
***Economics Society of Calgary
Fall Seminar***

Hot Topics in The Oil Patch

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Outline

- Heavy Oil Differentials
- Natural Gas - Electricity Convergence
- Industry Cash Flow Issues - Cash Taxes!
- The Service Sector & Activity Levels
- The Canadian Equity Market
- Questions

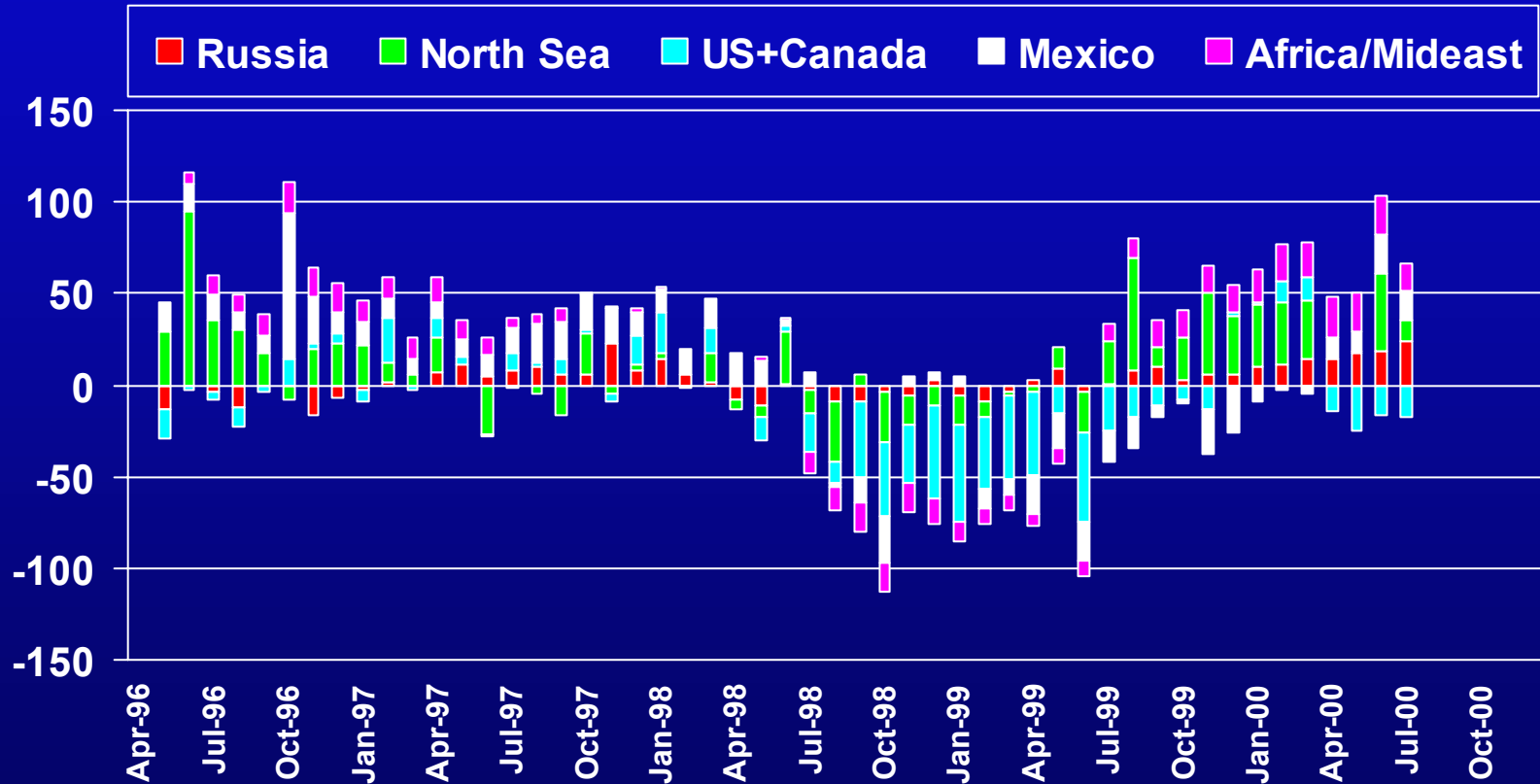
Heavy Oil Differentials

Oil Market Snap-shot

- Crude oil and product inventories are low
- Crude prices are high
- Demand growth is slowing
- World supply is increasing
- OPEC is rapidly approaching its capacity
- Fear and greed are driving the futures market

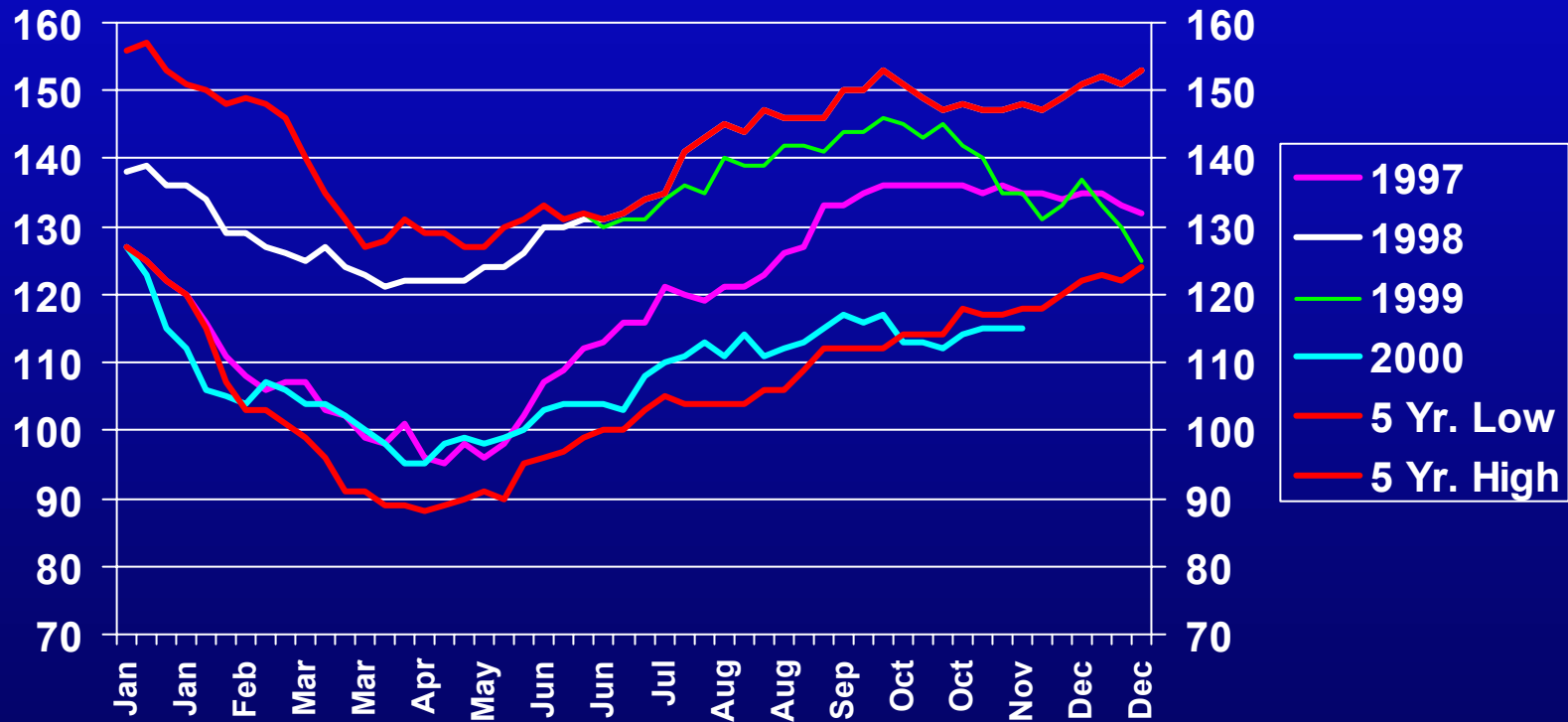
Decomposition of Changes in Supply for Top Five Non-OPEC Producing Regions

