

AK LEGISLATURE SPECIAL COMMITTEE FILES SCOMM 155 3303

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



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%.

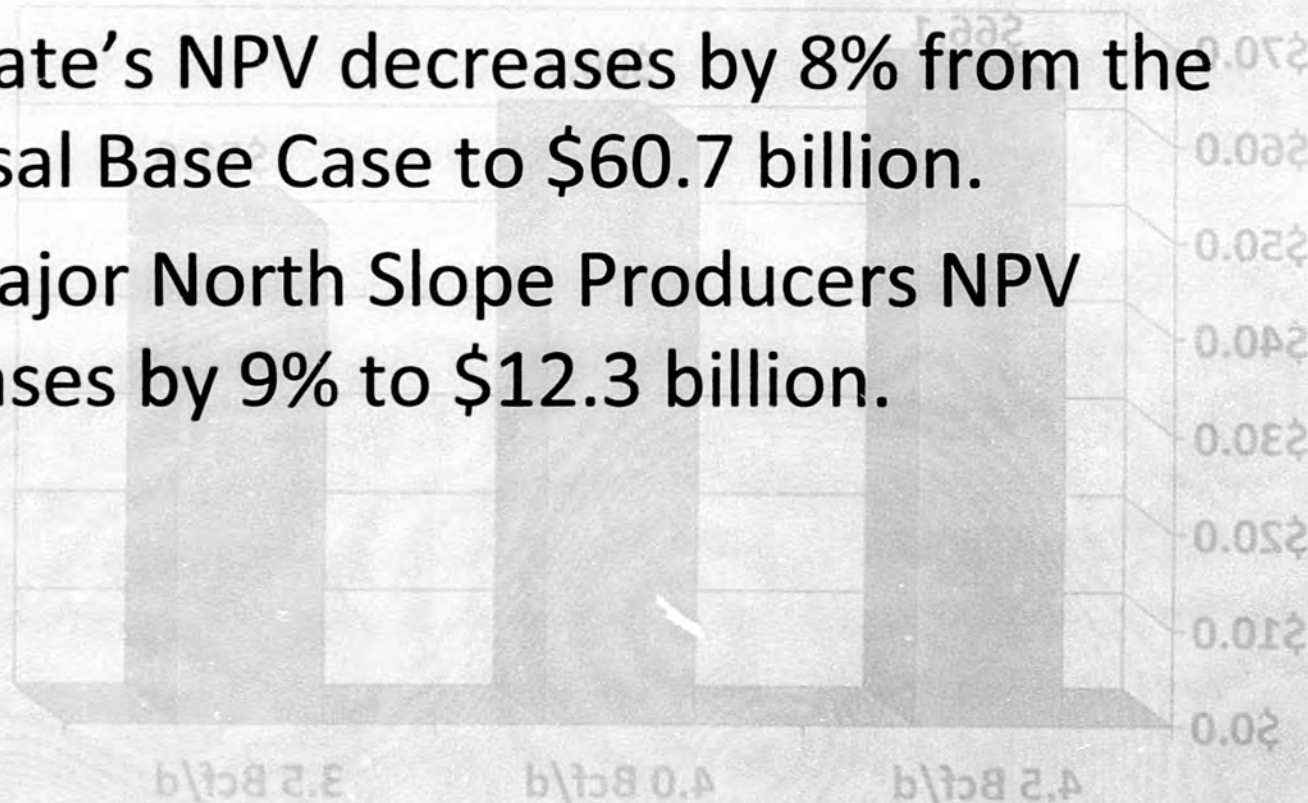
Project Economic Analysis



The Alaska Gasline Inducement Act

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.

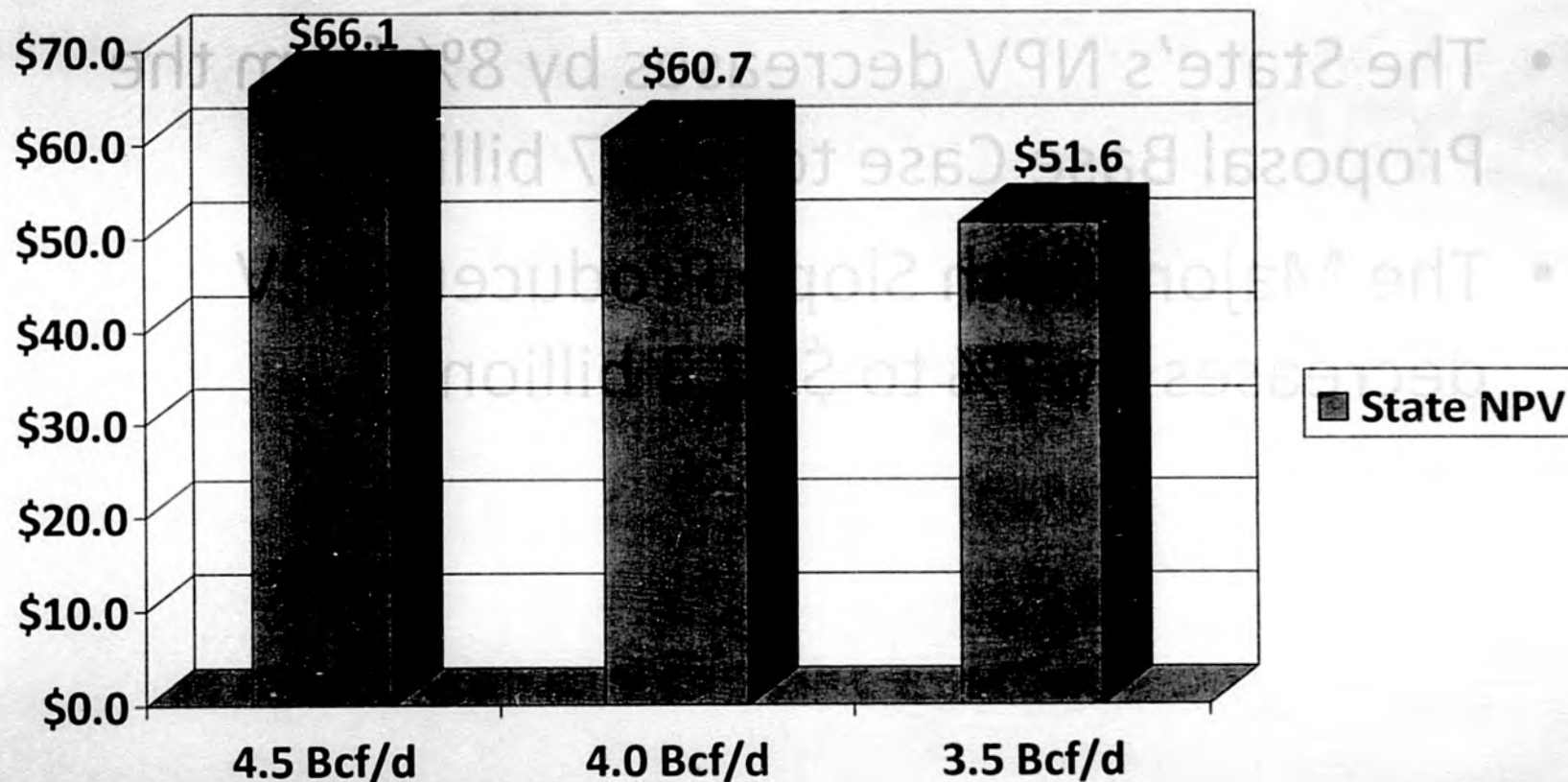


Project Economic Analysis

AGIA

The Alaska Gasline Inducement Act

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



- Treble Damages Exposure
- Competition

Year	Annual Spend	State Expenditure	TC Alaska Expenditure	3x TC Expenditure	Cumulative Exposure
2008	\$41	\$21	\$21	\$63	\$63
2009*	\$42	\$21	\$21	\$63	\$126
2009	\$34	\$31	\$3	\$10	\$136
2010	\$141	\$127	\$14	\$42	\$178
2011	\$144	\$130	\$14	\$43	\$221
2012	\$147	\$132	\$15	\$44	\$265
2013	\$75	\$39	\$36	\$108	\$373
Total	\$625	\$500	\$125	\$374	\$874

*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

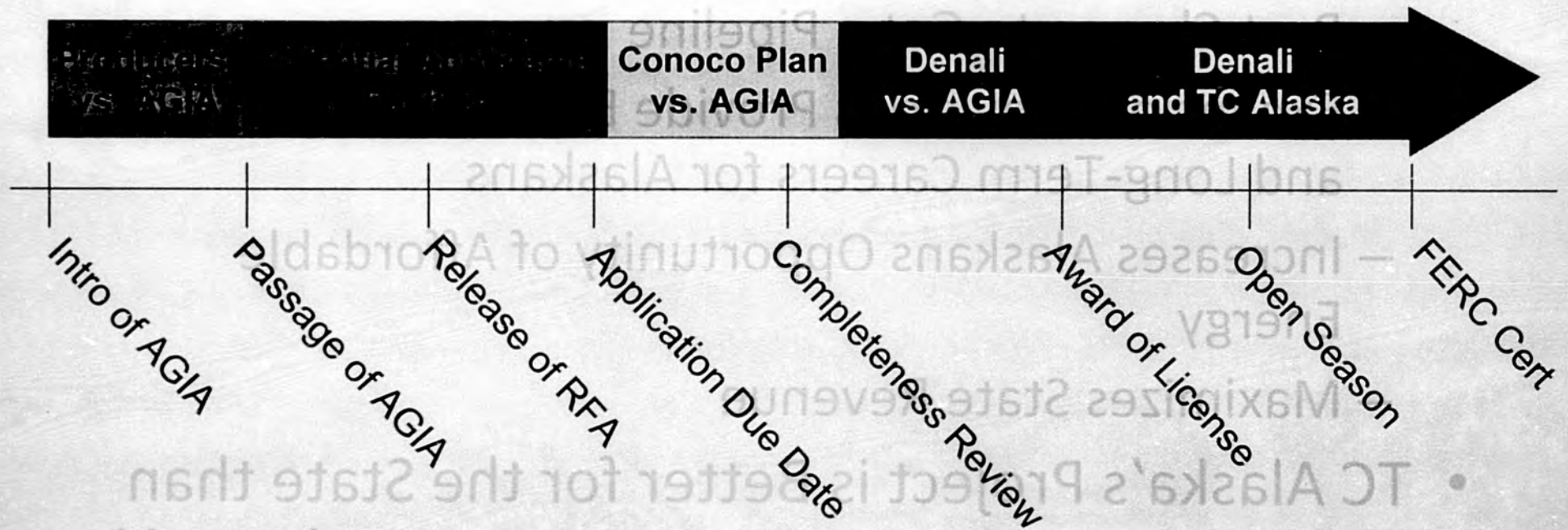
***Scheduled Open Season**

Expenditure Schedule Based on TC Alaska Application

Competition

AGIA

The Alaska Gasline Inducement Act



Summary



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)

