilized in the NPV Analysis

- Gas delivered to different locations has different prices: Henry Hub vs. AECO
- Prices dependent on the supply/demand balance and pipeline infrastructure
- Forecasts are required to evaluate the project from 2020 to 2045+
- Relied on range of forecasts
 - EIA
 - Wood Mackenzie
 - B&V
 - Others
- Wood Mackenzie is the base case for analysis
 - Independent market assessment
 - Projects an AECO price



Understanding the Factors that Lead to Future Prices

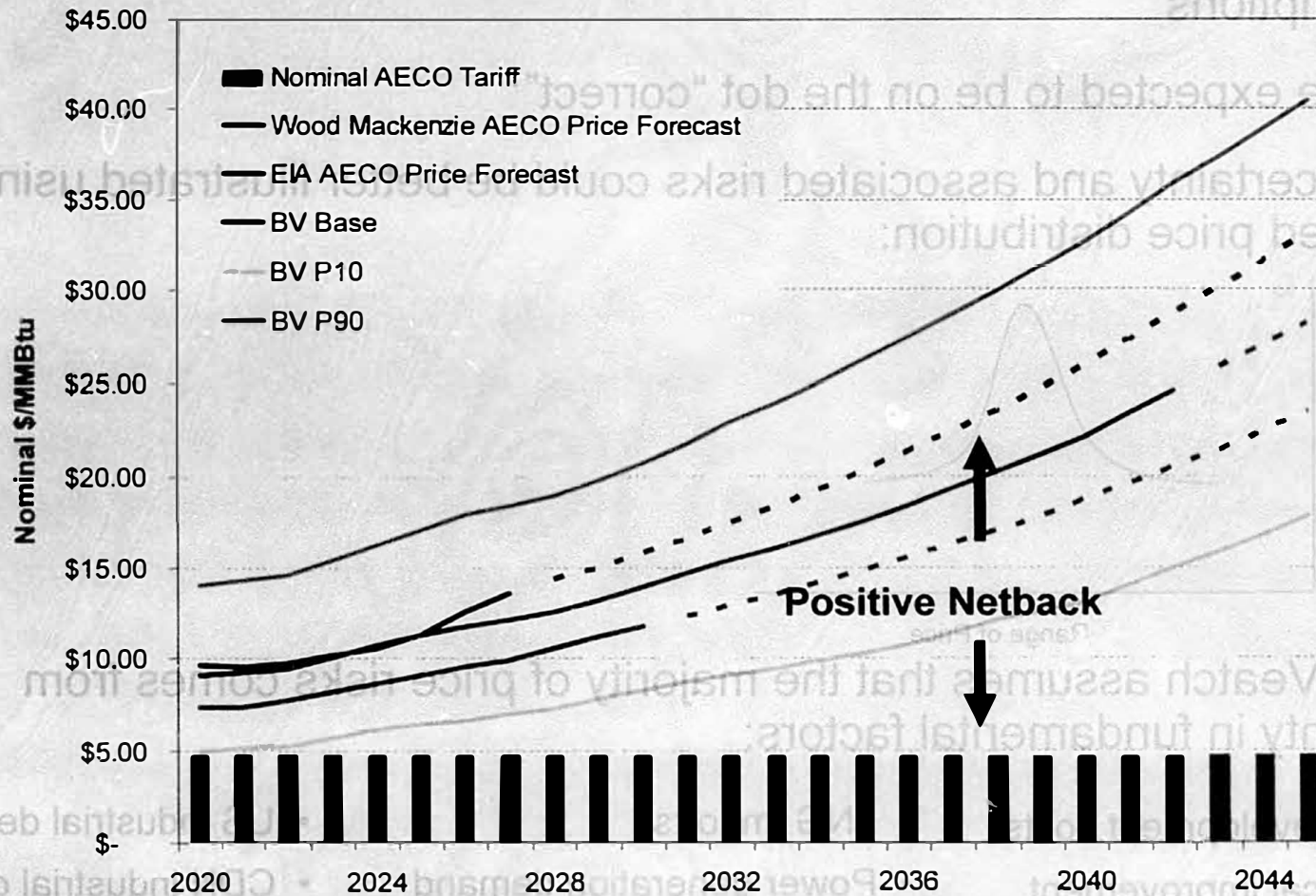
- Forecasted prices are “point” estimates, all dependent on a specific set of assumptions
- None are expected to be on the dot “correct”
- Price uncertainty and associated risks could be better illustrated using a forecasted price distribution:



- Black & Veatch assumes that the majority of price risks comes from uncertainty in fundamental factors:
 - Finding & development costs
 - Technological improvement
 - LNG imports
 - Power generation demand
 - US industrial demand
 - CDN industrial demand