Thousand of Barrels



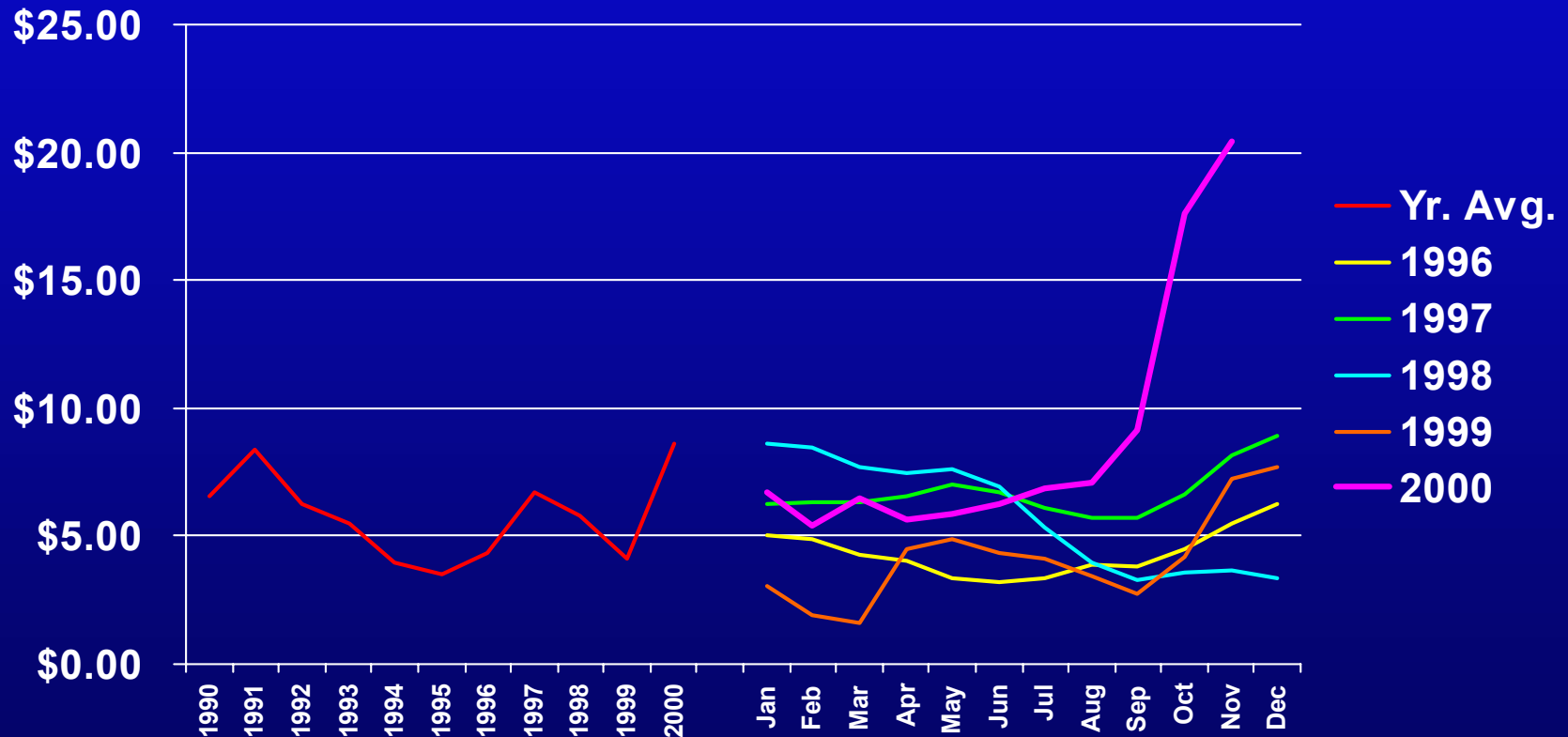
Stocks of Distillates: United States

Millions of
Barrels

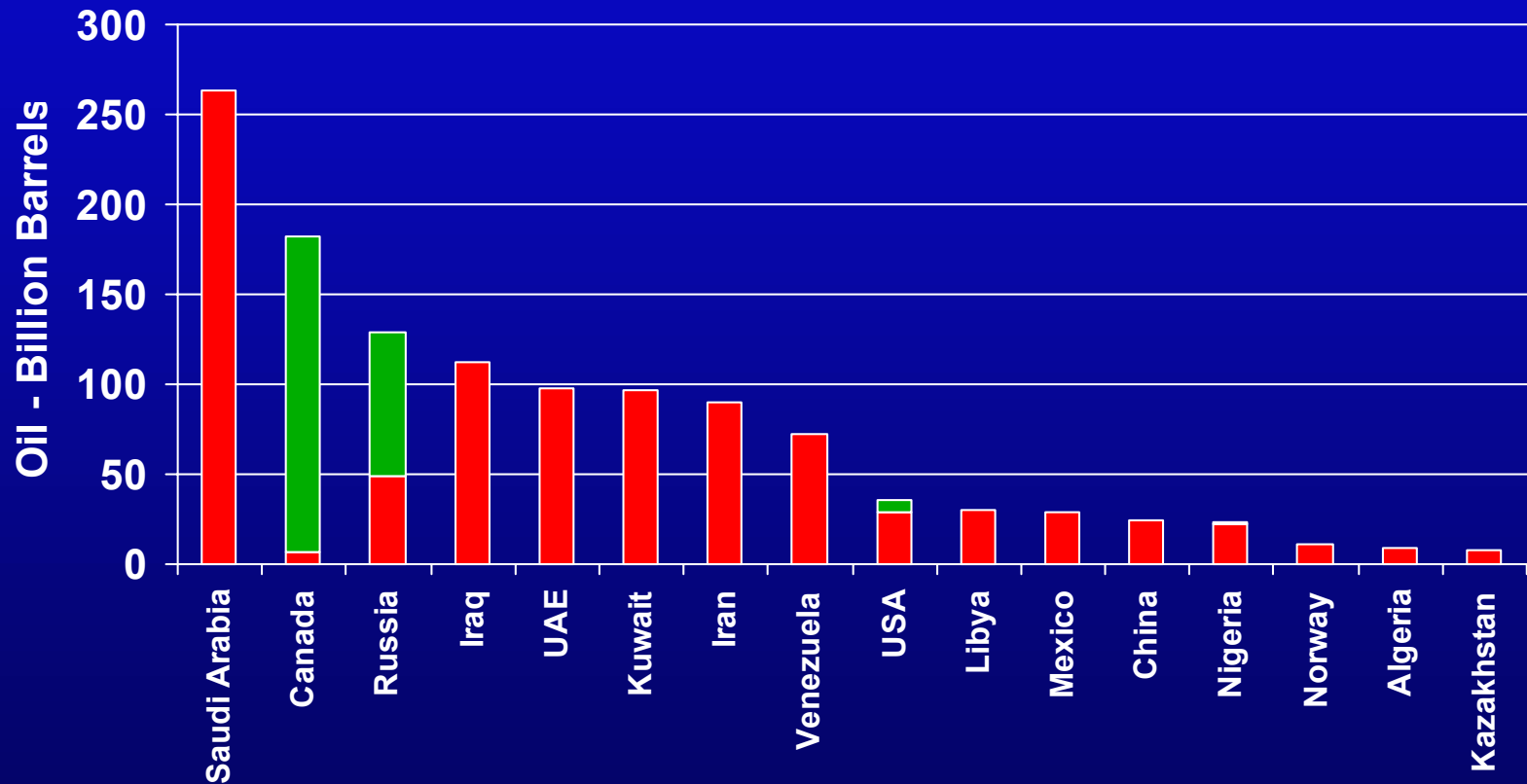


Crude Oil Prices