SCOMM

155:16



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FOR RELEASE ON JUNE 20, 2008

MITSUBISHI CORPORATION JOINS ALL ALASKA GASLINE / LNG PROJECT

Fairbanks, AK – June 20, 2008 – The Alaska Gasline Port Authority (AGPA) announced today a new major participant in its consortium to advance the development of the All-Alaska Gasline / LNG Project. Japan's largest general trading company, Mitsubishi Corporation (MC), has joined AGPA in its efforts to assure the delivery of Prudhoe Bay gas to Valdez where it would be liquefied and shipped on tankers to the Asian market, the West Coast and Hawaii.

The Y-line concept is frequently used to describe what many proponents contend is the ideal strategy for developing Alaska's massive gas reserves. "The Prudhoe to Valdez LNG leg of the Y-line can go long before the Canadian leg of the line," stated Bert Cottle, AGPA Chairman and Mayor of the City of Valdez. Citing the ten years of studies, economic modeling and permit acquisition by AGPA, Cottle continued, "Proceeding with the LNG project now will assure gas to Alaskans first. Statewide, we are suffering an energy crisis of epic proportions. Alaska first, Alaska now has to be our top priority." Cottle credited Governor Sarah Palin's AGIA strategy as the catalyst for generating world wide interest in commercializing Alaska's gas.

In a recent letter to Governor Palin, Mitsubishi Corporation stated, "We understand that the constitution of the State of Alaska requires that Alaska's natural resources be used for the maximum benefit of the citizens of Alaska. We believe that an LNG Project best meets this constitutional imperative by providing for rapid development, local [utilization] of gas supplies, in-state operations that will generate employment, and economic advantages associated with selling into both domestic and international markets." Mitsubishi Corporation emphasized that they have the ability to off-take a considerable volume of LNG from Valdez for distribution on a flexible basis to buyers in the United States and abroad.

A Fortune Global 500 company, Mitsubishi Corporation has over 500 subsidiaries and affiliates and more than 200 bases of operations in eighty countries worldwide. Mitsubishi Corporation enjoys a significant presence in various industries worldwide, including energy, metals, machinery, chemicals, foods and general merchandise. Mitsubishi Corporation is also engaged in the production, liquefaction, sale, and logistics of natural gas through a number of LNG projects, handling approximately one-half of Japan's LNG imports.

Board of Directors:

Mayor Bert Cottle, Chairman · Dave Cobb, Vice-Chair · Merrick Peirce, Treasurer ·
Luke Hopkins, Secretary · Jim Whitaker · Dave Dengel · Rex Rock · Randy Hoffbeck · Harold Curran

ALASKA STATE LEGISLATURE

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House Rules Subcommittee on AGIA
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Third Special Session
Twenty-Fifth Legislature

Howard Johnson Plaza, Anchorage

Friday June 20, 2008

9:00-5:00 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.

➤ **AK Natural Gas Development authority**

Harold Heinze, CEO
Delma Bratvold, Science Applications International Corp. (SAIC)

➤ **Enstar Natural Gas Company**

Gene Dubay, Sr. V.P. & COO, Continental Energy Systems
Colleen Starring, Regional V.P., Enstar
John Lau, Director of Engineering, Enstar Nat Gas

➤ **AK Natural Resources to Liquids LLC**

Richard Peterson, Managing Member
Peter Tijm, Member

➤ **Econ One Research**

Barry Pulliam, Senior Economist, LB&A Consultant
Washington Lemm, Consultant

➤ **AK Gasline Port Authority**

Bill Walker, Project Manager & General Counsel

Testimony: By Invitation
Teleconference – Listen Only

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6-20-08
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AK Gasline Port Authority

Bill Walker

presented 6-20-2008

Comparison of Netbacks from Potential LNG Project with ALCAN Pipeline Project

June 20, 2008

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Econ One Review

- Analyzed economic assumptions & netback values associated with potential LNG and pipeline projects
 - Port Authority proposal
 - Other potential LNG configurations
 - TransCanada proposal
- Reviewed Port Authority proposal, assumptions and analysis
- Reviewed Administration analysis of LNG and pipeline netbacks
- Reviewed information from various LNG specialists and government agencies

Econ One Review

(cont'd)

- **Analyzed netback @ the inlet to GTP**
 - **\$ / MMBtu**
 - **Total value of netback**
 - **Nominal \$**
 - **Real (\$2008)**
 - **NPV-10**
- **Project that “maximizes” the netback creates highest value for resource owners**
 - **Producers**
 - **State**

Project Netback Analyses

LNG Exports to Asia

- 2.7 Bcf/d (Port Authority proposed)
- 4.5 Bcf/d (Little Susitna proposed)

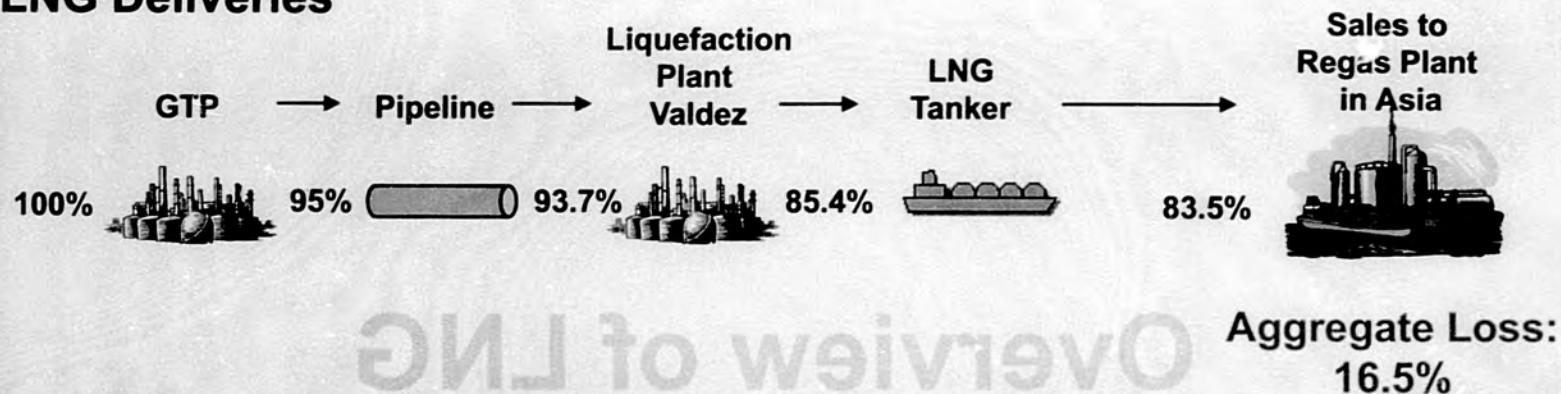
Pipeline to Alberta

- 3.5 Bcf/d (TransCanada minimum volumes)
- 4.5 Bcf/d (TransCanada base volumes)