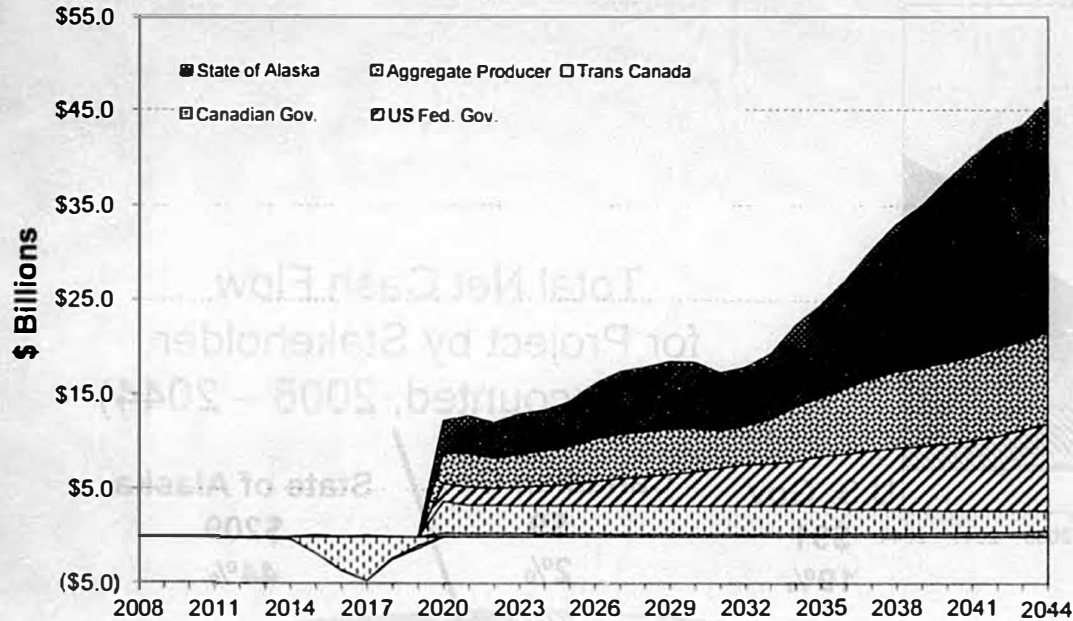


Positive Netbacks Are Expected Under All Price Forecasts

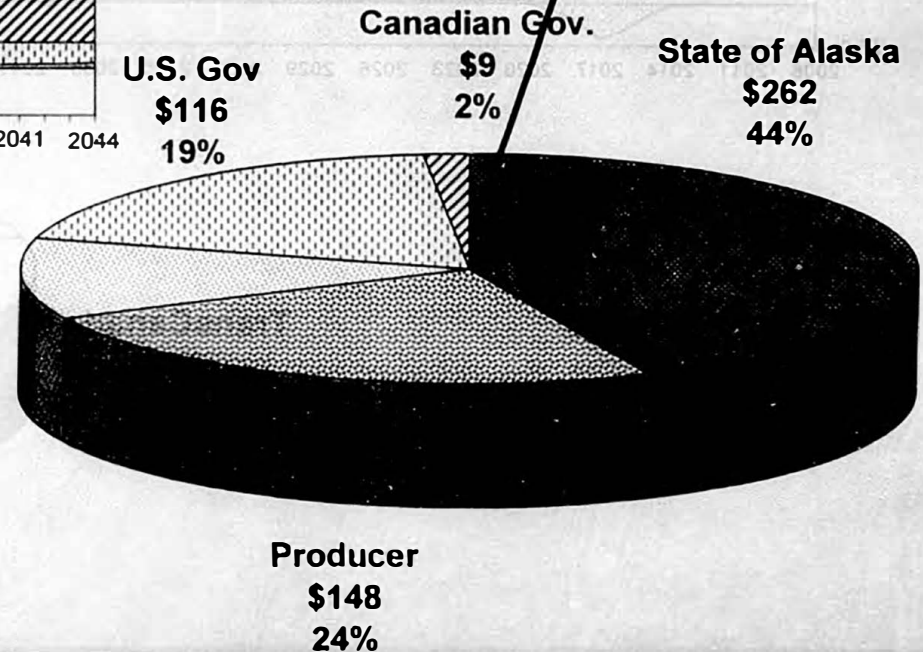


Cash flows to from 4.5 Bcf/d Proposal Base Case

Cash Flows to Stakeholders

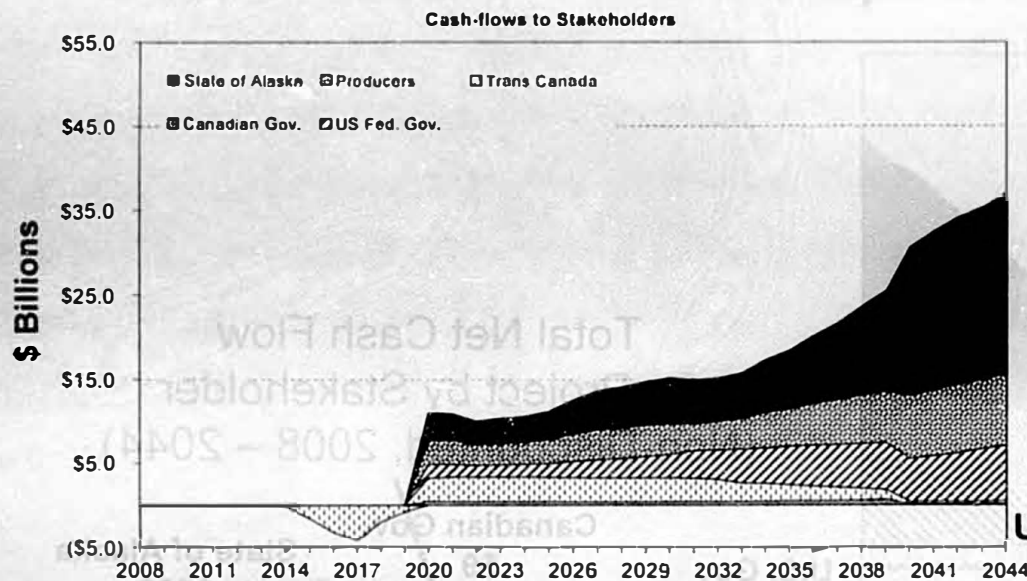


Total Net Cash Flow
for Project by Stakeholder
(Non-Discounted, 2008 – 2044)



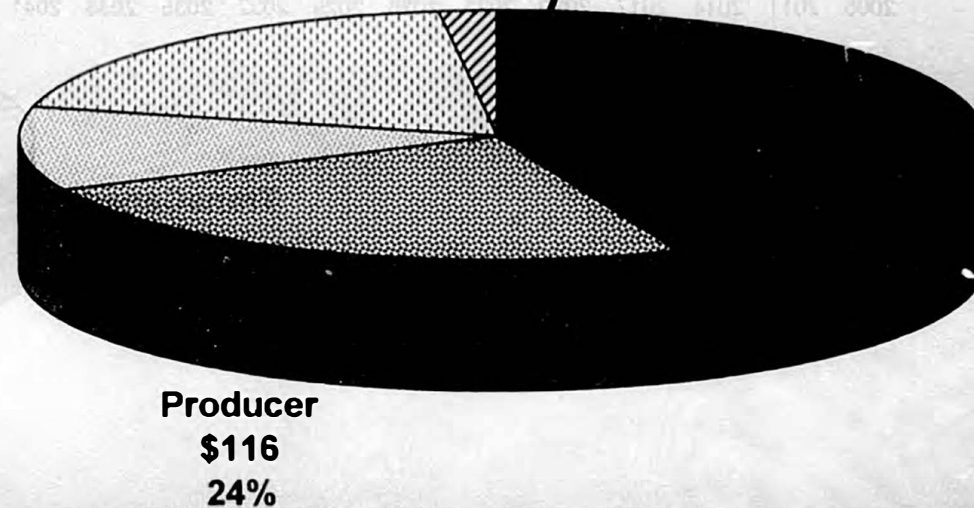
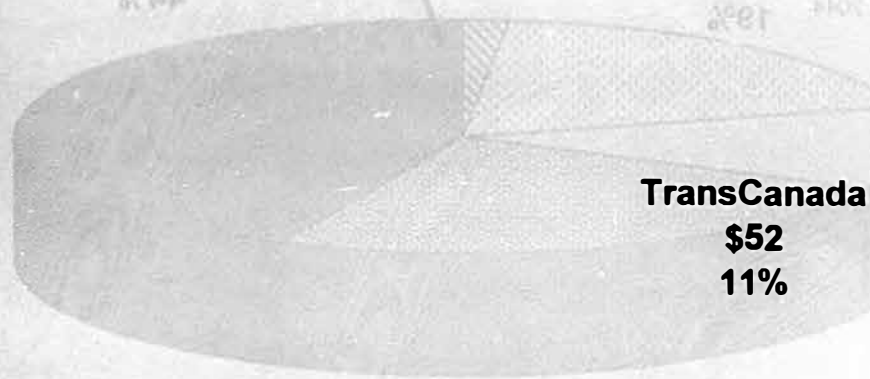


3.5 Bcf/d Low Volume Sensitivity Case



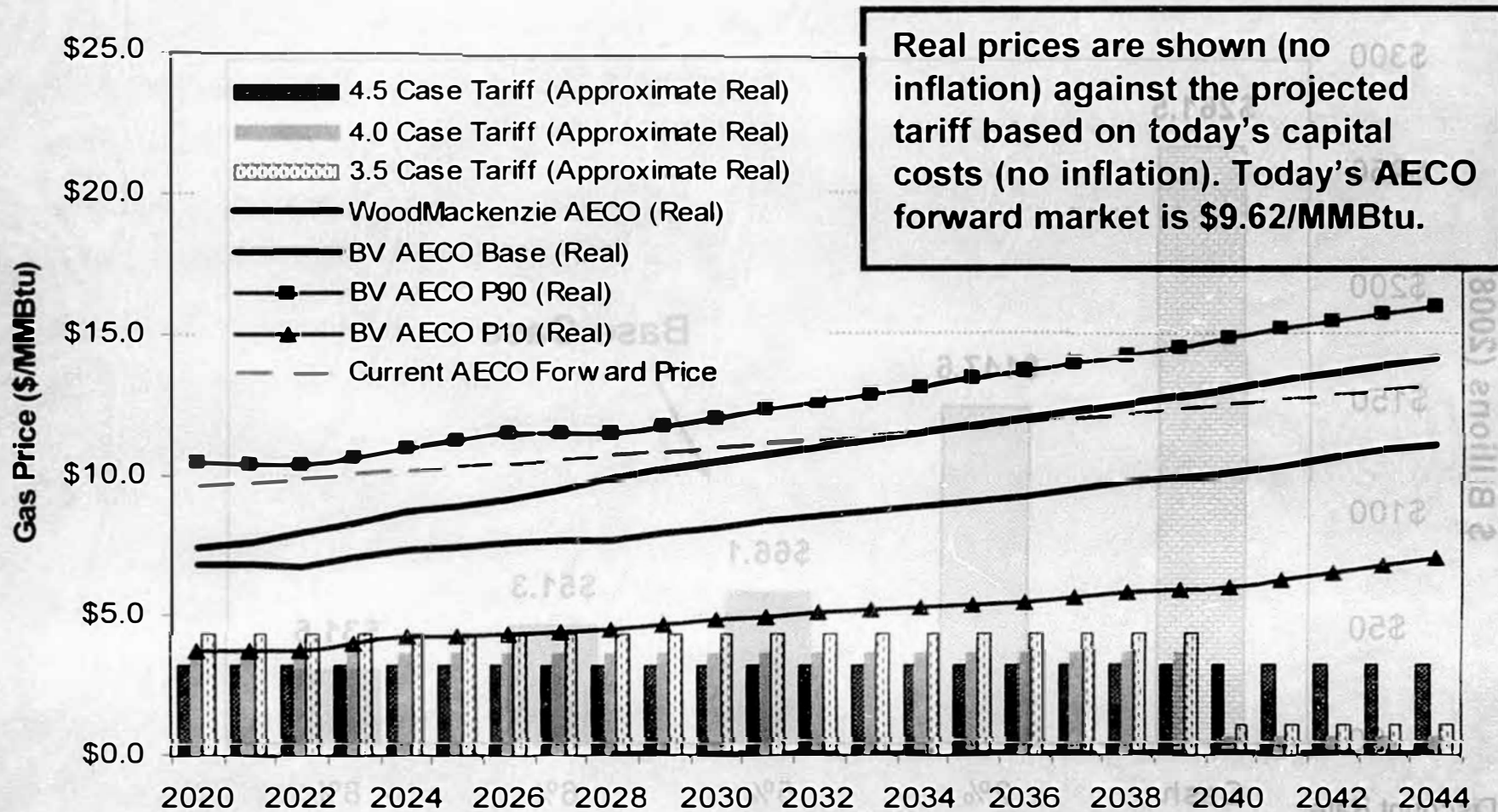
Total Net Cash Flow for Project by Stakeholder (Non-Discounted, 2008 – 2044)