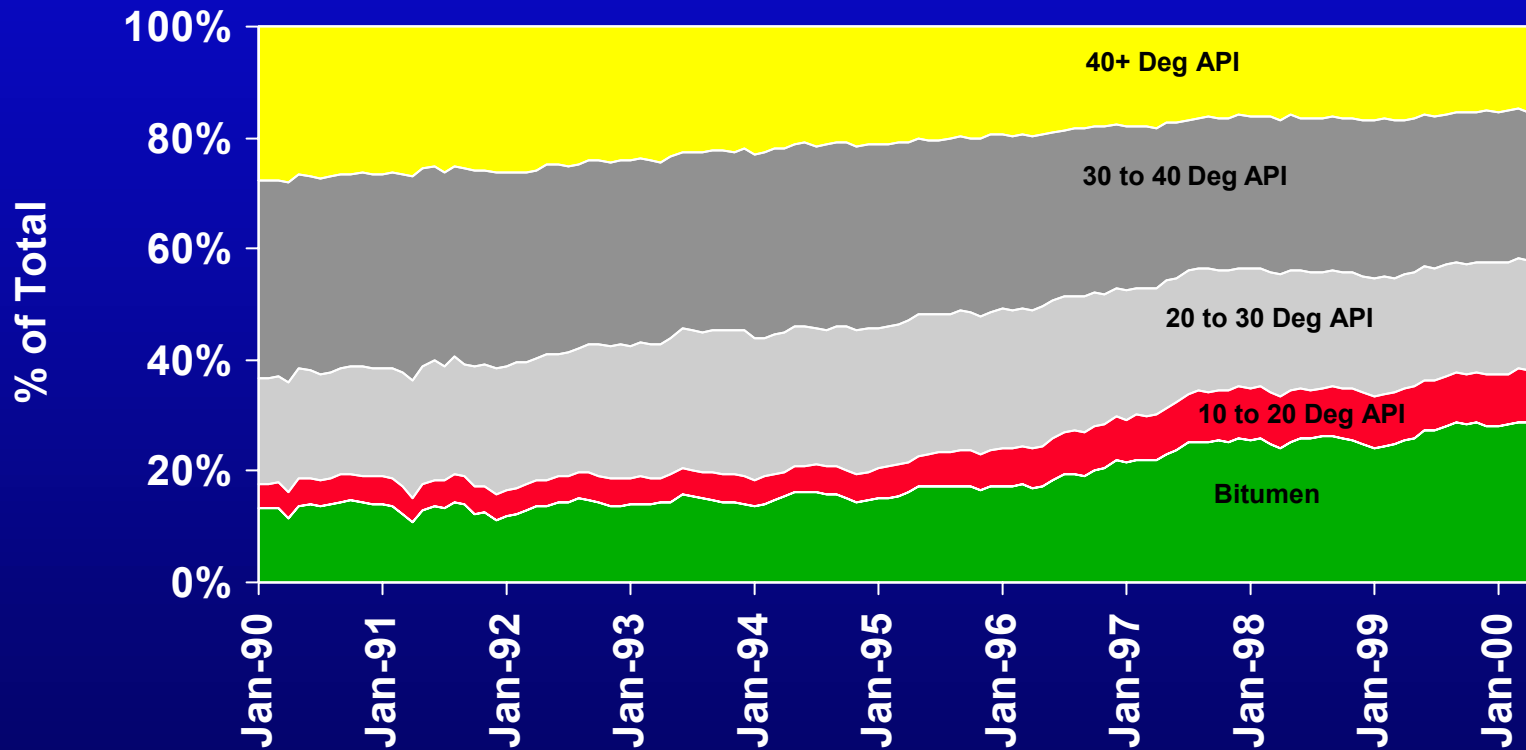
Differential: Edmonton 40 Light Versus Hardisty 25.1 Medium



World Oil and Bitumen Reserves That are Believed to be Recoverable with Current Technology