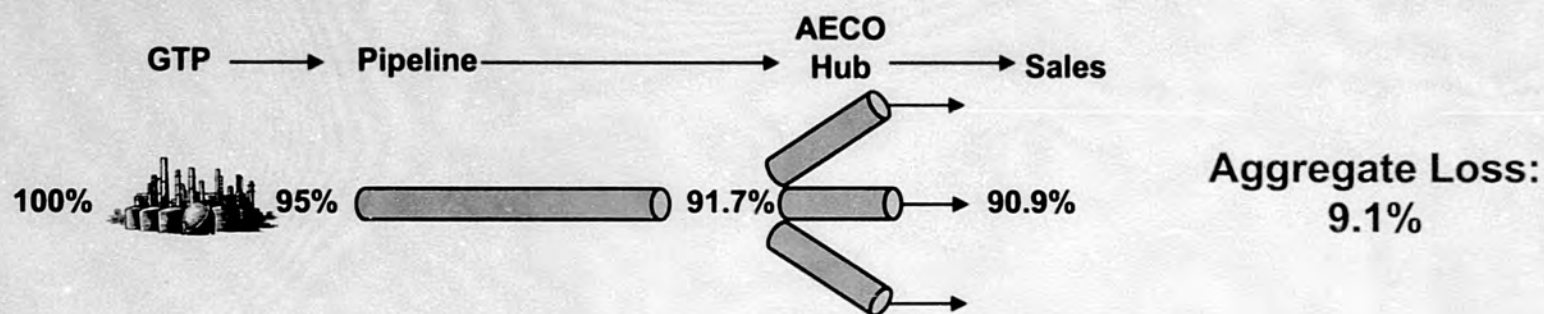
Overview of LNG v. Pipeline Delivery

LNG and Pipeline Delivery Chain

LNG Deliveries



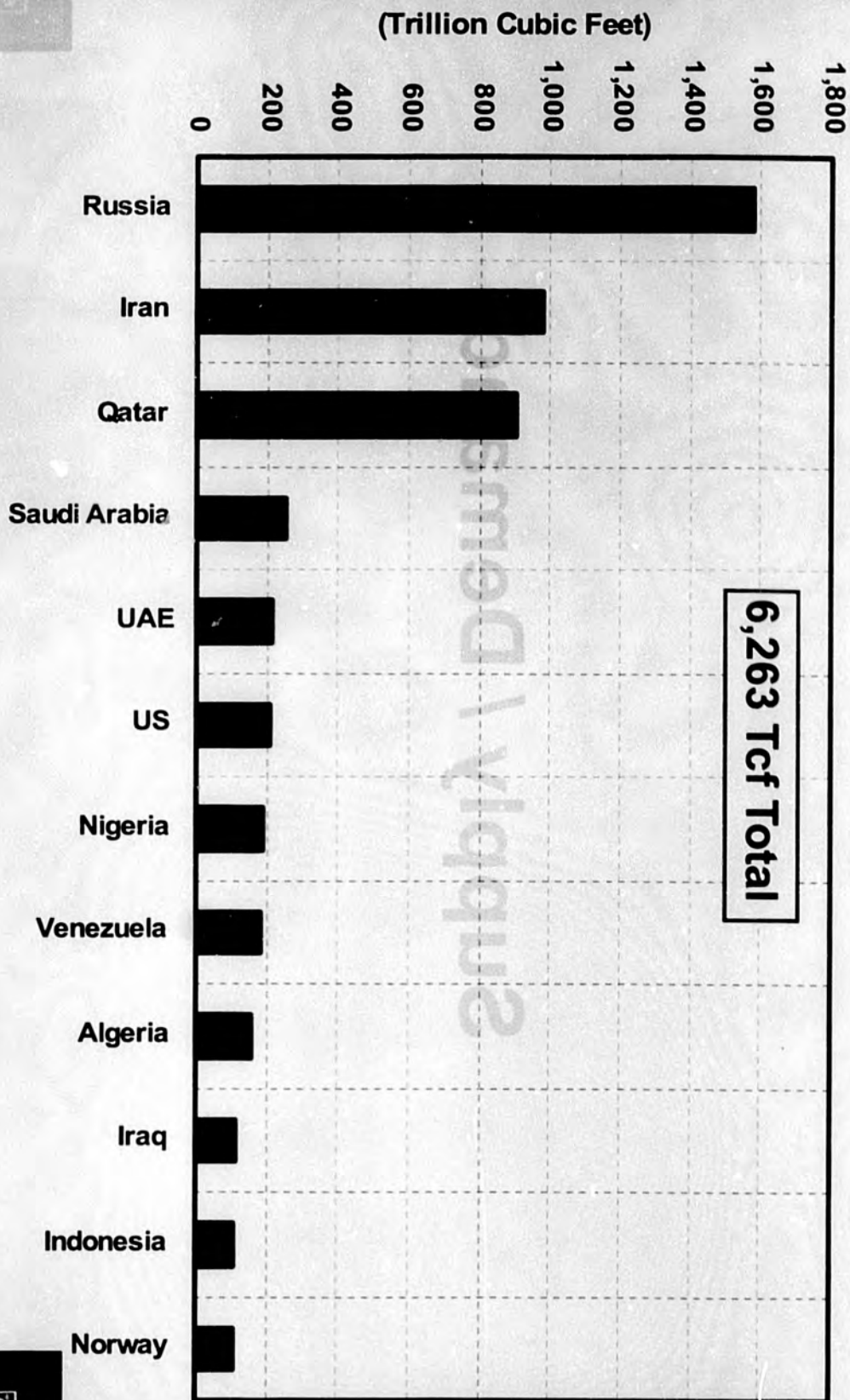
Pipeline Deliveries



Supply / Demand

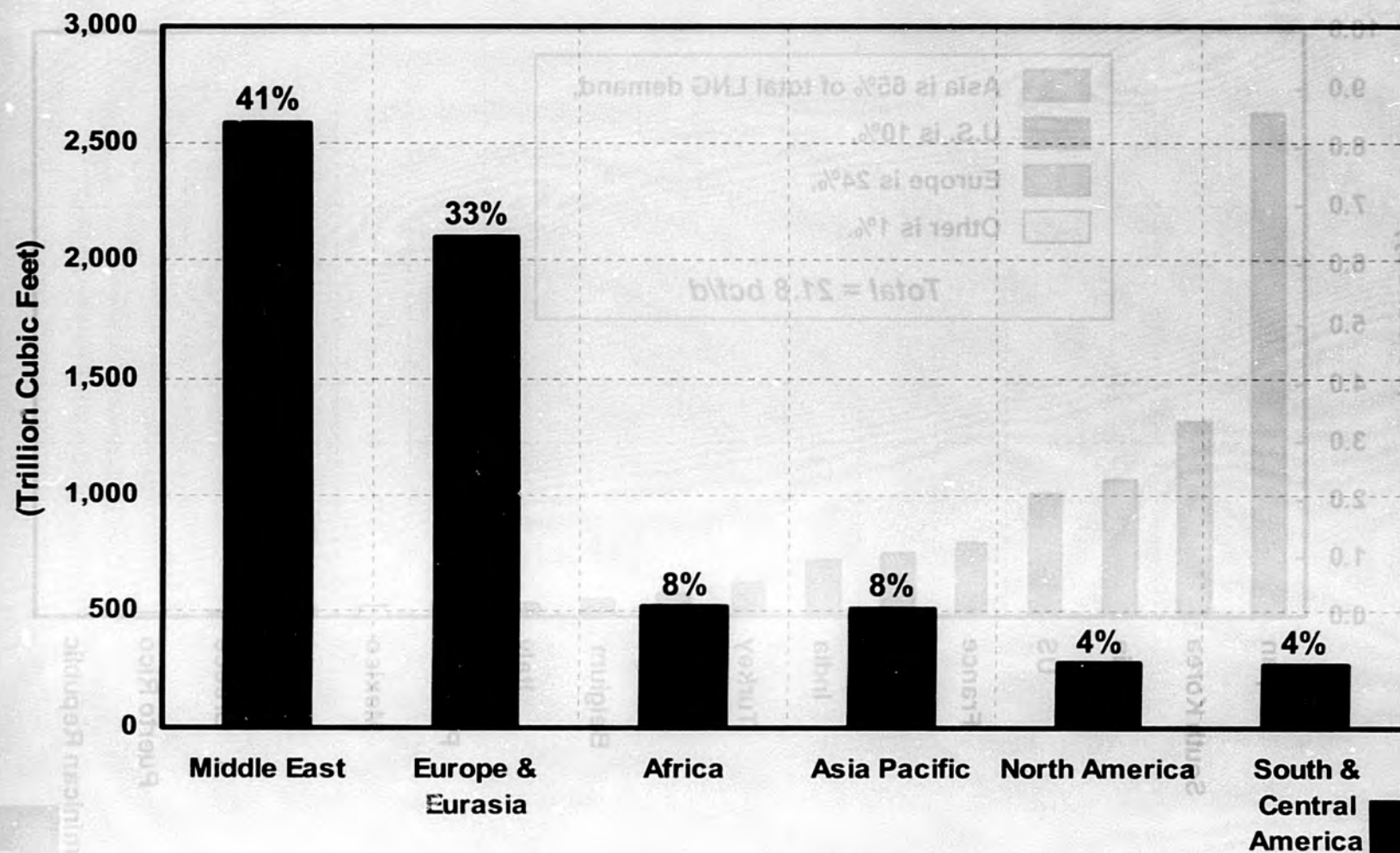


Worldwide Proved Gas Reserves



Source: BP Statistical Review 2008.