U.S. Gov	Canadian Gov.	State of Alaska
\$91	\$9	\$209
19%	2%	44%



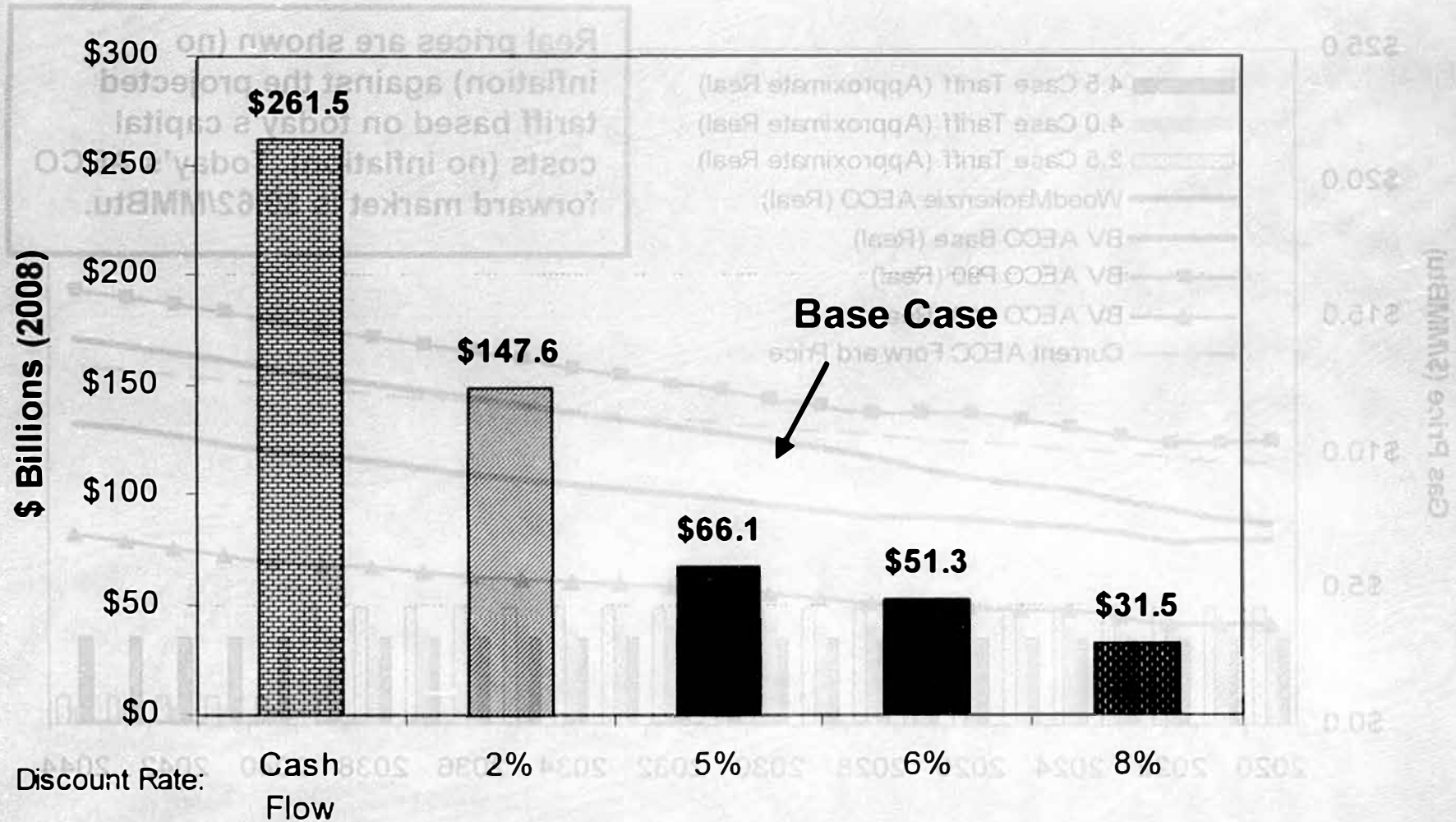


Project Cash Flows are Favorable if Built Today



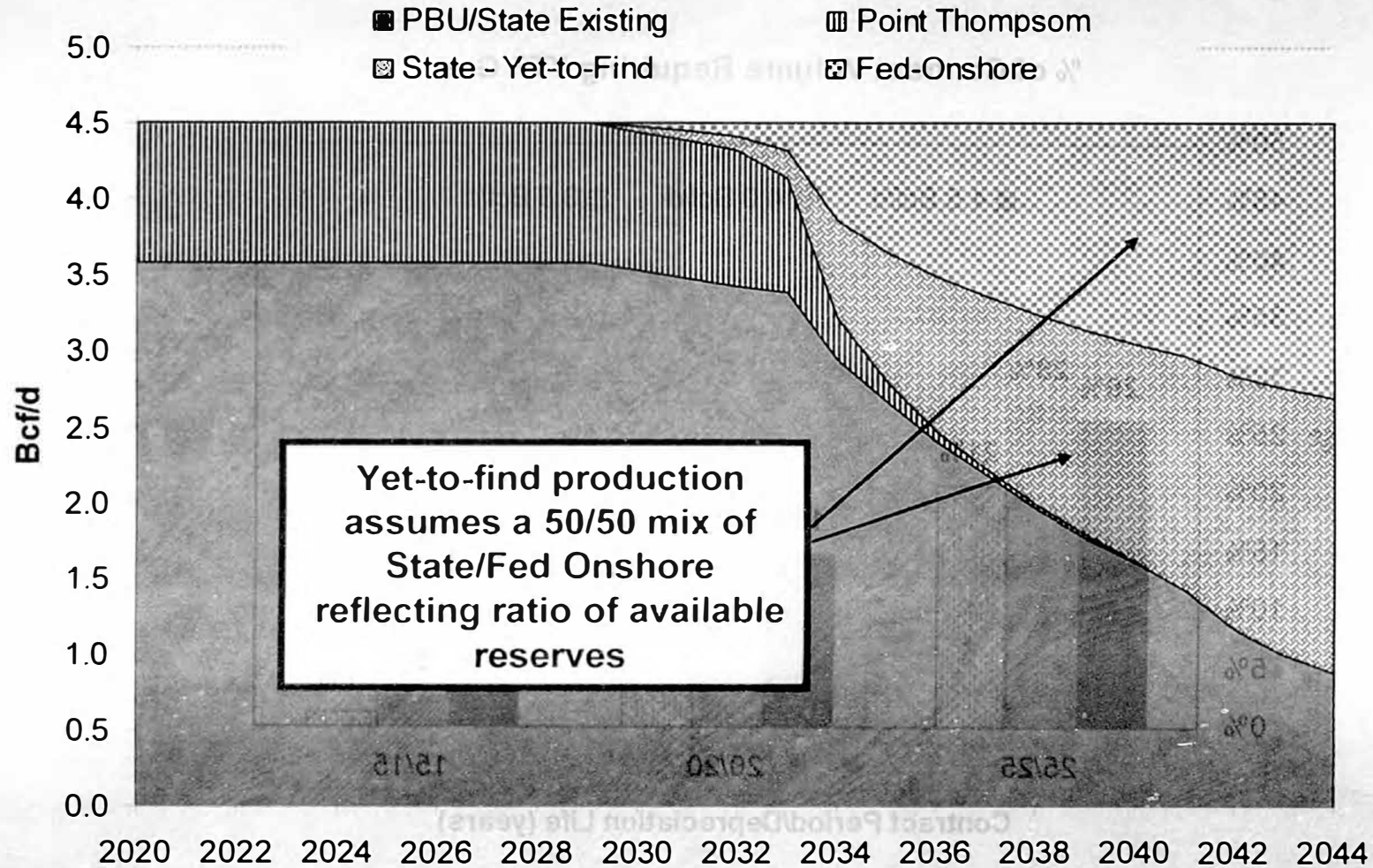


Expected State of Alaska NPV₅ is \$66.1 billion





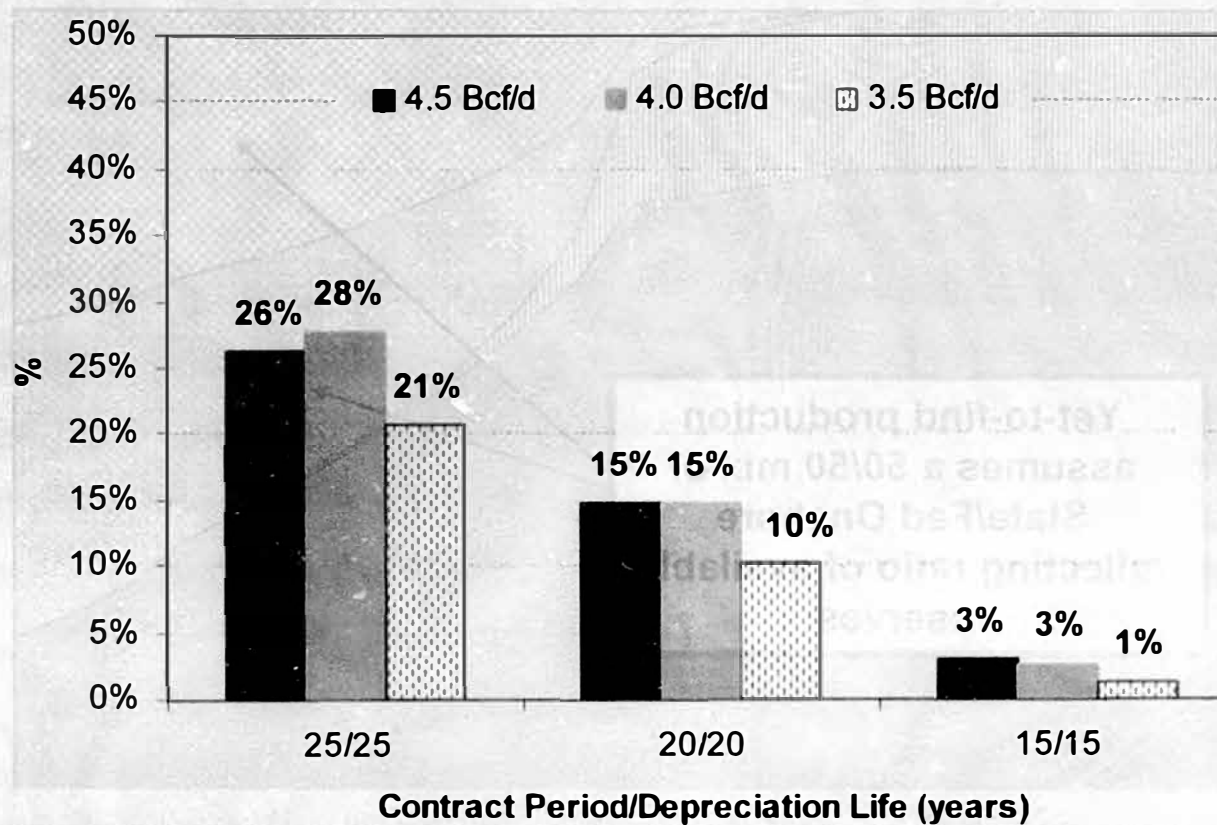
Production Assumptions: 4.5 Bcf/d Proposal Base Case