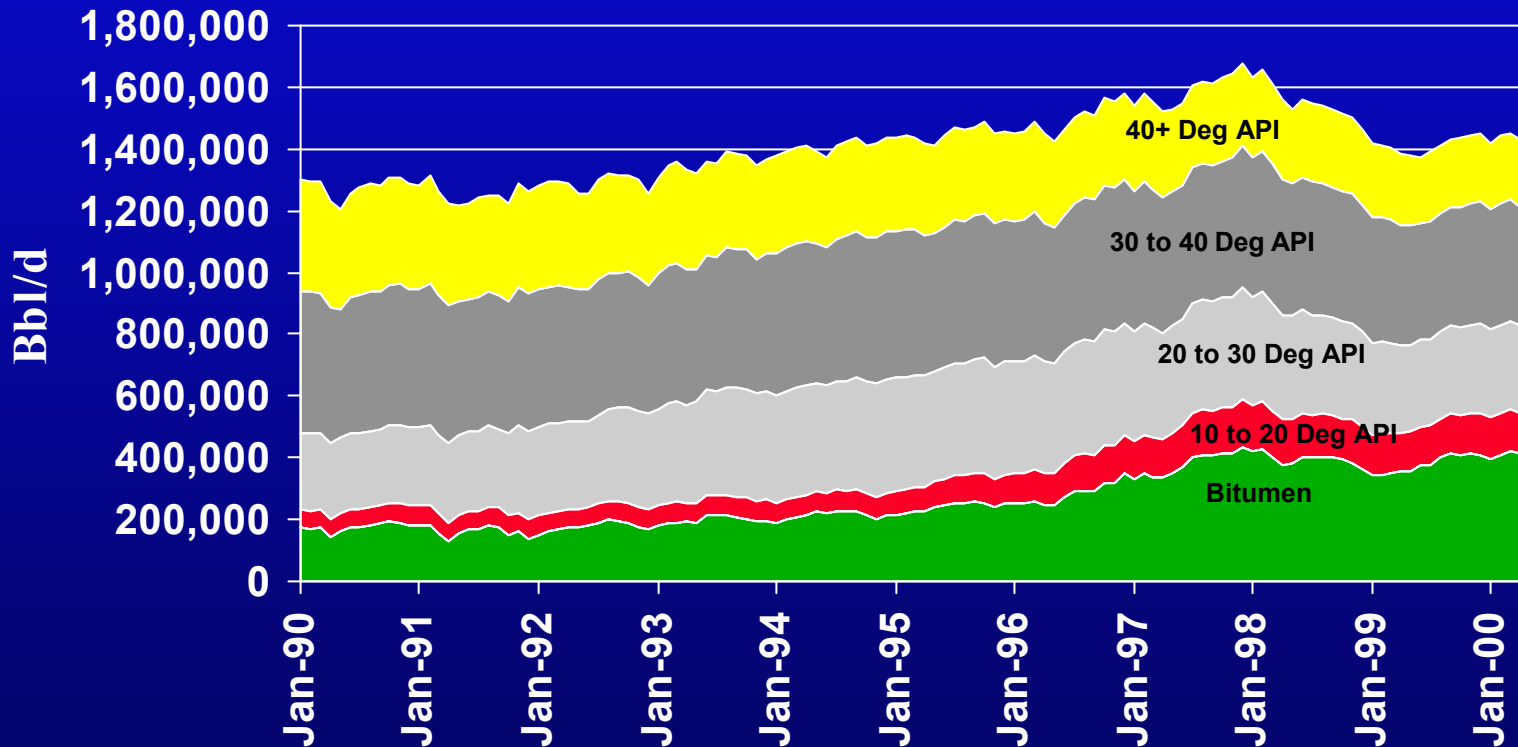


Western Canadian Conventional Production by API Degrees (Excluding Synthetics)



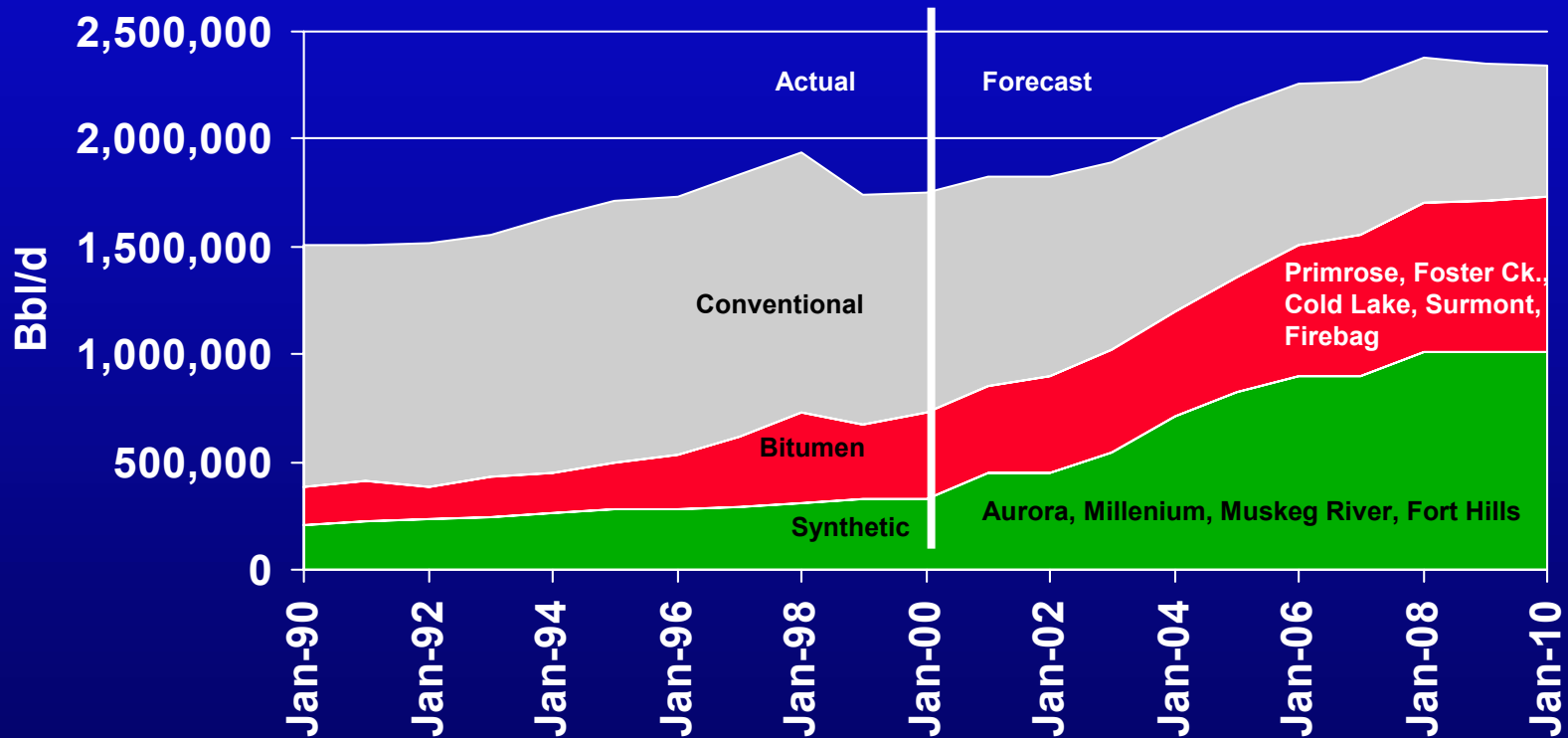
Data Source: GeoOffice by international Datashare corporation

Western Canadian Conventional Production by API Degrees (Excluding Synthetics)