Represents 80% of known reserves in 2007

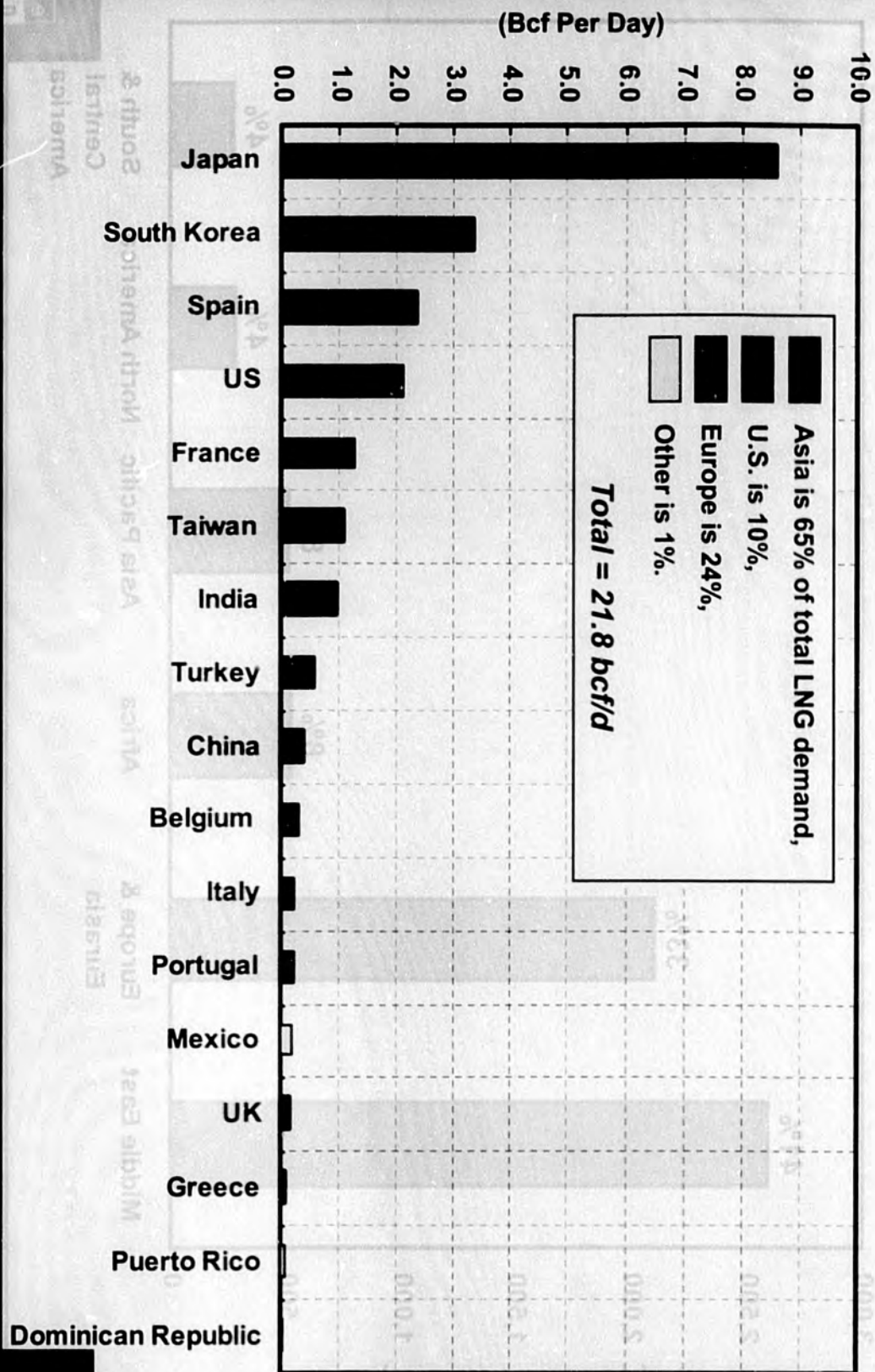
Worldwide Proved Gas Reserves by Region



Source: BP Statistical Review 2008.

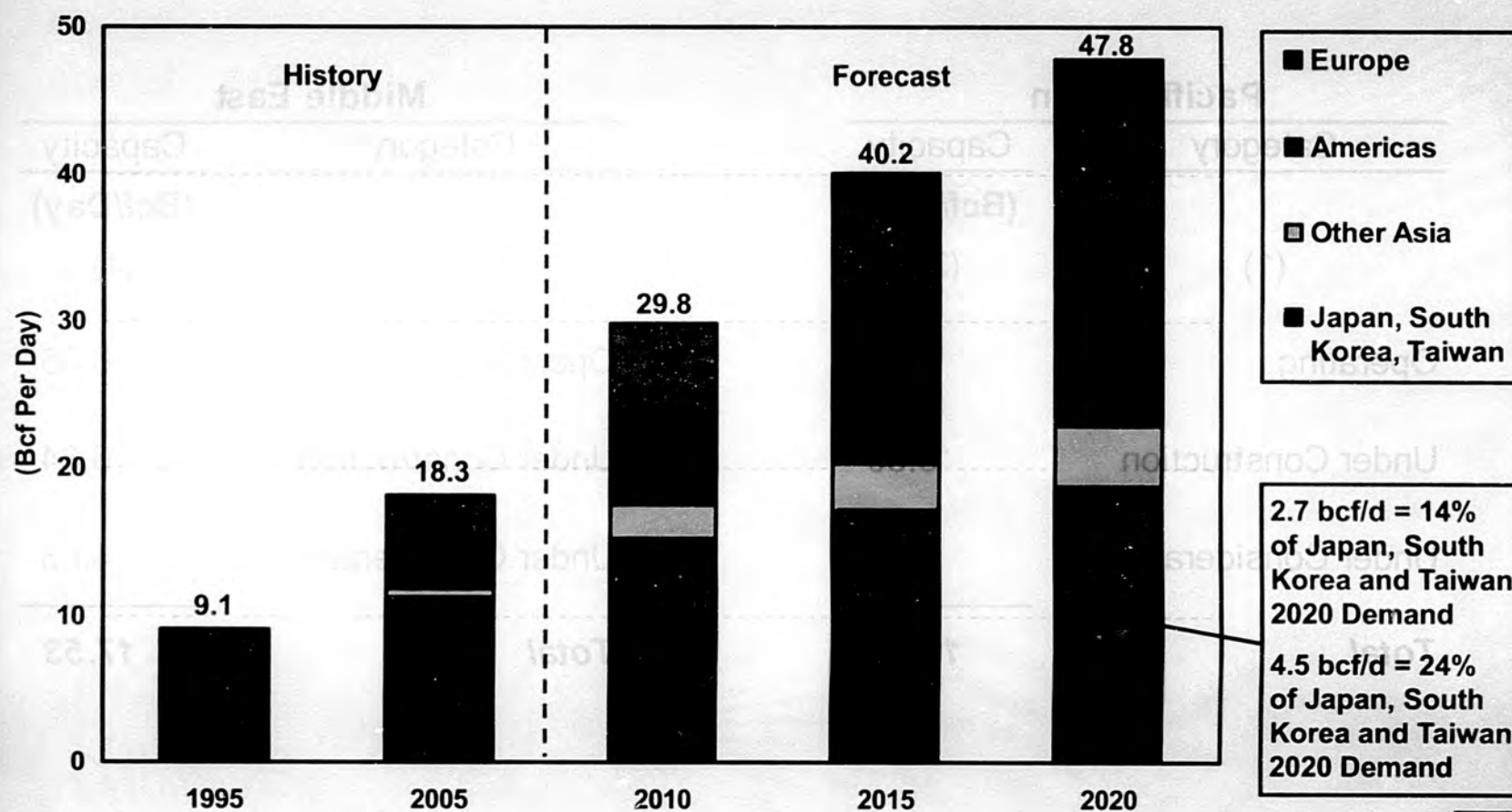
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Current Worldwide LNG Demand