YTF Gas Required to Keep Pipeline Full under Different Contract Periods and for Different Pipeline Capacities

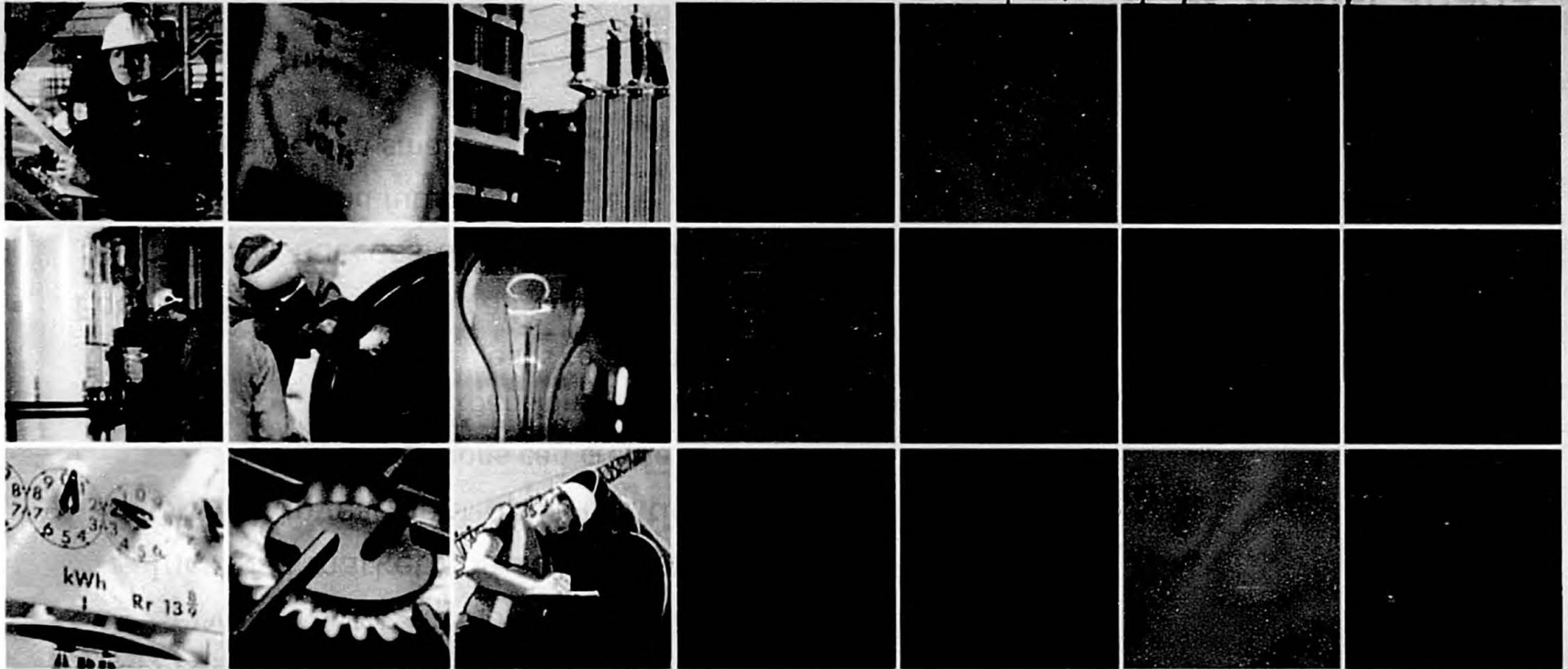
% of Contract Volume Requiring YTF Gas



Why does a delay increase State NPV₅?

- Why does a delay increase State NPV₅?
 - Prices increase
 - Progressivity for production taxes increases as prices rise
 - Production Tax in 2020 = ~25%
 - Production Tax in 2045 = ~50%
- Could a delay cause a decrease in the State NPV₅?
 - Yes, if prices increase at a lower rate than the baseline Wood Mackenzie prices, then a project delay would cause a decrease in the State NPV₅

Anch AK
Howard Johnson Plaza presented
6-19-2008
by Tony Palmer



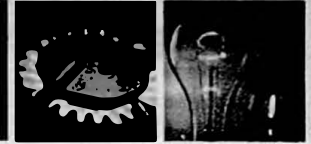
TransCanada's AGIA Application Statewide Legislative Hearings

June / July 2008



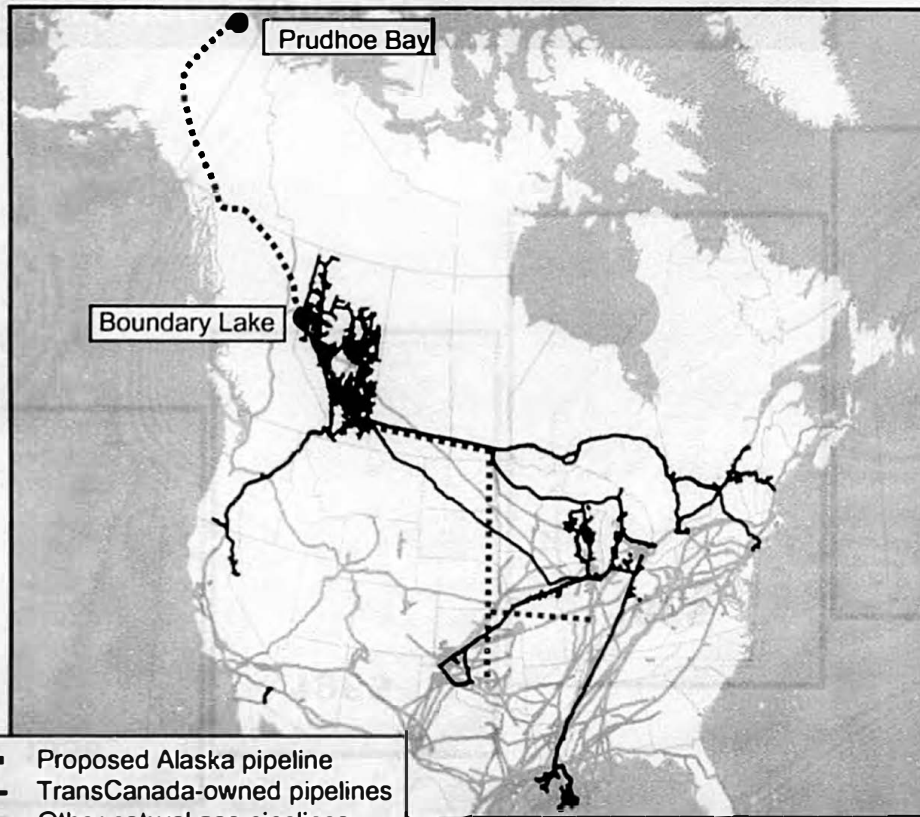
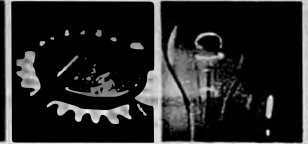
TransCanada
In business to deliver

TransCanada's Objectives – Alaska Project



- Early in-service
 - Largest investment opportunity in core business line and geographic footprint
 - Utilize spare capacity on existing North American pipelines
 - LNG market as alternative investment opportunity
- Encourage long-run basin development
 - Serve In-State and other markets
 - Increase market and supply diversity
 - Growth investment opportunities
 - Pipeline expansions can create “virtuous circle”
 - Pipeline expansions promote more exploration and drilling which, if successful, leads to more pipeline expansions
- Equitable treatment for all customers
 - 50-year successful track record of balancing interests
 - Initial and future
 - Large and small

TransCanada's Credentials

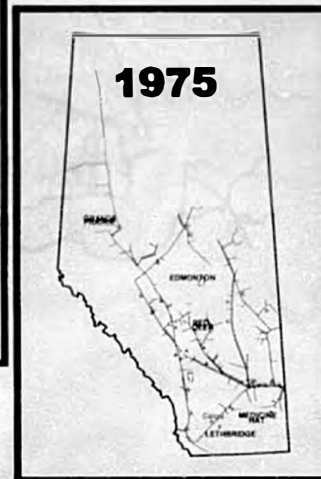


- Proposed Alaska pipeline
- TransCanada-owned pipelines
- Other natural gas pipelines
- - - - - Keystone pipeline

	TransCanada Total	Alaska Pipeline Project
Miles of Pipe • in U.S.	36,500 • 12,000	1,715 • 750 in Alaska
Compression Horsepower	5,370,000	750,000 • 265,000 in Alaska
Throughput Volumes	15 bcf/d	4.5 bcf/d

<u>1957/58</u> TransCanada's Mainline	Original build across Canada 2,300 miles
<u>1990s</u> Expansion	7,000 miles Completed within 0.6% of budget and on schedule
<u>2008 - 2009</u> Keystone Pipe	2,150 miles New build in U.S. - 1,380 miles