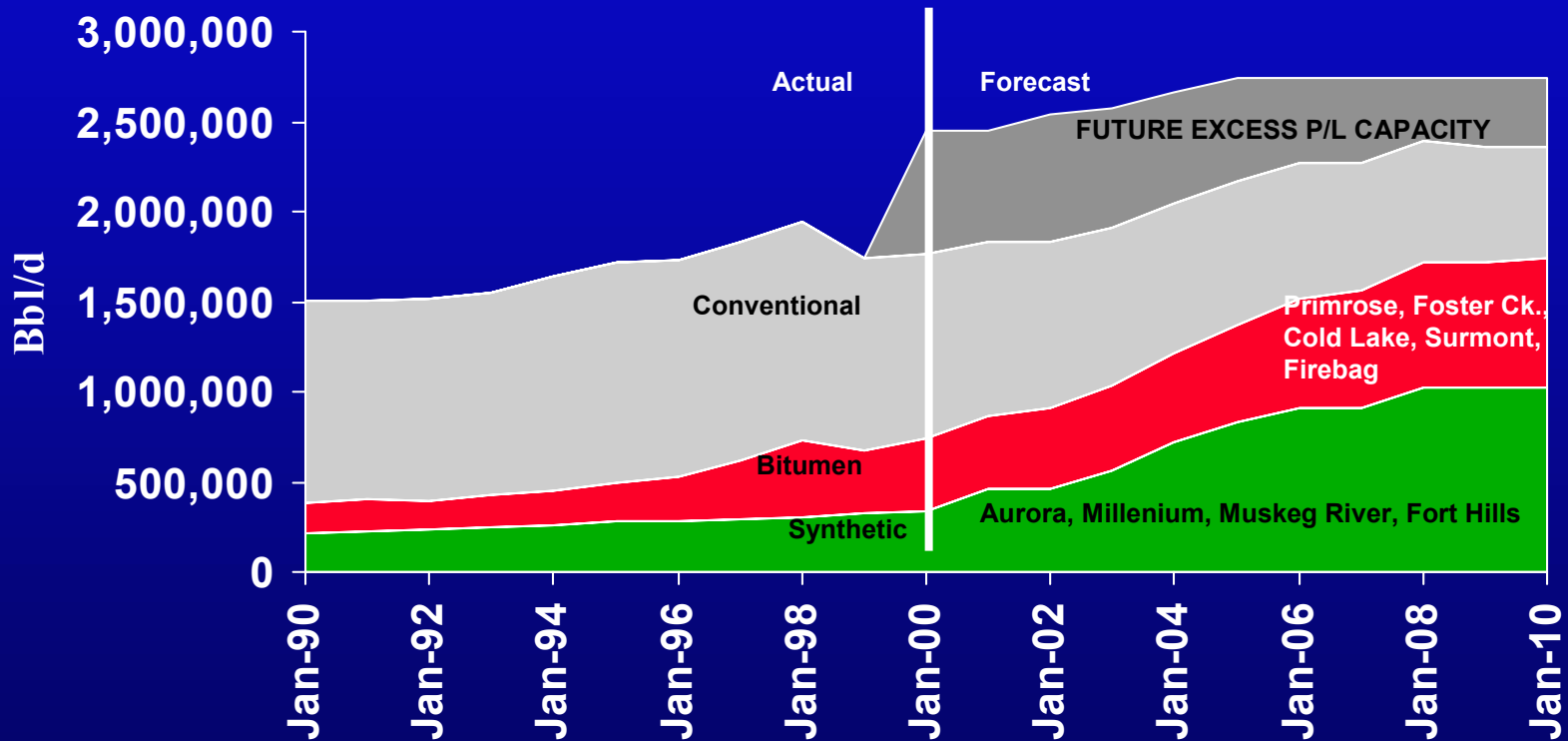
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Western Canadian Crude Production by Type (Including Synthetics)



Data Source: GeoOffice by international Datashare corporation

Western Canadian Crude Production by Type (Including Synthetics)



Data Source: GeoOffice by international Datashare corporation

Heavy Oil Differential Conclusions

- Though differentials are very wide currently we expect them to narrow over the winter but not to levels seen earlier this year.
- Supply will not be the issue - there are lots of heavy oil projects.
- Capital and operating costs will be the issue - especially natural gas costs.
- Future differentials will be highly dependent on refinery expansions - demand drive.

North American Natural Gas Markets

North American Gas Outlook

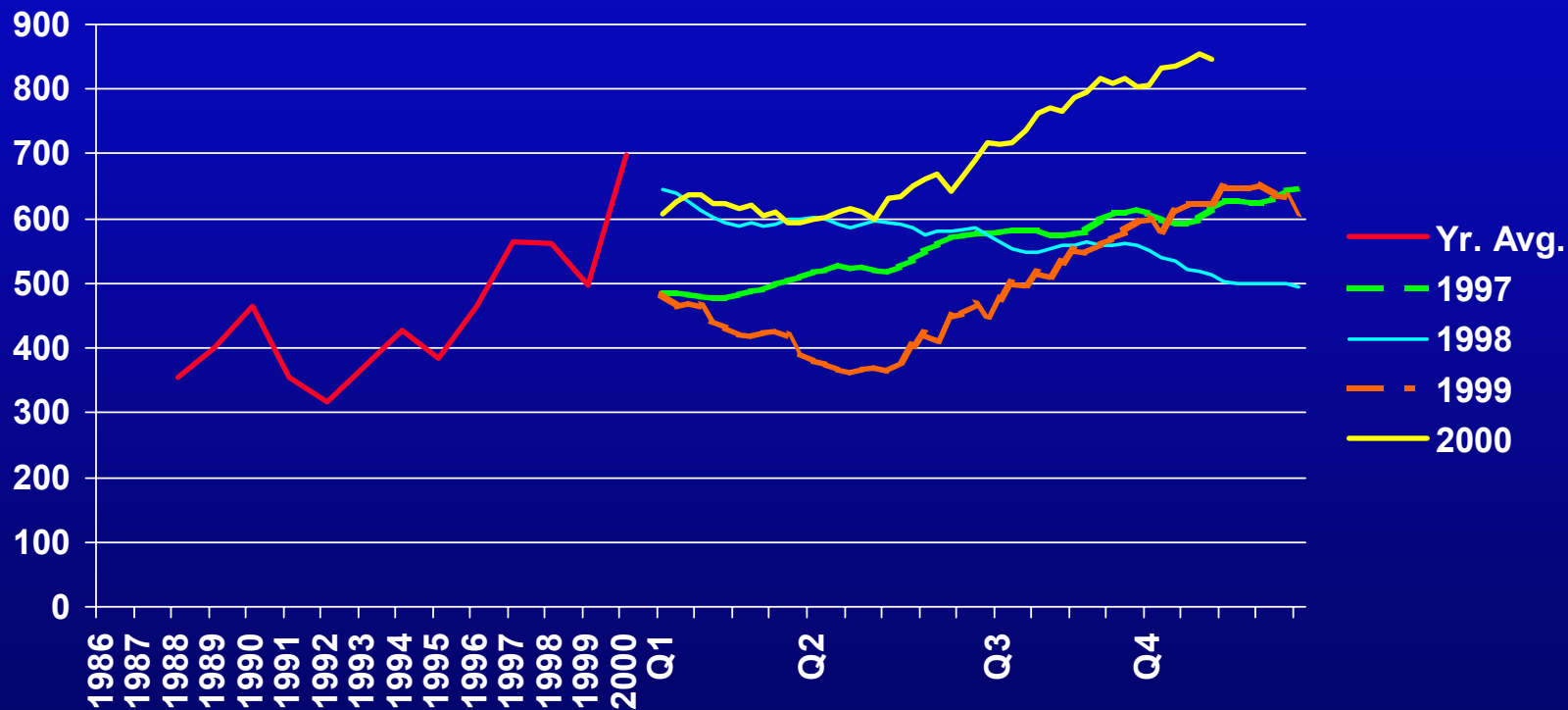
- The Issues:
 - Supply - below even our “pessimistic” expectations
- on both sides of the border
 - Demand - not as elastic as previously expected
 - Electricity - convergence happening faster than expected and it’s a larger and more complicated issue than previously expected