Source BP Statistical Review 2008

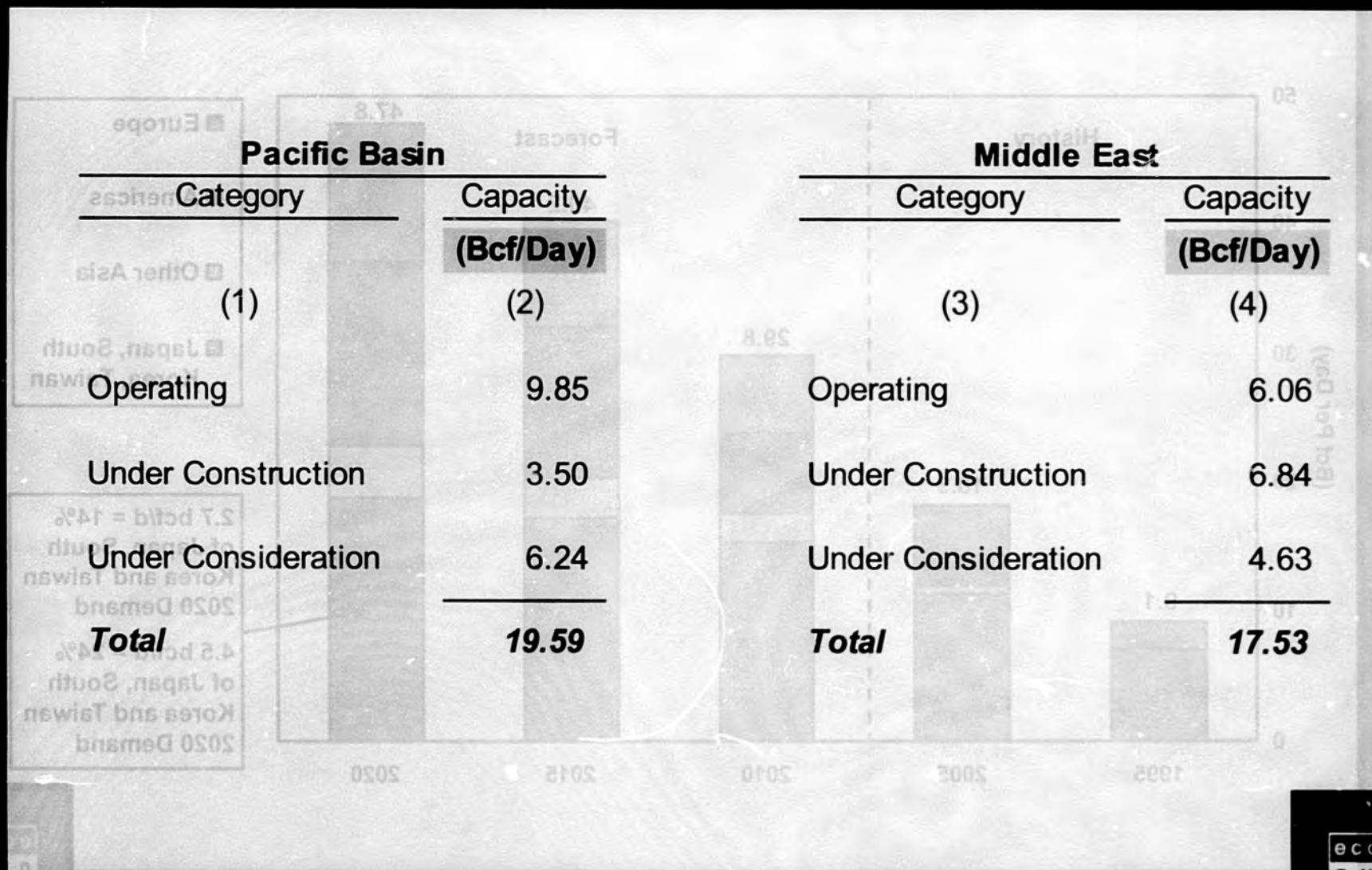
Projected LNG Demand by Region



Source: National Petroleum Council
Jensen Associates, August 2007

Liquefaction Plant Capacities by Region

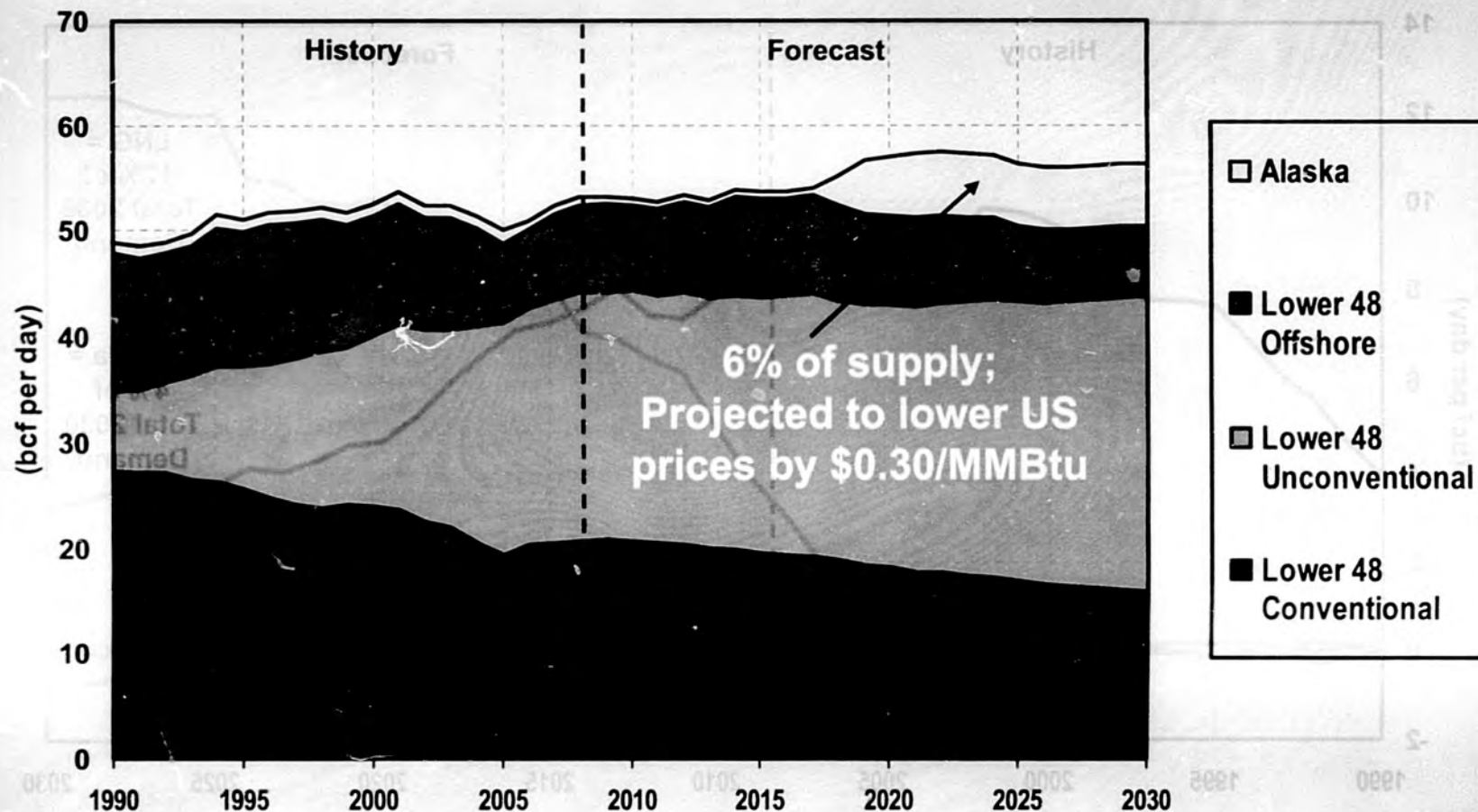
(Pacific Trade)



Source: Facts Global Energy, "Evaluating Natural Gas Import Options for the State of Hawaii", April 2007

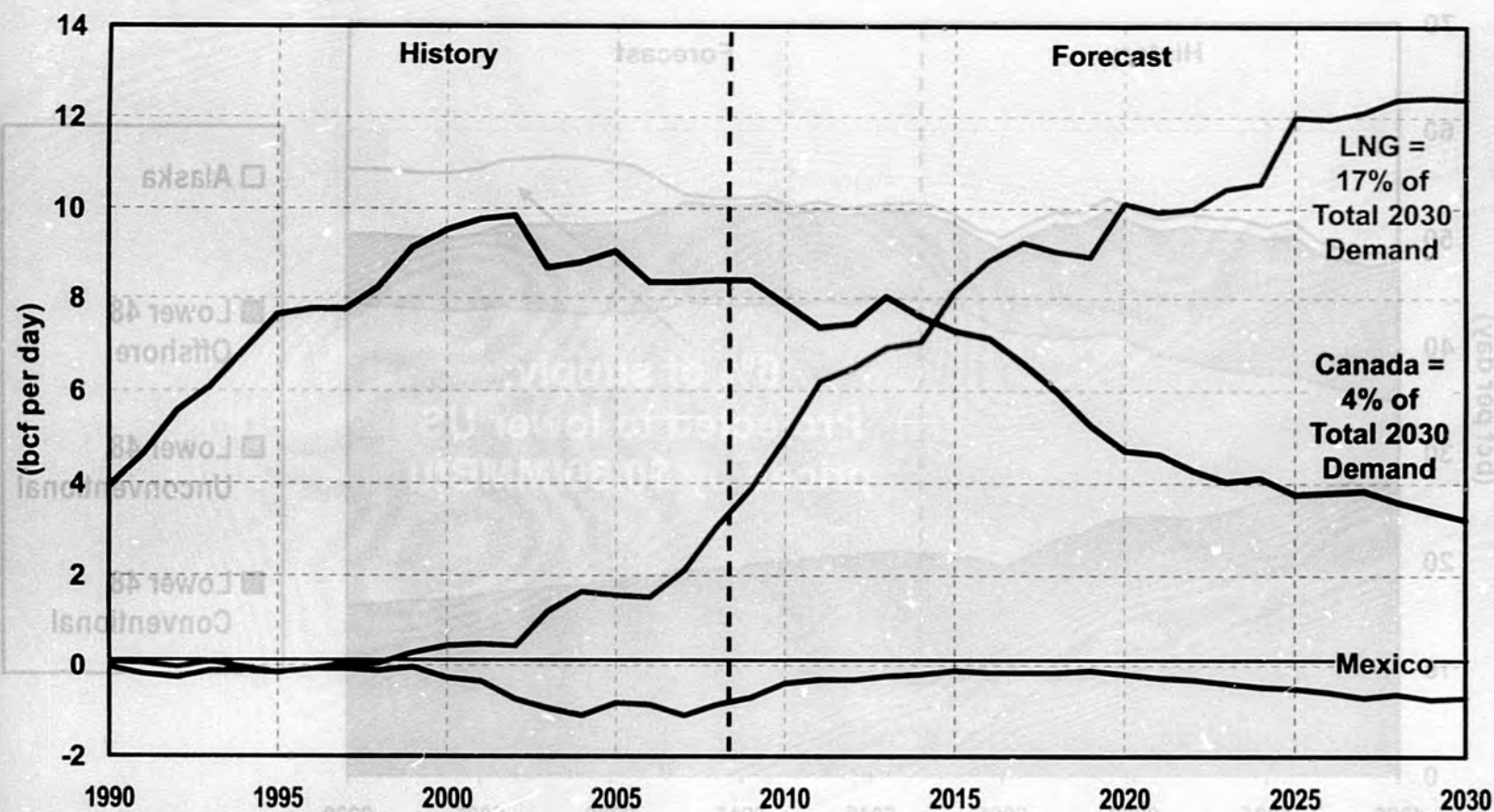
U.S. Gas Production by Source

(1990 - 2030)



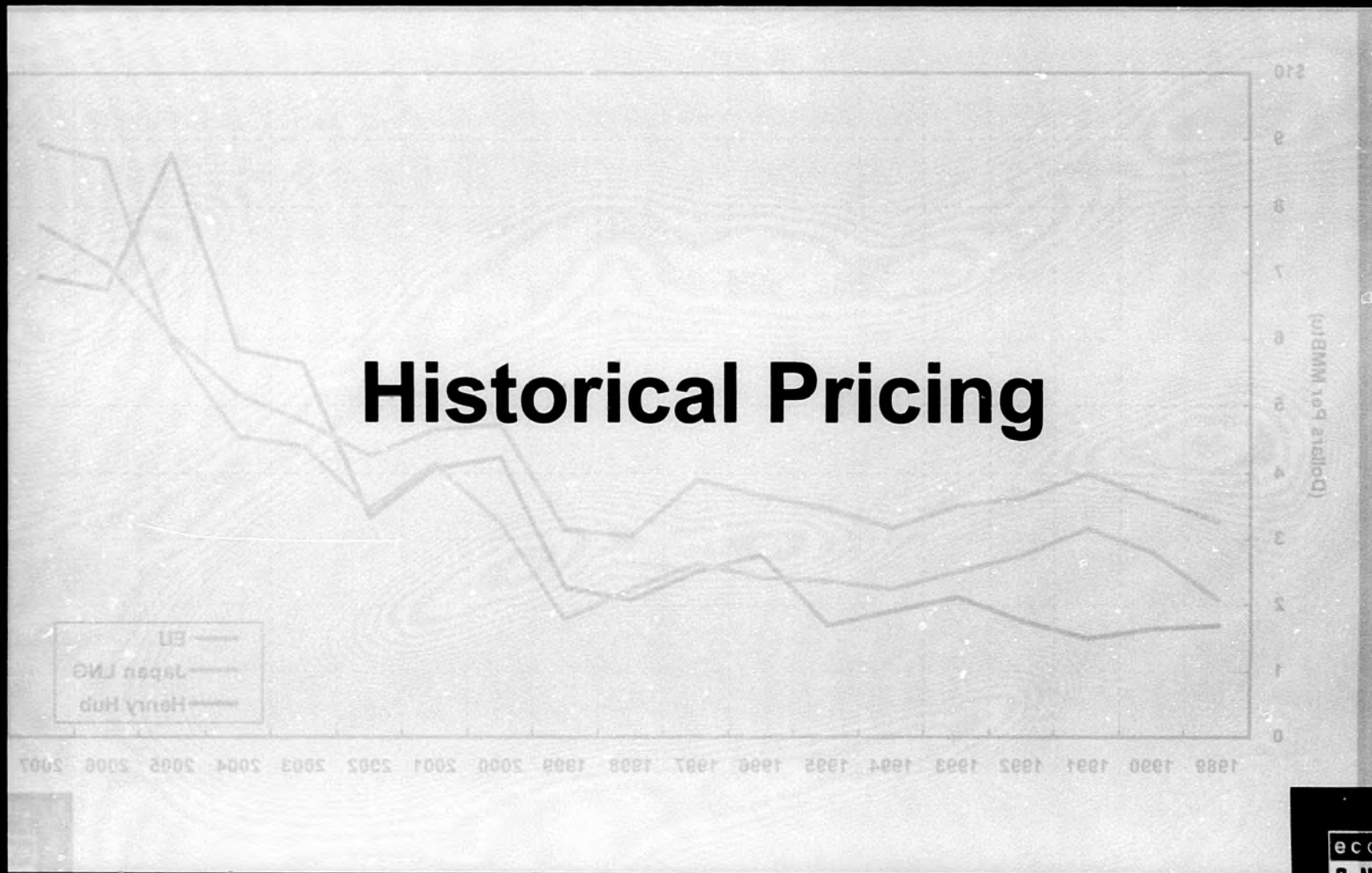
Source: EIA AEO 2007.