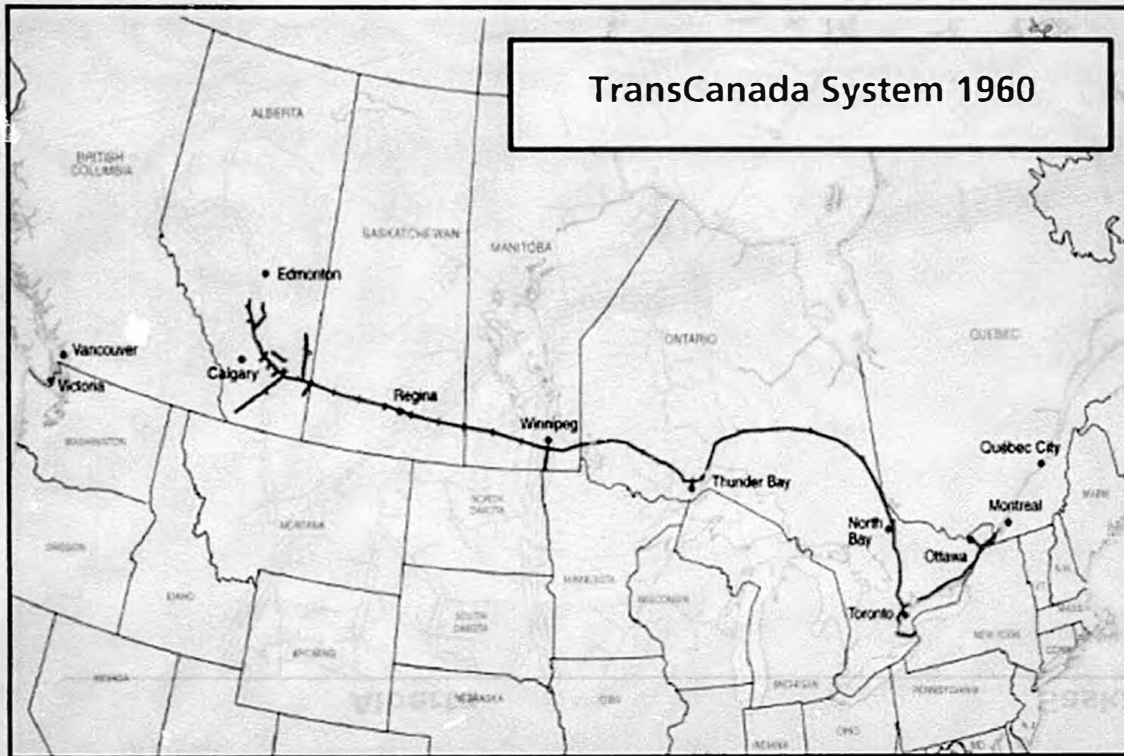
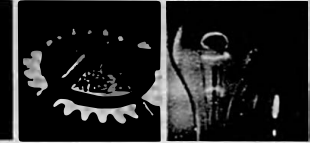
Proven Basin Developer – Alberta Example



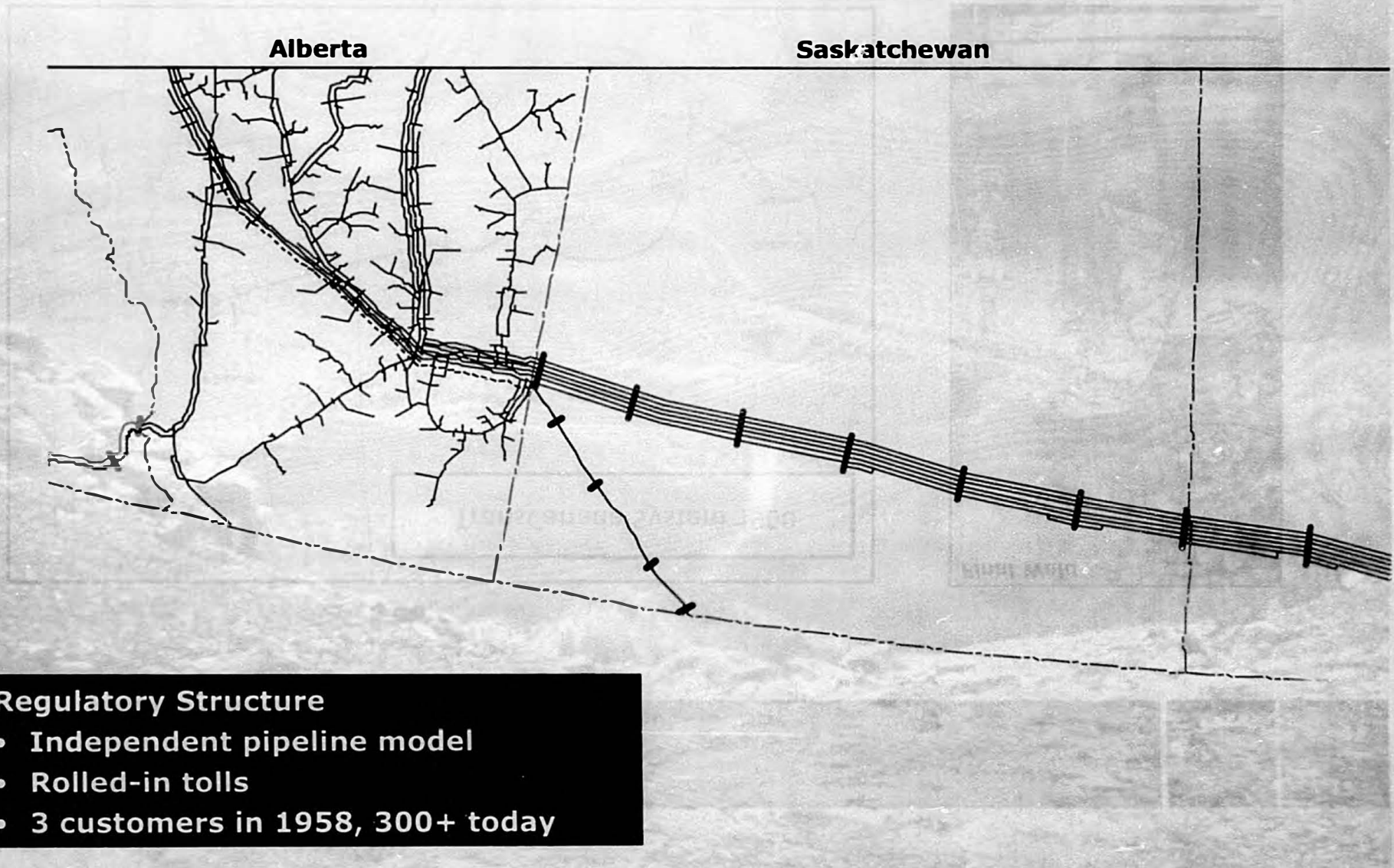
Regulatory Structure

- Independent pipeline model
- Rolled-in tolls
- 3 customers in 1958, 300+ today

Proven Basin Developer – Mainline Example 1960



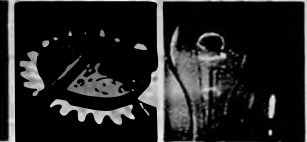
Proven Basin Developer – Mainline Example 2008



Regulatory Structure

- Independent pipeline model
- Rolled-in tolls
- 3 customers in 1958, 300+ today

AGIA "Must Haves"



AGIA "Must Haves"	TransCanada's Application	Completeness
1. Filed by deadline	Filed on November 30, 2007	✓
2. Project details & schedule	Alaska Highway route 5 bcf/d GTP and 48" 2500/2600 psi pipe 2017 November in-service*	✓
3. Open season date certain Apply for FERC pre-filing Apply for FERC CPCN	Completed by Sept. 2009* June 2010* - not contingent on Open Season December 2011* - as above	✓
4. RCA filing	N/A	N/A
5. Open season frequency	Once every 2 years	✓
6. Expansions - Commitment to expand in engineering increments	Yes, 4.5 bcf/d initial design capacity Expandable to 5.9 bcf/d with compression only	✓
7. Rolled-in tolls	Up to 115% of initial rates in Alaska Full rolled-in rates in Canada	✓
8. Gas treatment plant	TransCanada will build if 3 rd parties do not	✓
9. State reimbursement	Up to \$500 million	✓

* Subject to AGIA license by April 2008

AGIA "Must Haves"