Natural Gas Production Response

- Underwhelming to date!
- Producers still fighting decline rates – especially in the United States.
- Exploratory content is still very low.
- The key will be capex programs targeted at natural gas for 2001.
- The pricing signals are there, the production response is not - so far.

Baker Hughes Active Rig Count

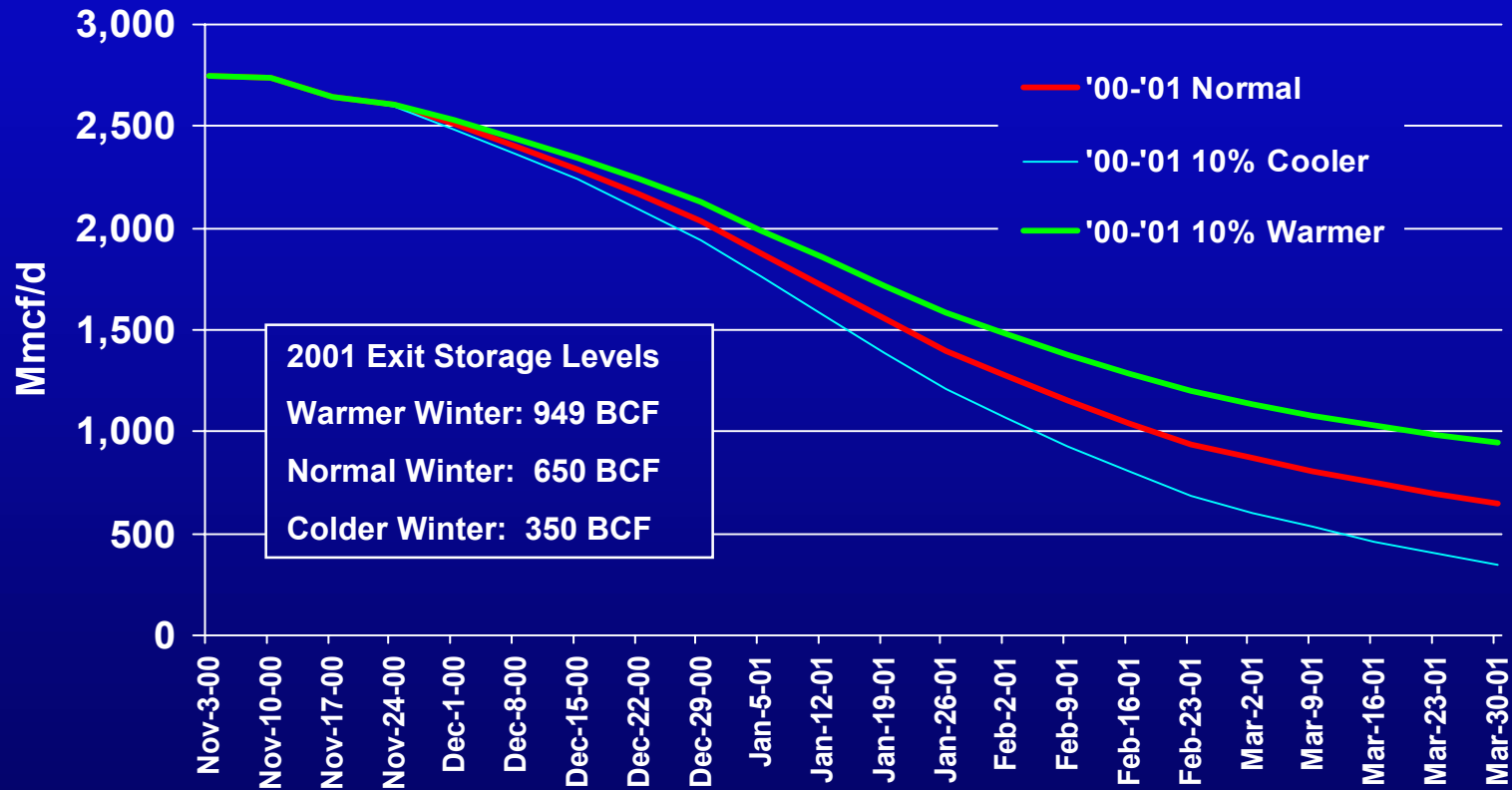
United States - Gas Rigs



Gas Demand Elasticity

- Nowhere near as elastic as one would assume or what we previously thought! Why? Significantly increased electricity demand along with all energy commodities at high prices simultaneously! There are minimal short-term alternatives. Electricity generation has taken up all demand and then some that has been given up by those who can not pass through higher gas costs - e.g. fertilizer !