U.S. Net Natural Gas Imports (1990 - 2030)



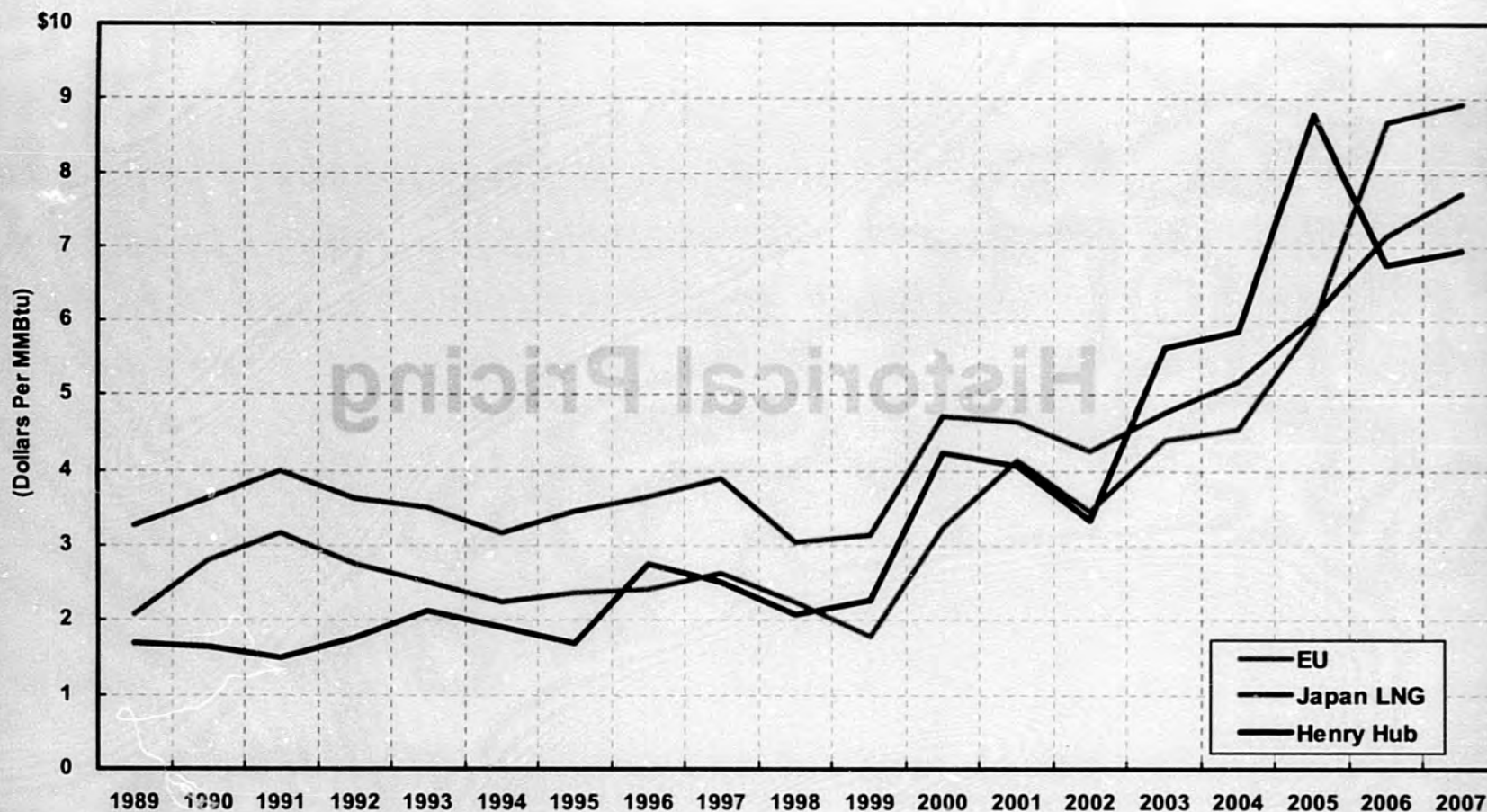
Source: EIA AEO 2007

Historical Pricing



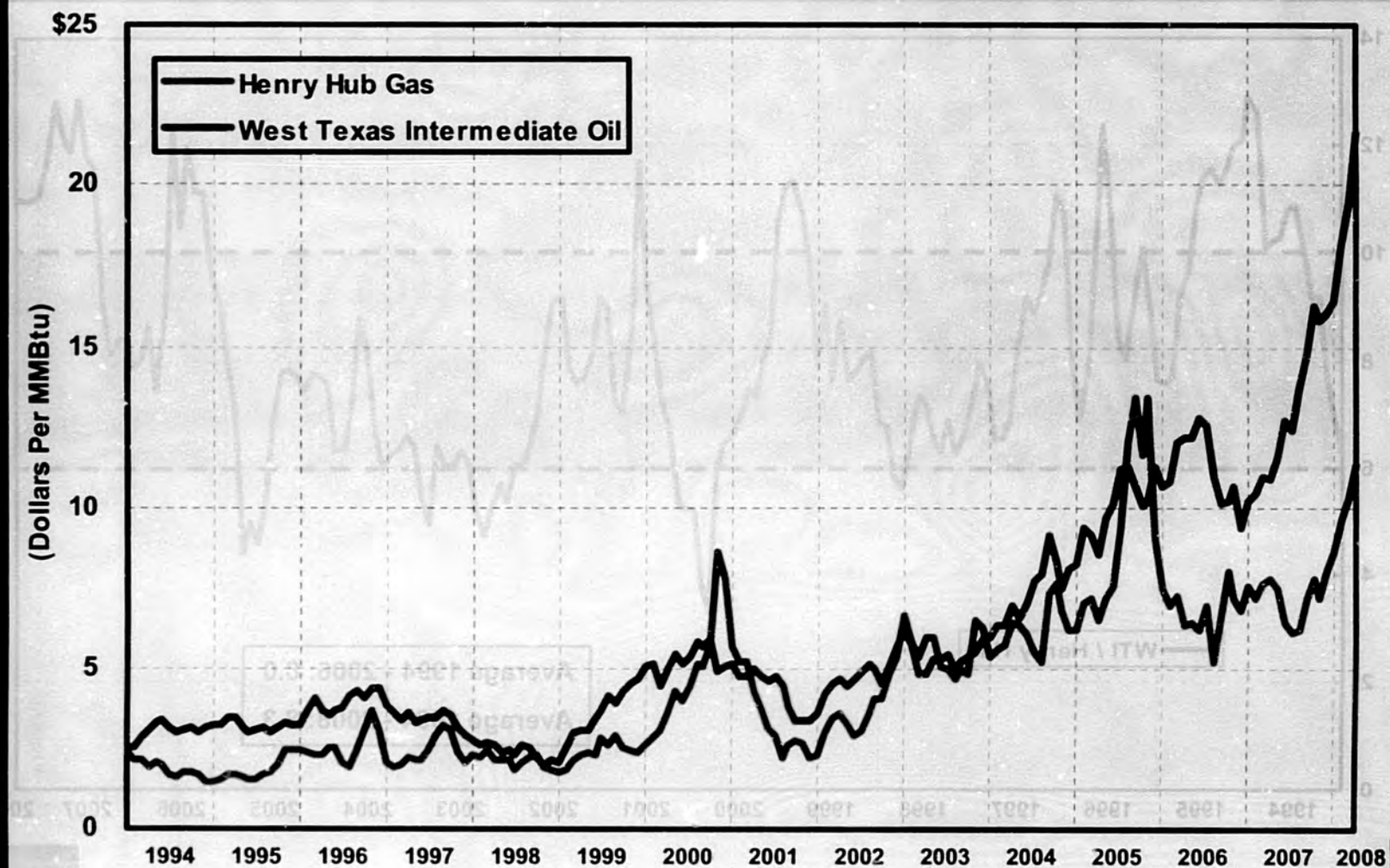
Historical Gas Prices

(U.S., Japan and Europe)