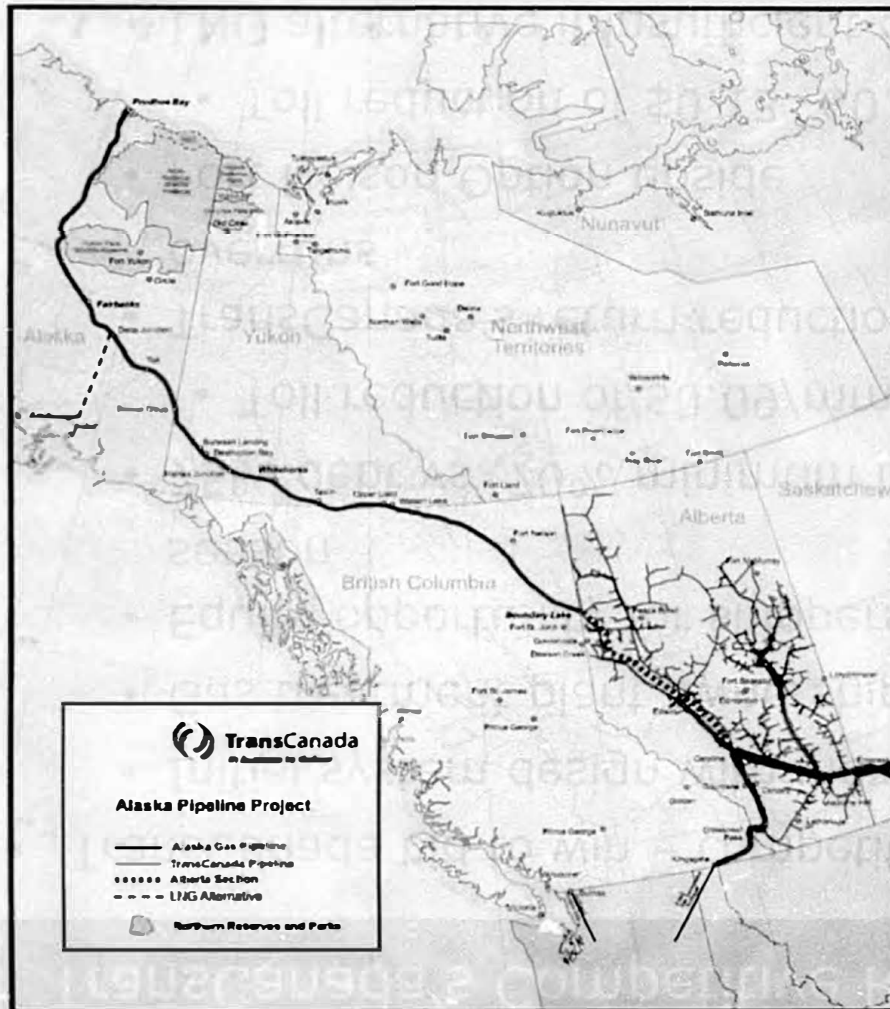
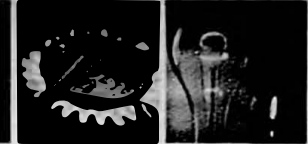
AGIA "Must Haves"	TransCanada's Application	Completeness
10. Project debt ratio minimum	Construction - 70% Operation - 75% (to reduce tolls)	✓
11. Capital cost overrun measures	TransCanada's return reduction (penalty) Potential \$18 B loan guarantee (stable tolls)	✓
12. In-state deliveries	Min. 5 delivery points	✓
13. In-state delivery rates	Distance sensitive rates	✓
14. Local headquarters in Alaska	Yes	✓
15. Local hire, local businesses, etc.	Opportunities for local hire and businesses	✓
16. Waive right to appeal	Waived	✓
17. Project labor agreement	Commit to negotiate PLA	✓
18. Treatment of State reimbursement	Excluded from rate base	✓
19. Details of Applicant	Provided	✓
20. Readiness, financial resources and technical ability of Applicant	Proven record and demonstrated capability	✓

TransCanada's Competitive Response to AGIA



- TransCanada bid to win – competitive enhancements
 - Initial system design with inexpensive expandability
 - Gas treatment plant ownership, if no 3rd party willing to build
 - Equity opportunity for shippers committing gas in initial open season
 - 75% debt vs. 70% minimum limit in AGIA
 - Toll reduction of \$0.09/mmbtu
 - TransCanada's return reduction in event of capital cost overruns
 - Fort Nelson Option upside
 - Toll reduction of \$0.13 - \$0.18/mmbtu
 - LNG alternative if insufficient gas commitments through Canada , or via Y-line

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

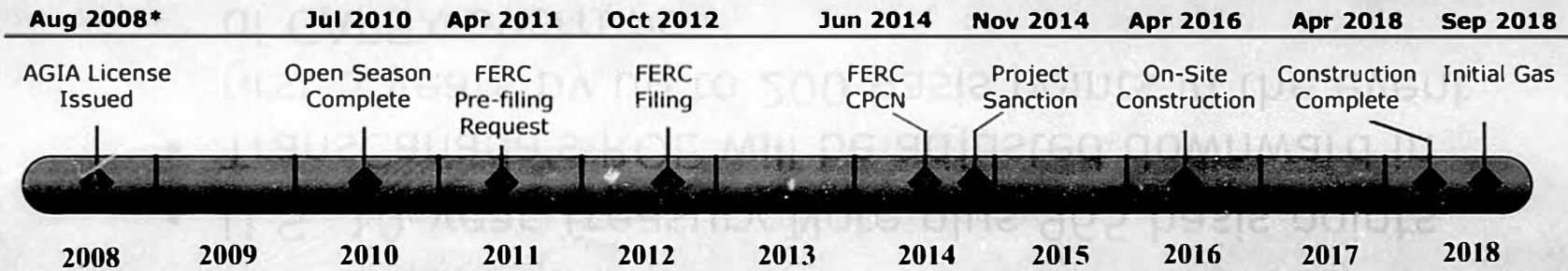
¹ Based on information provided by the State and current TransCanada estimates

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



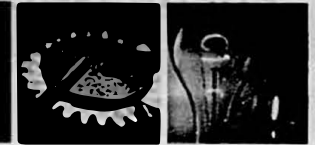
- TransCanada will offer equity opportunity to Shippers in the initial Open Season that subscribe for a threshold volume
 - Should improve likelihood of success and alignment of interests between project sponsors and Shippers

Upstream Fiscal Terms



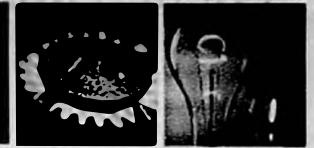
- TransCanada's AGIA obligations are not conditional on a review of Alaska's upstream fiscal terms.
- TransCanada acknowledges that this issue is between the State and natural gas producers.
 - TransCanada requests that the State review upstream fiscal terms for natural gas prior to the initial open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

Value of Potential Expansions (\$Billions)¹

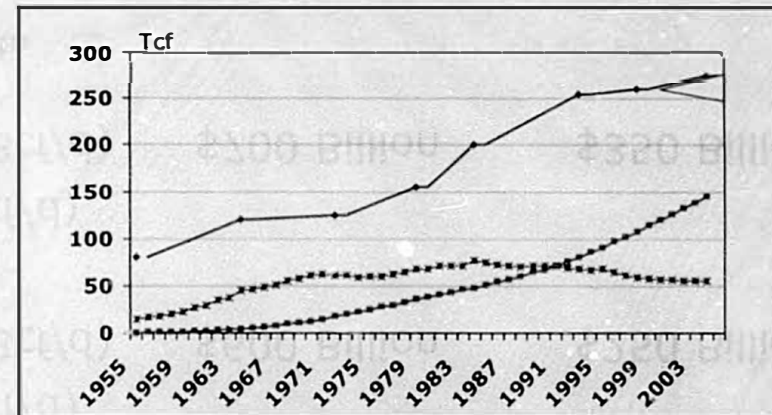
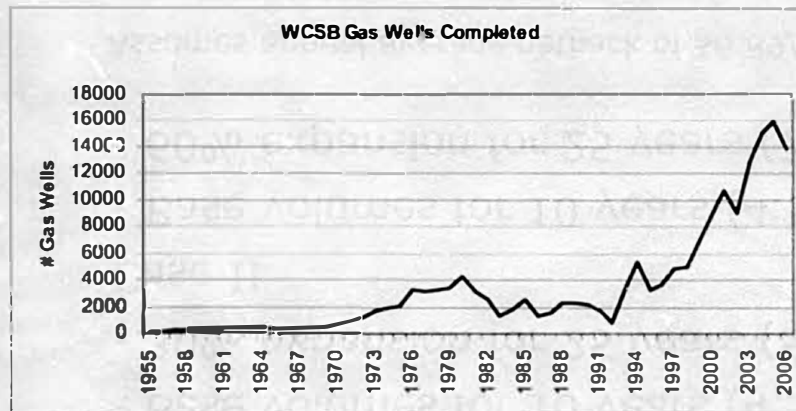
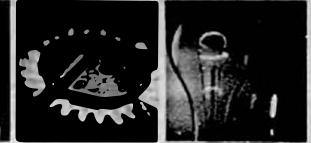


	<u>Producer/Govts. Total Revenue *</u>	<u>Expansion Value</u>
Base Project		
- 25 years @ 4.5 Bcfd	\$350 Billion	
Expansions		
Case I		
- Base volumes for 10 years (4.5 Bcf/d)		
- 30% expansion for 25 years (5.9 Bcf/d)	\$600 Billion	\$250 Billion
Case II		
- Base volumes for 10 years (4.5 Bcf/d)		
-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

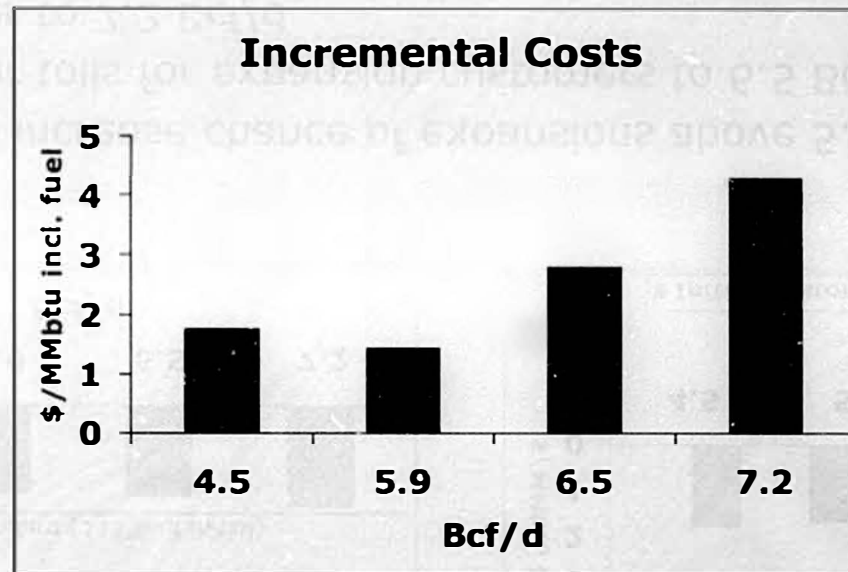
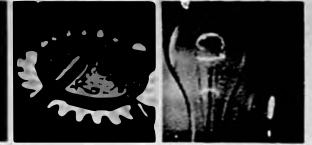
Basin Development – Western Canada Example