Estimated US Natural Gas Storage Levels



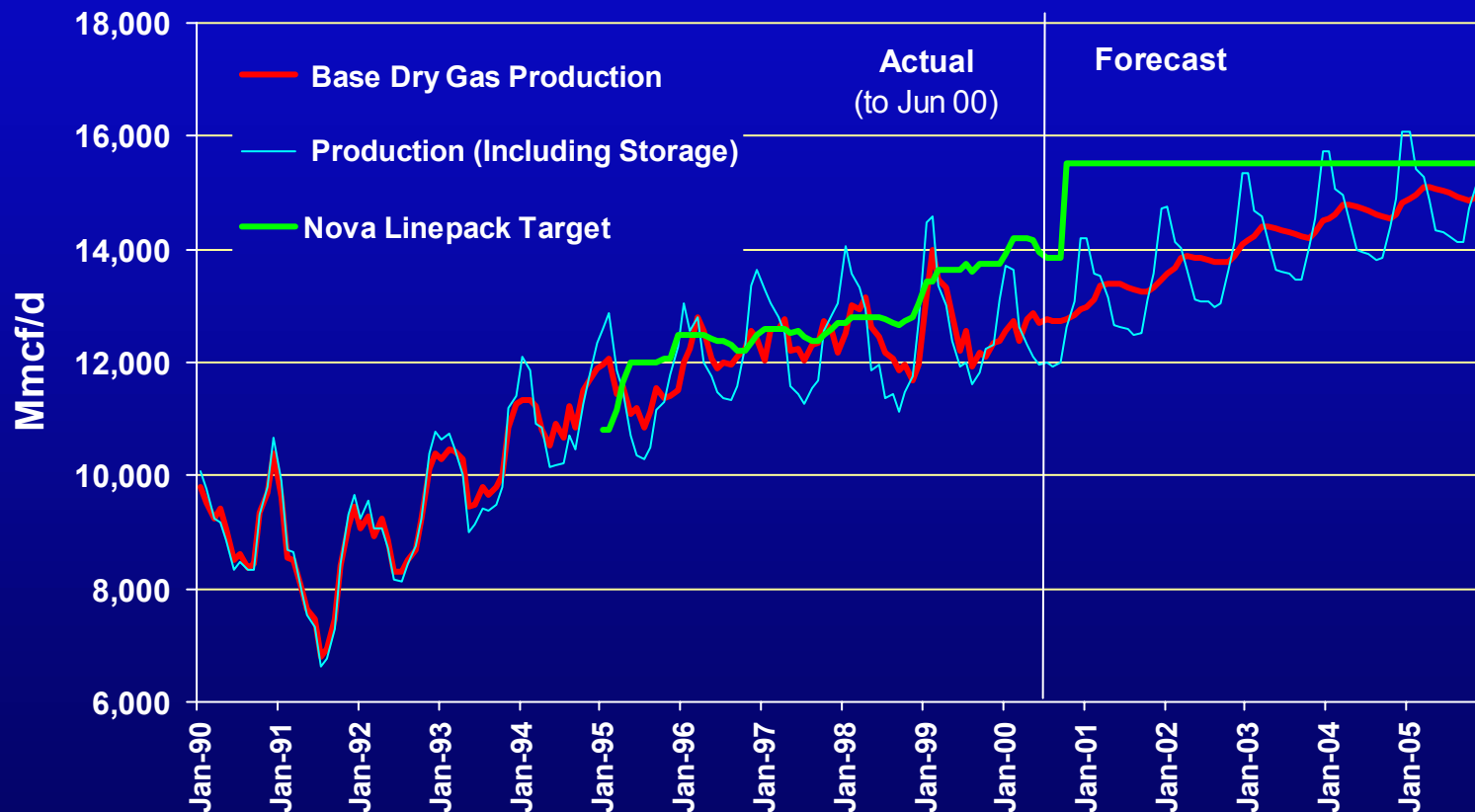
Coal & NGL Supply Issues

- Many coal fired electricity players have broken through emissions restrictions months ago – the economic rewards have been that attractive – but the day of reckoning is coming with regulators.
- A number of major electricity generators are now suggesting that coal projects - green field or rebuilds - require a natural gas price of US \$5.00 per Mmbtu or greater (\$0.75 higher than we previously thought)!
- LNG (Liquefied Natural Gas) new builds are expected to have similar economics.

Alberta Natural Gas Decline Rates

On-stream Year	Peak Production	Decline from Peak
1992	1,035	-79.9%
1993	2,419	-71.2%
1994	3,151	-72.4%
1995	2,641	-72.6%
1996	2,883	-67.5%
1997	3,247	-59.1%
1998	3,498	-48.5%
1999	3,054	-25.8%

Alberta: Production Available for Delivery (Raw Natural Gas Net of Dispositions)



Natural Gas Conclusions

- Though gas prices are up substantially, be prepared for further price increases. This winter could be ridiculous!
- The biggest risk - for the longer-term - is a colder than average winter which would erode natural gas supply confidence and may result in Government interference with natural market evolution.
- Time to become knowledgeable about sparks!

Industry Cash Flow Issues

Canadian Activity Expectations for 2000 and 2001

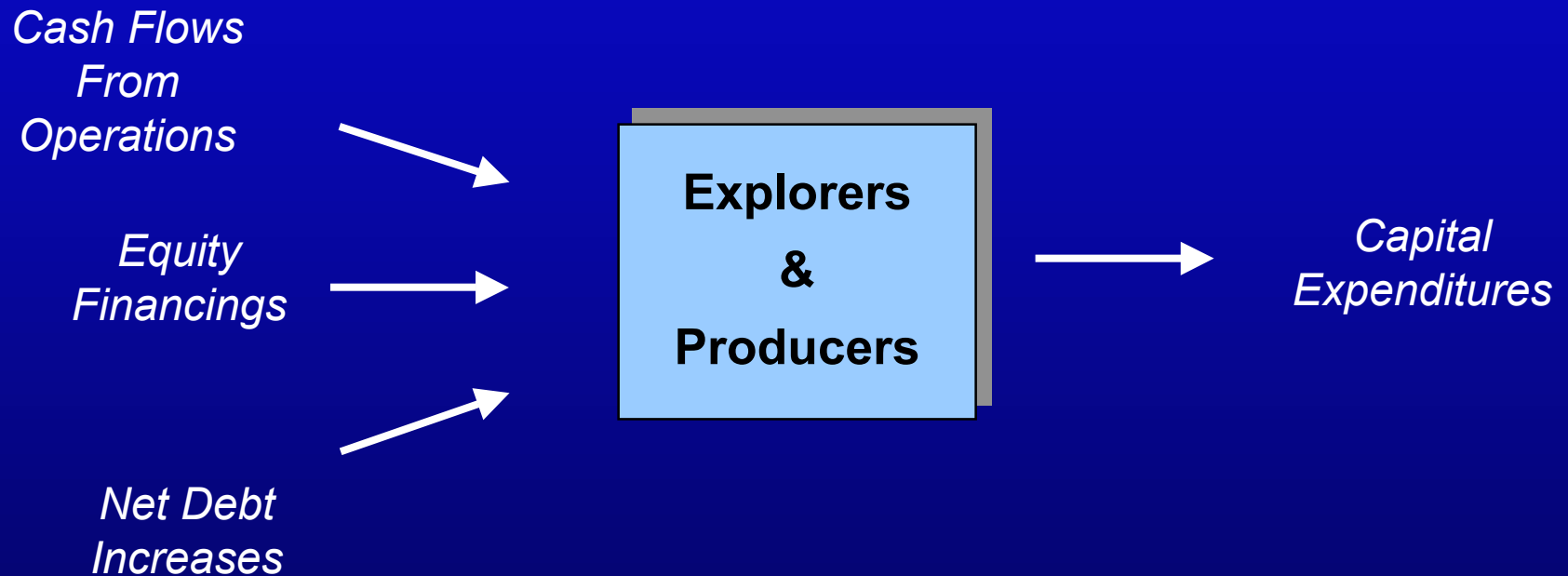
	1996	1997	1998	1999	2000e	2001e
<i>Cash Flows and Capital Expenditures in CDN \$Billions</i>						
Total Cash Flow from Operations	16.0	15.9	10.9	17.5	31.1	24.2
Total Net Capital Expenditures	19.1	27.5	16.9	15.4	24.3	28.0
Number of Wells Drilled	13,452	17,003	10,084	12,132	17,823	18,755
Gas as a Percent of Total Completions	37%	37%	66%	67%	57%	59%
Average Fleet Utilization (%)	59%	72%	45%	40%	56%	58%