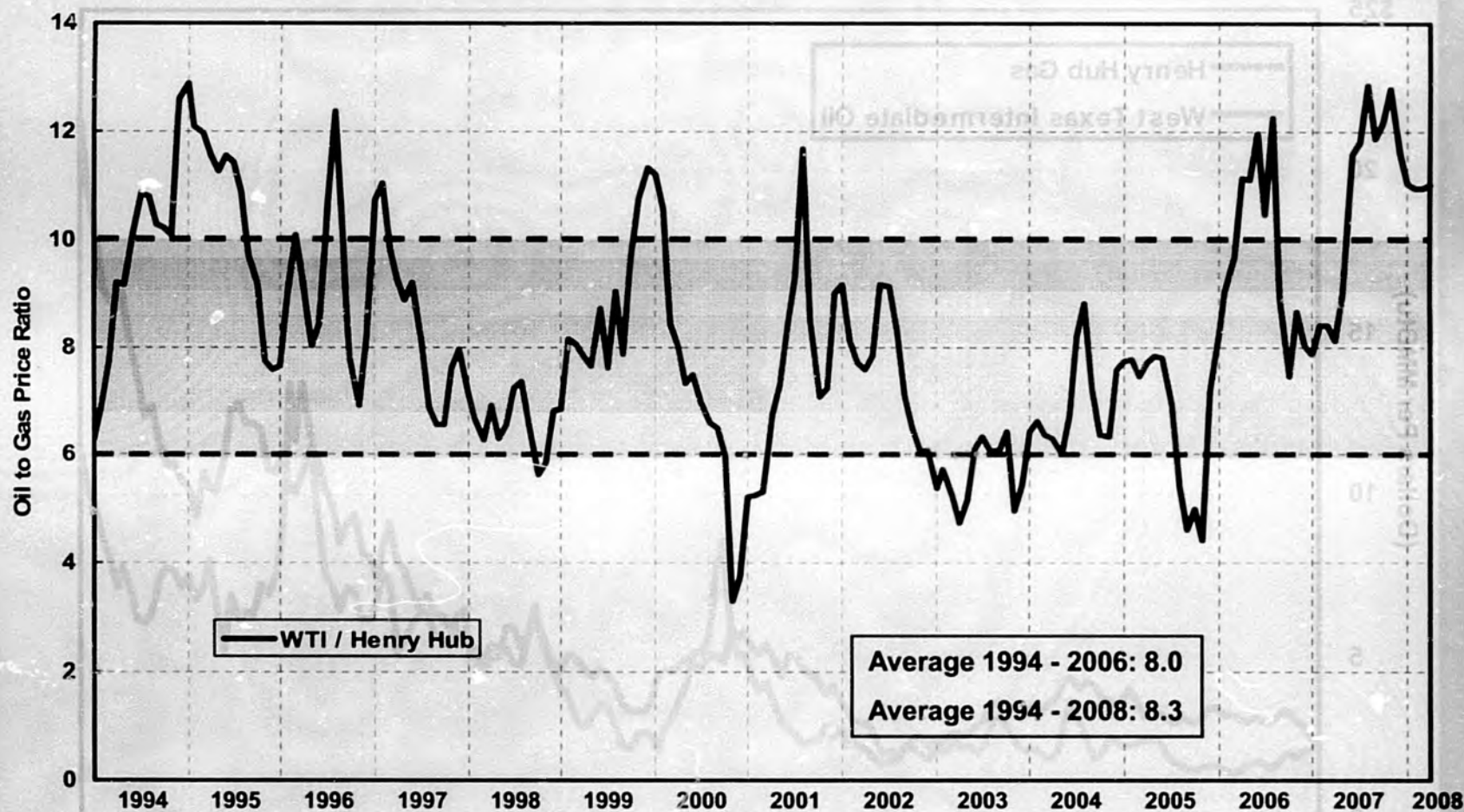
U.S. Natural Gas and Crude Oil Prices

(1994 - 2008)

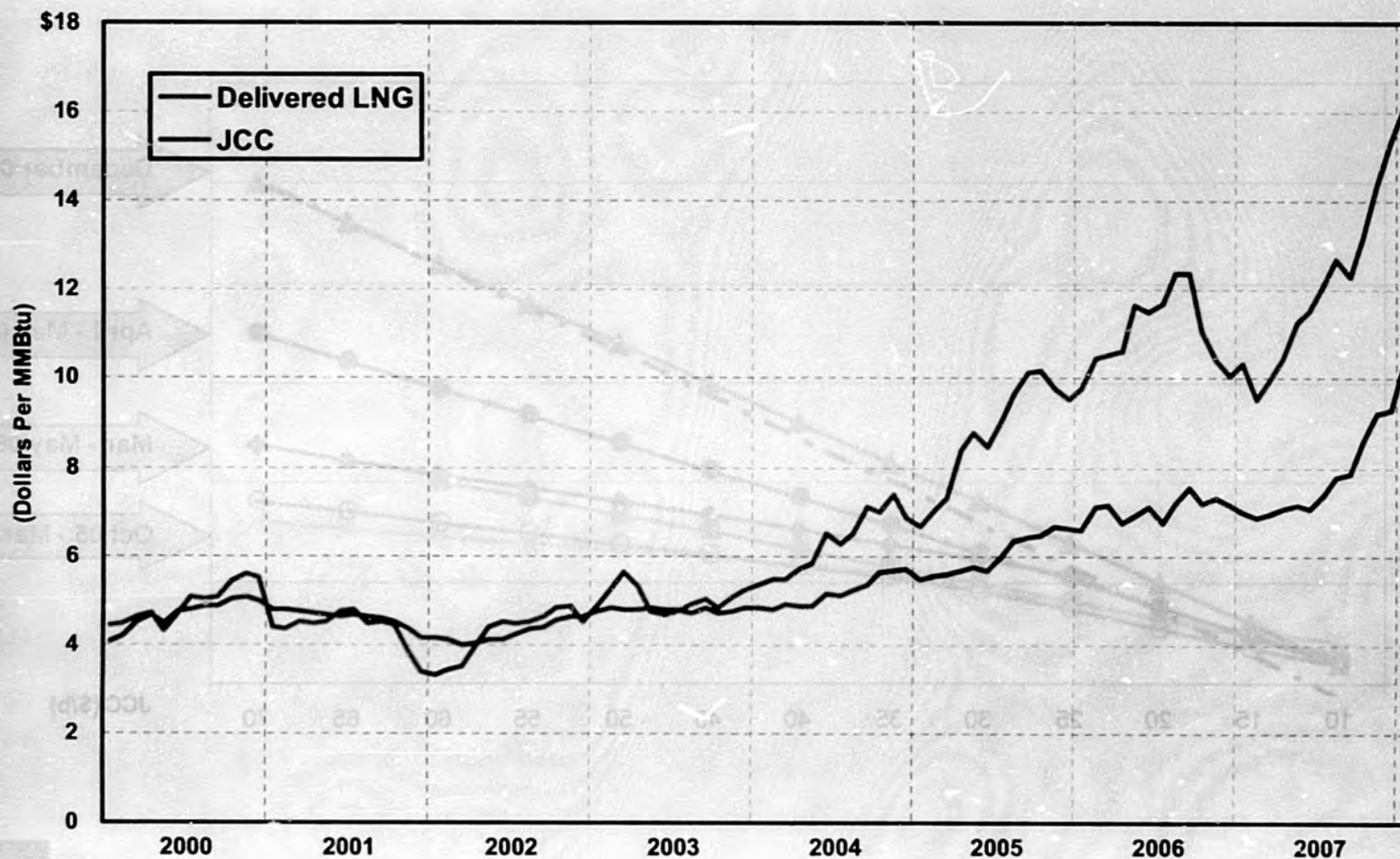


Historical Relationship Between Oil and Gas Prices in the U.S.

17

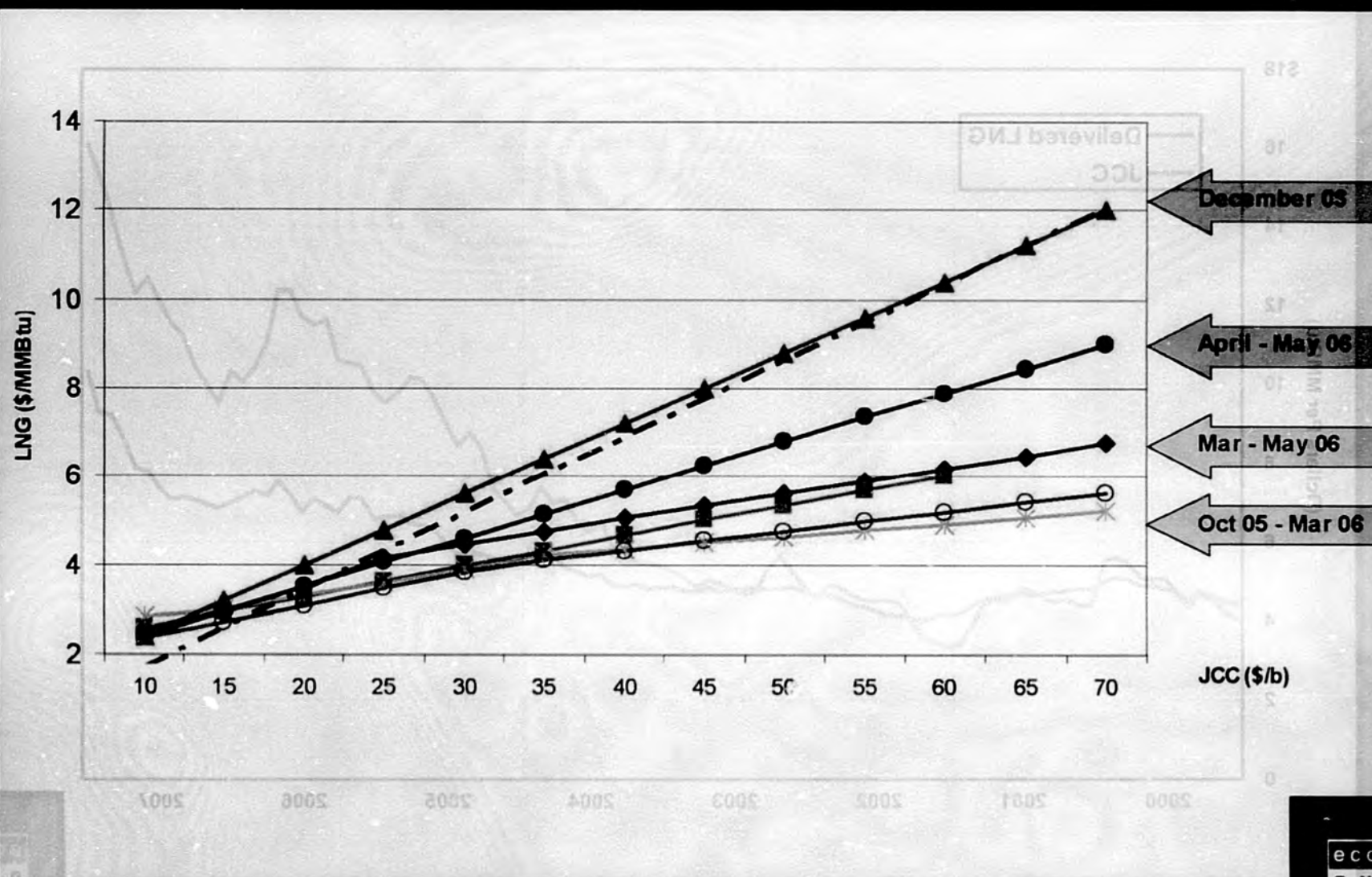


Japanese Crude Oil and Gas Prices (2000 - 2008)