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

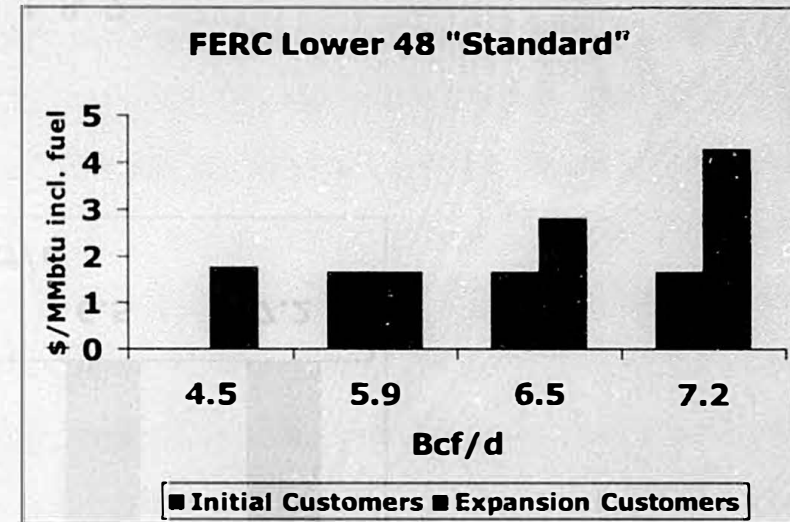
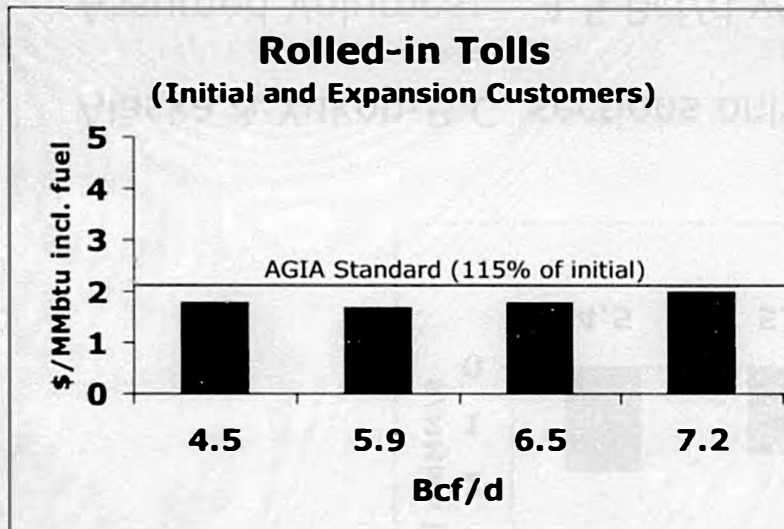
Impact of Rolled-in Tolls?



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?

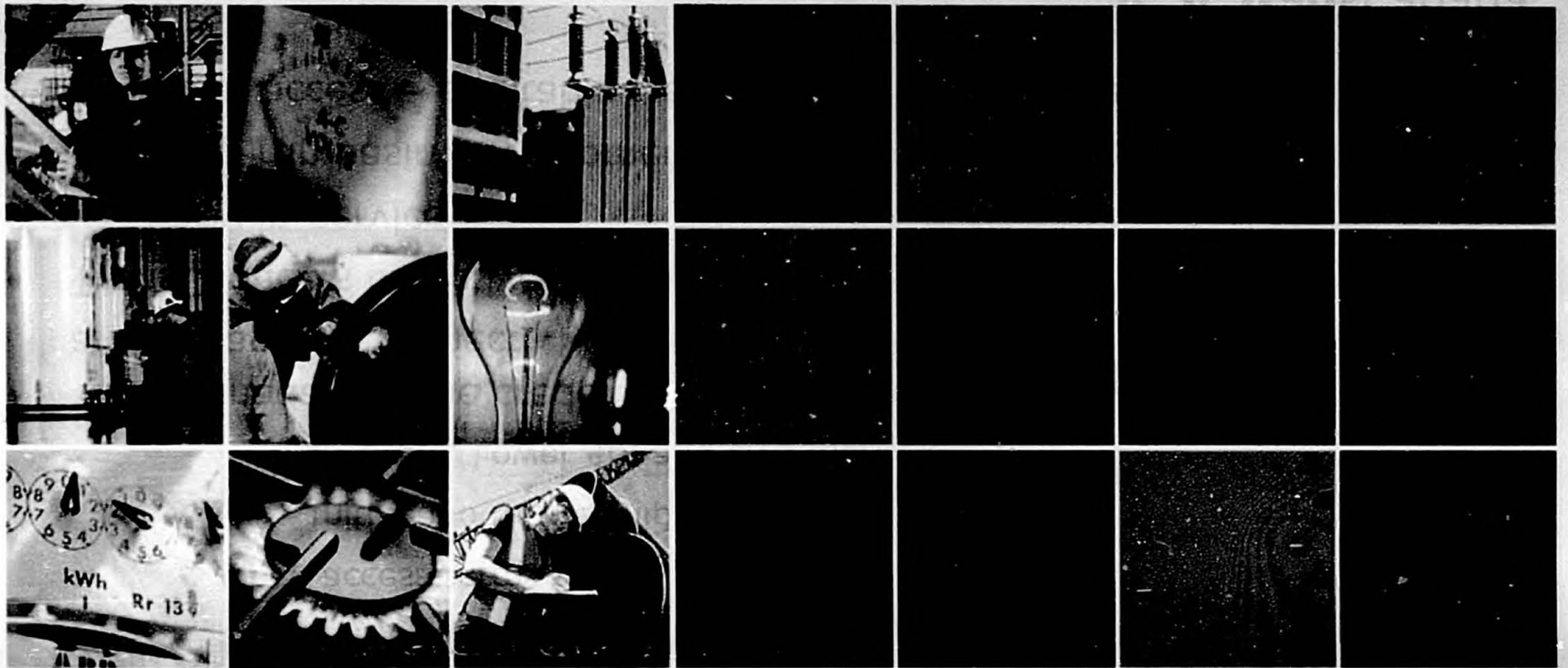


- Rolled-in tolls increase chance of expansions above 5.9 Bcf/d
 - 35% lower tolls for expansion customers to 6.5 Bcf/d
 - 50% lower to 7.2 Bcf/d

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



Thank You



TransCanada

In business to deliver

*not presented
time ran out*

AGIA

Summary of the Commissioners' Findings and Determination

Special Session
June 19, 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

AGIA

The Alaska Gasline Inducement Act

- 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

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
- Jobs and long-term careers
 - True “open access” for explorers
- Opportunity for affordable energy for Alaskans
 - Expansion Provisions
 - Off-Take 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
 - 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

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

AGIA

The Alaska Gasline Inducement Act

- 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
 - Gas Prices
 - Transportation Costs
 - Pipe line Project Capital Costs
 - Cost Escalation Rates
 - Initial Pipe line 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 Mac kenzie
 - Gas Stra tegies Consulting
 - Bla ck and Veatch

Project Economic Analysis



- Project Cost and Schedule
 - “Technical Team”, included
 - Weston 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

Project Economic Analysis



Reporting NPV Results – Proposal Base Case

- Gas Prices (WoodMac)
- Transportation Costs
 - Pipe line Project Capital Costs (\$31.5 billion)
 - Cost Escalation Rates (4%)
 - Initial Pipe line 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%.