Industry Cash Flow Conclusions

- At current prices the Producers are chewing through tax pools at a record pace.
- Consolidated tax horizon est. end Q1 2001
- Contrary to past the industry cannot spend its way away from pay current income taxes.
- Time to refocus away from cash flow to earnings, ROE, ROCE along with after tax net asset values.

Update of Canadian Oilfield Services Sector

FCC Drilling Activity Model



Comparison to Previous Cycle

Third Quarter 1997 Snapshot

- Well count expectations: “unlimited growth”.
- Well count supported by producers’ emphasis on volume growth.
- Limited capacity across sector:
 - upward pressure on pricing and margins
- Relatively unconsolidated sector:
 - lack of pricing discipline during downturn
- Valuations enhanced by limited competition for capital in market.

Comparison to Previous Cycle

Fourth Quarter 2000 Snapshot

- Cash taxes materially reducing producers' cash flow.
- Well count constrained by increased producer emphasis on returns (EPS, ROE, ROCE).
- Well count expectations: capped by Producers' intellectual horsepower.
- Sufficient capacity in basin to handle activity:
 - reduced pricing pressure vs. previous peak

Comparison to Previous Cycle

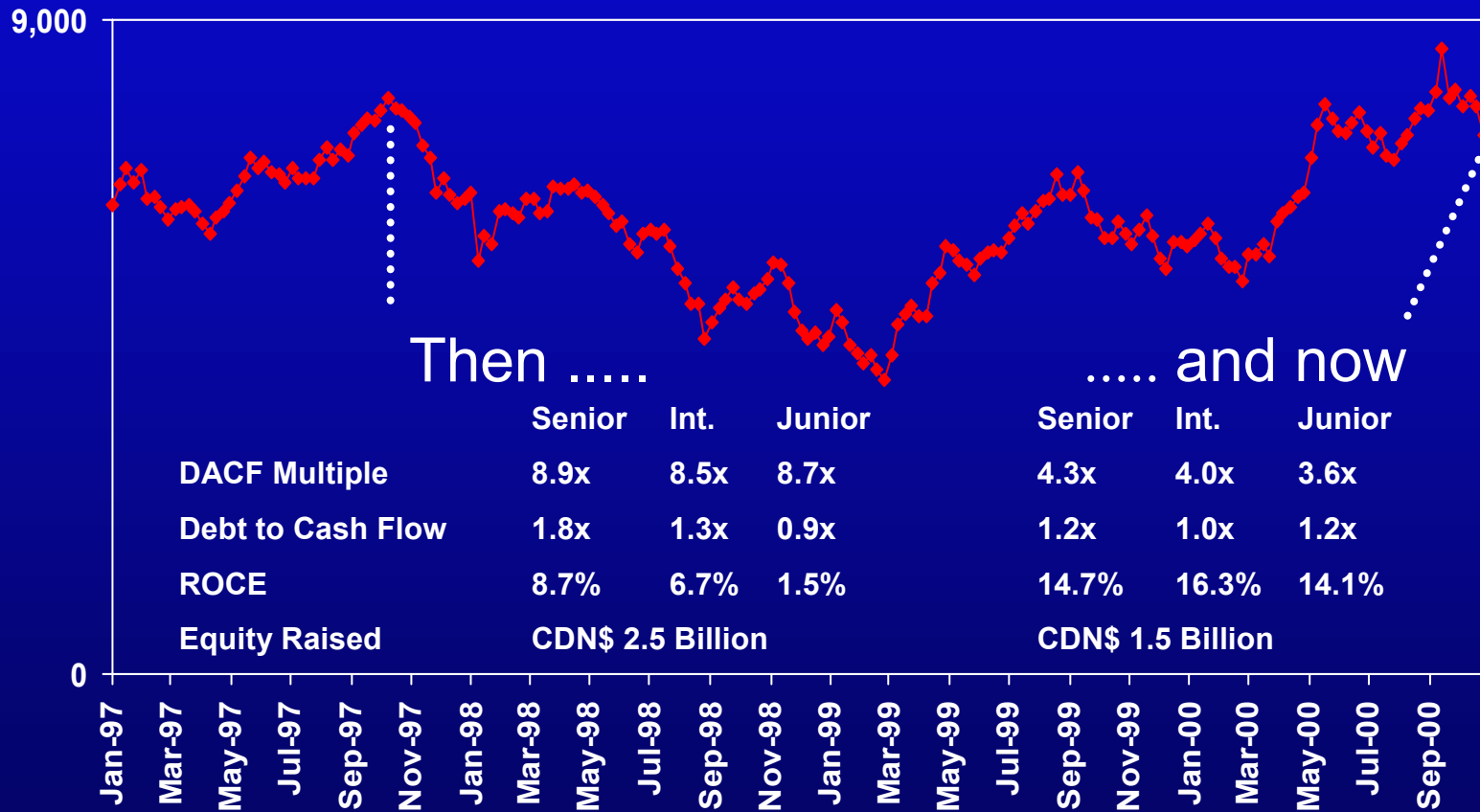
Fourth Quarter 2000 Snapshot (Continued)

- Increased level of service sector consolidation:
 - improved pricing discipline going forward
- View that Western Canada possesses relatively attractive upside has garnered increased U.S. attention.
- Valuations dampened by increased competition for capital in market.

Oil & Gas Sector Equity Market Overview

TSE Oil and Gas Index

Relative Performance Metrics



1997 Peak Versus Today

- Valuations were high with little differentiation between the tried and true and junior producers.
- Today, stocks are at the low end of historical valuation ranges with a premium for size and liquidity.
- Significant consolidation has occurred; the strong have survived.
- Debt levels are manageable, companies have net redeemed shares.
- Industry returns are exceeding the cost of capital.

Valuation Parameters

- Where have we been ?
 - Historical trading range between 5.1x P/CF to 9.1x P/CF
- Where are we now ?
 - Index at 4.6x P/CF using 2001 consensus estimates
- What would a 1x multiple shift in P/CF imply ?
 - The TSE Oil and Gas Index would reach 9,500 points or over 25% from current levels

Questions?