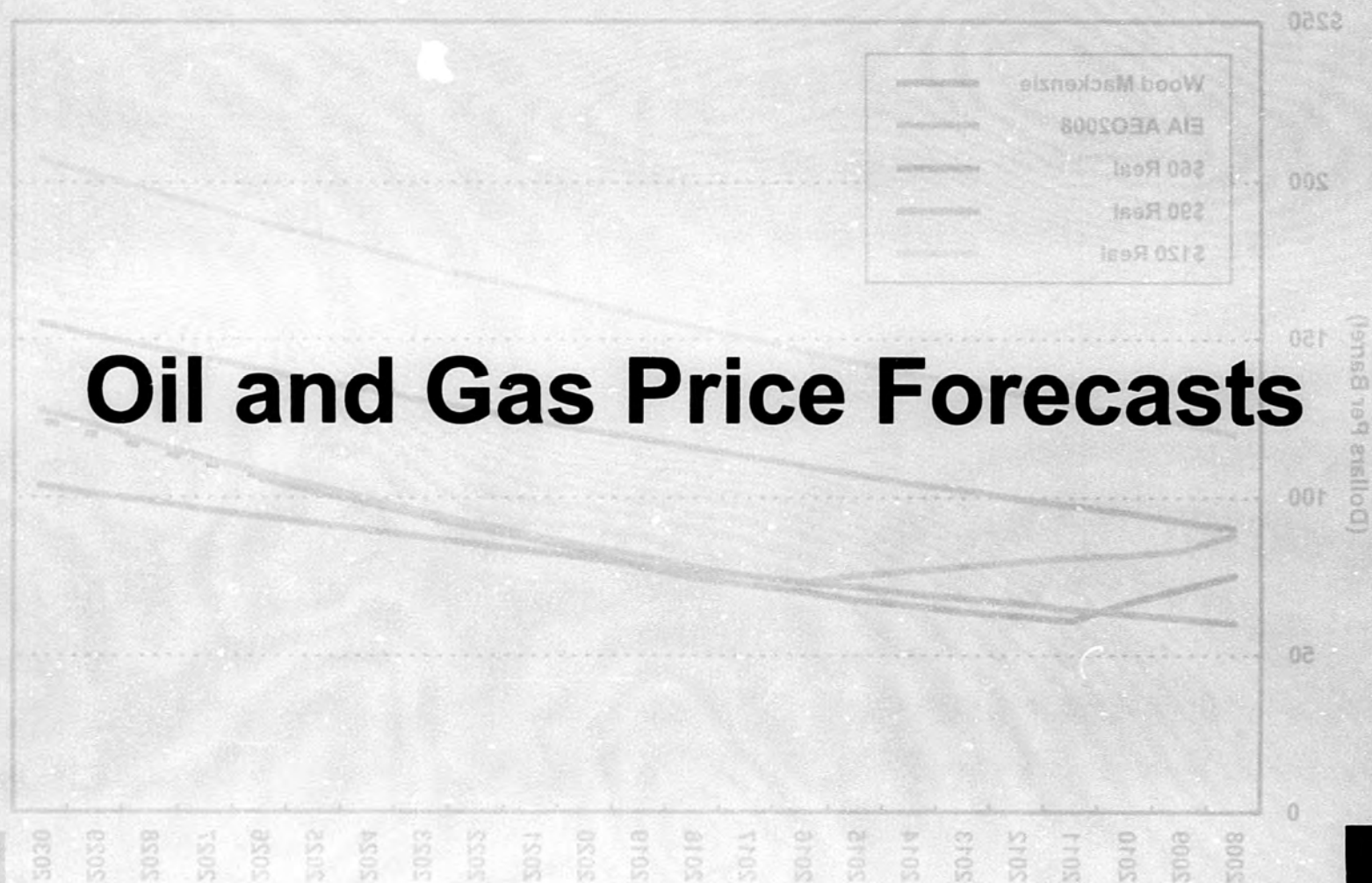
Evolution of LNG Pricing in Asia

(Relationship of Gas to Oil Prices Seen in Recent Contracts)

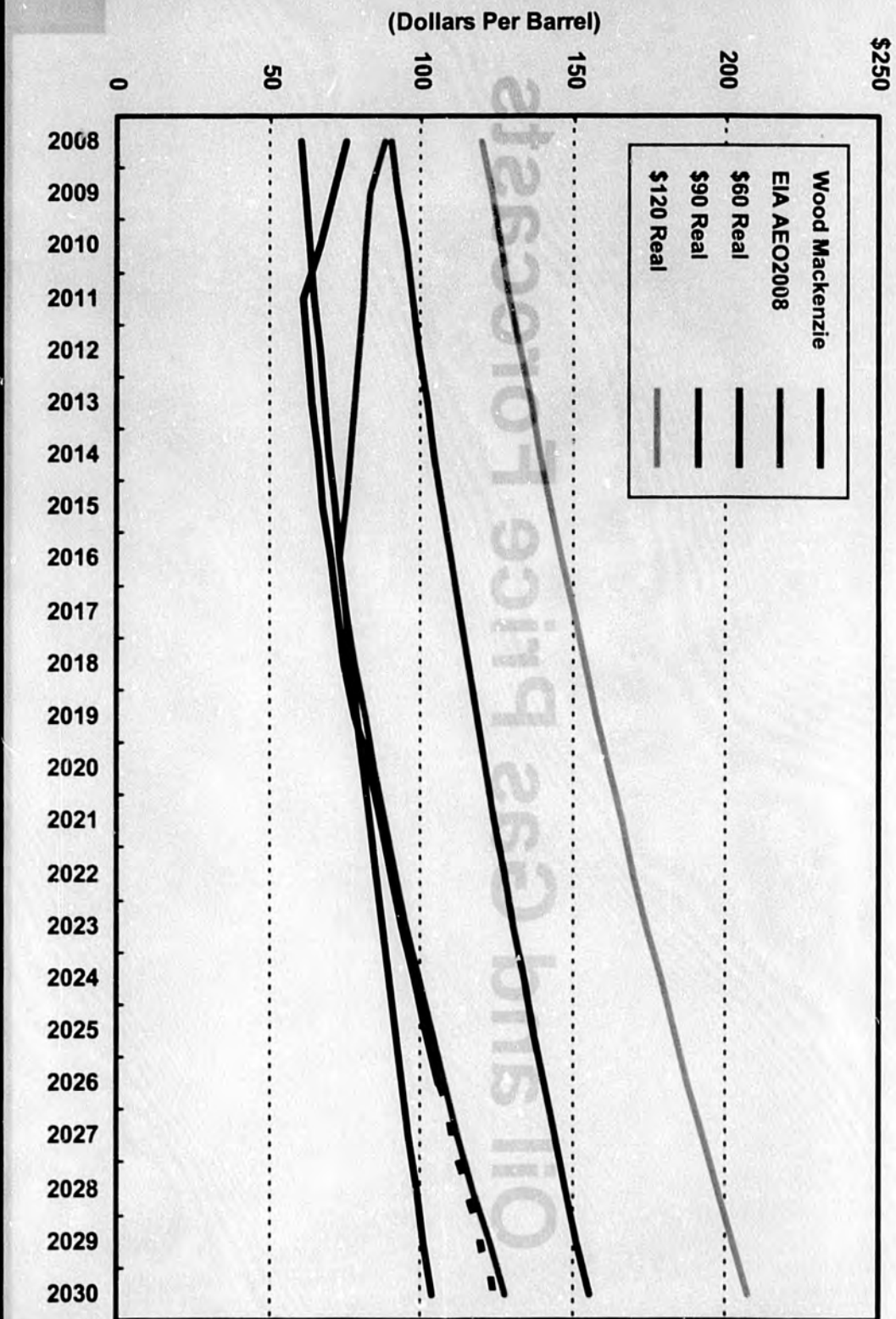


Source: Facts Global Energy, "Evaluating Natural Gas Import Options for the State of Hawaii", April 2007.

Oil and Gas Price Forecasts



Oil Prices Used in Analyses



Note: 2.5% annual price inflation

Prospects for Asian LNG Prices

- There is a wide range of prices depending on contract vintage
- Recent contracts have reflected stronger links to oil
- Many contracts are on a provisional basis as previously (low-priced) formulas have expired or are not applicable at current oil price levels
- Relatively high priced opportunities in Asia will attract gas supplies to that region
 - Increasingly competitive among suppliers
 - Opportunities for buyers
 - Price will be dependent on the supply situation at the time of contracts