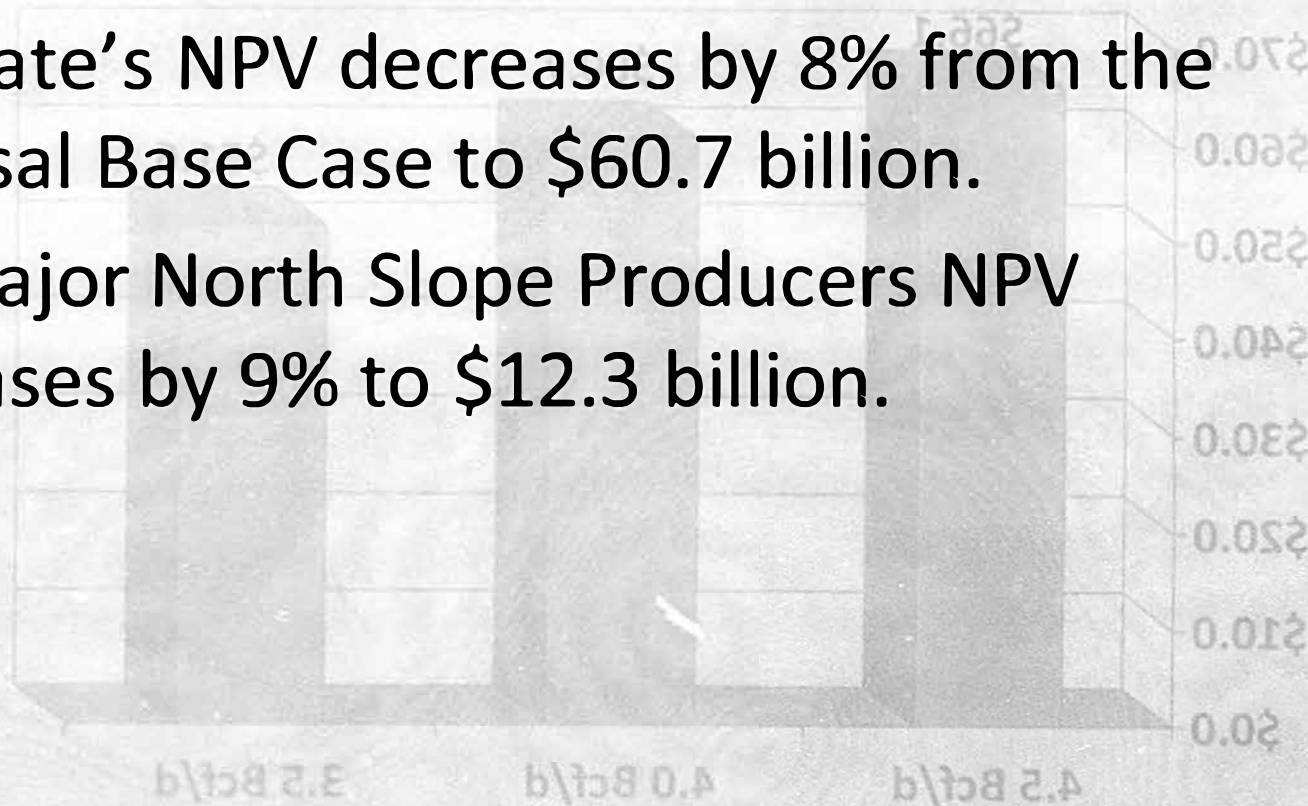
Project Economic Analysis

AGIA

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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.

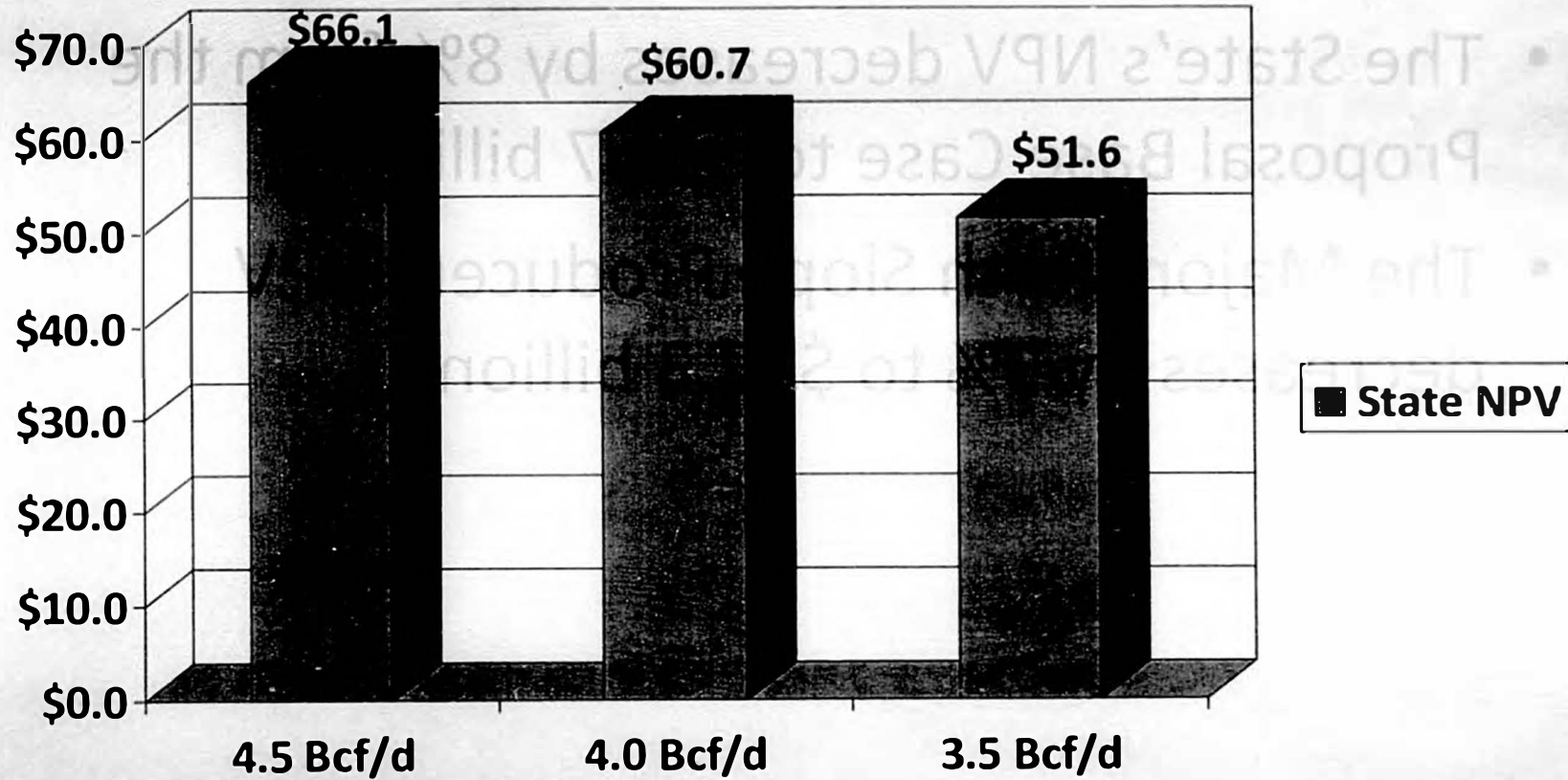


Project Economic Analysis

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State NPV at Various Initial Throughput



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



The Alaska Gasline Inducement Act

- 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



The Alaska Gasline Inducement Act

- 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

TC Alaska Project Is Likely to Succeed



Contingent Liability Issue

- 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



Contingent Liability Issue

- Producer Project (Denali)
- LNG Options

Denali Project Is More Risky For the State



- 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

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



The Alaska Gasline Inducement Act

- 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



The Alaska Gasline Inducement Act

- Treble Damages Exposure
- Competition

Year	Annual Spend	State Expenditure	TC Alaska Expenditure	Cumulative Expenditure
2008	\$41	\$21	\$21	\$21
2009*	\$42	\$21	\$21	\$42
2009	\$34	\$21	\$34	\$76
2010	\$141	\$127	\$141	\$217
2011	\$144	\$130	\$144	\$361
2012	\$147	\$132	\$147	\$508
2013	\$72	\$39	\$72	\$580
Total	\$625	\$500	\$625	\$580

*Scheduled Open Season

Expenditure Schedule Based on TC Alaska Application

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

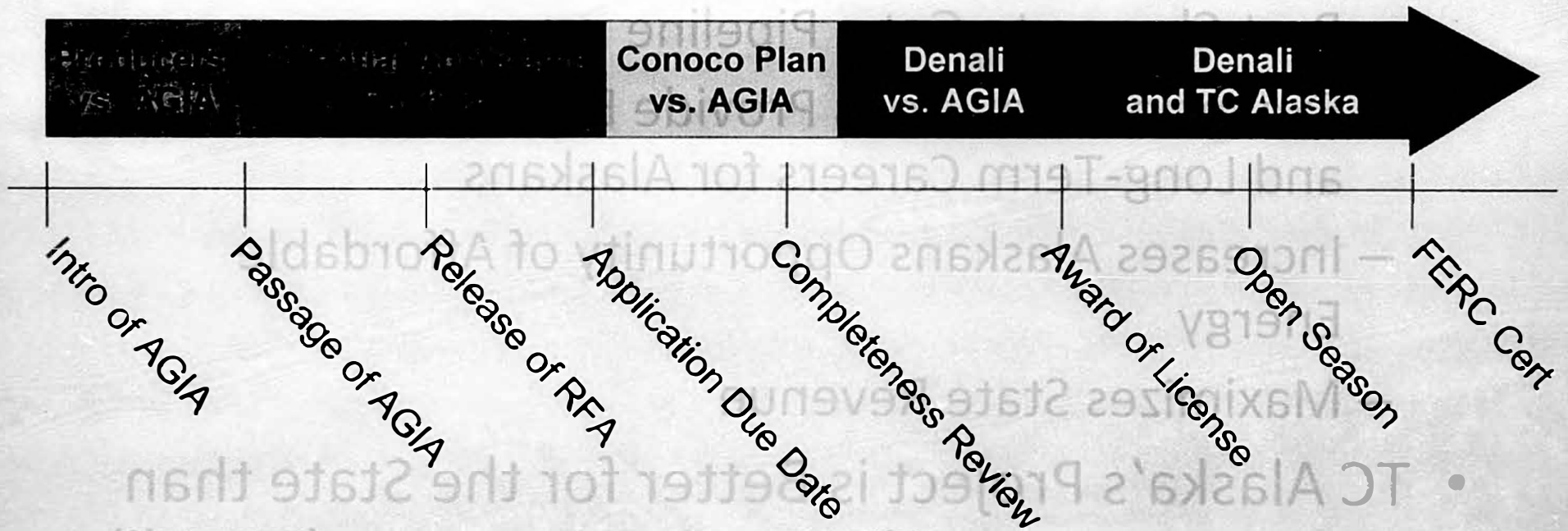
*Scheduled Open Season

Expenditure Schedule Based on TC Alaska Application

Competition

AGIA

The Alaska Gasline Inducement Act



Summary

AGIA

The Alaska Gasline Inducement Act

- 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)