

Discovering Our Energy Future

New Zealand Oil & Gas Limited

The Oil & Gas Landscape

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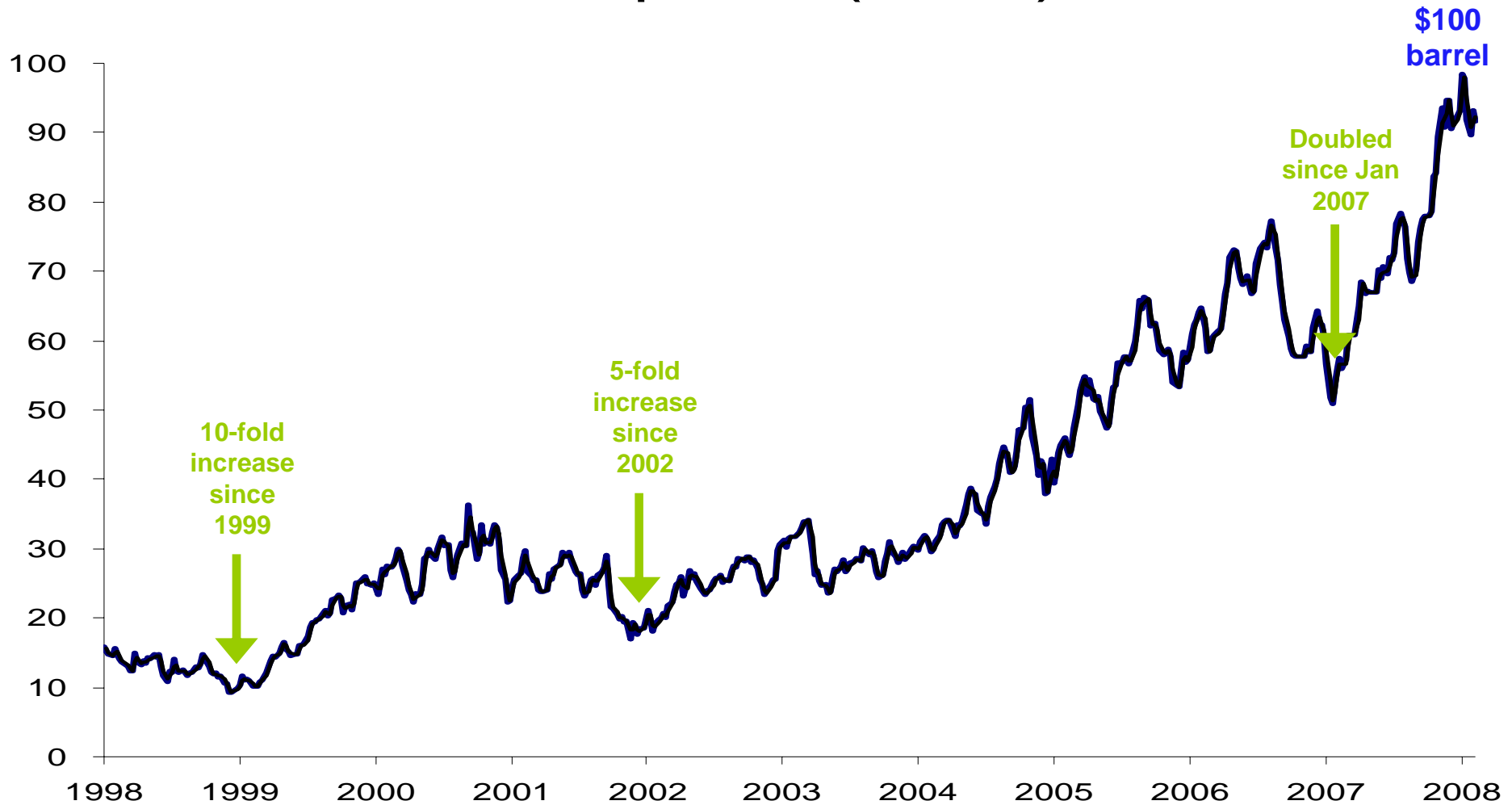
Key Information Sources:

International Energy Agency: World Energy Outlook, Oil Market Reports

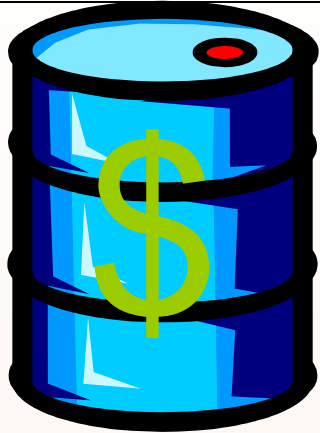
National Petroleum Council (USA): Facing the Hard Truths about Energy

International Oil Price

Brent Spot Price (USD/bbl)



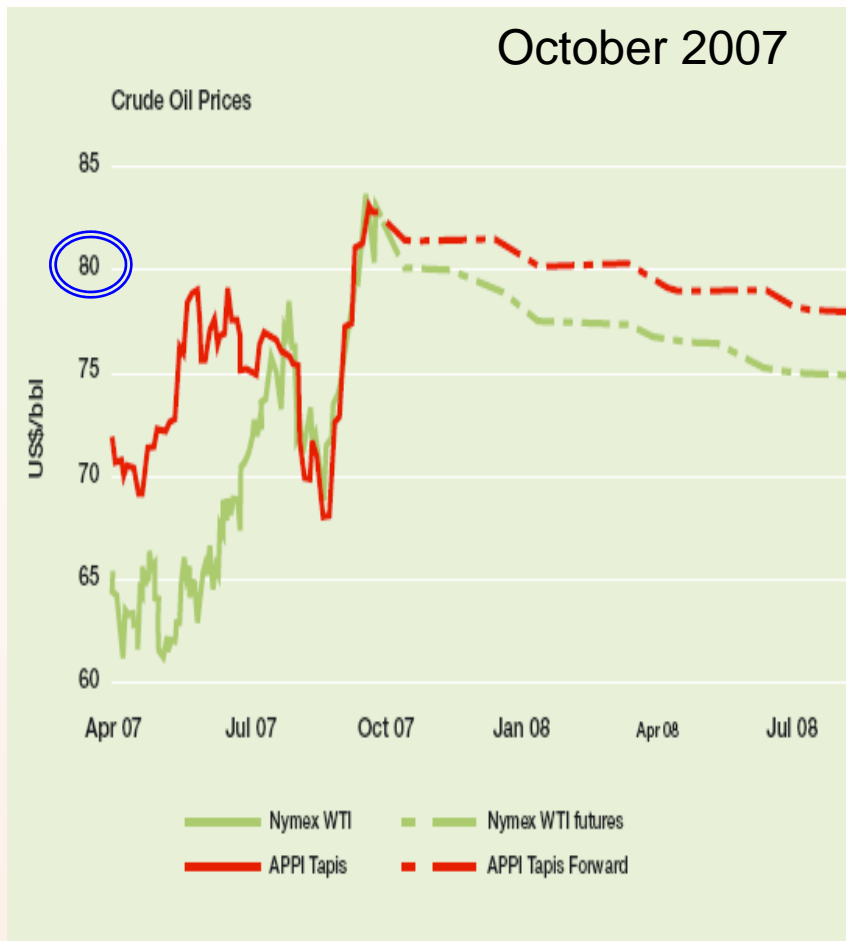
Factors Influencing Oil Prices



= Marginal production cost + product
tightness + weather + geopolitics +
refinery capacity + speculation + ...

But no one can break the analysis down
into its component parts....

Oil Price Predictions – A Very Imprecise Science



Demand Side Assessment

- Increasing demand as economies and populations expand
- Energy is essential to the economic activity that sustains and improves the quality of life
- By 2030 over 80% of the world's population will live in the developing world
 - Developing countries now consume only 40% of the world's energy
 - Many reaching the point where individual wealth and consumption accelerates
- Demand driven by industry, transport, heating/cooking, commercial use – by improved standards of living



Demand Examples

- China is motoring
 - Chinese vehicle fleet expected to increase 7-fold to 270 million by 2030
- Argentinan economic growth
 - Oil demand growing at over 10%pa
- India's Nano car – US\$2,500
 - Millions switching from bicycle to motor vehicle
 - Nano sales target – 500,000 a year



Demand Examples



old



Demand – Short Term

- China's oil demand expected to grow 5.9% in 2008
 - China expected to overtake USA as world's largest energy consumer soon after 2010
- India's oil demand expected to grow 3.9% in 2008
- World oil demand expected to grow 2.3% in 2008

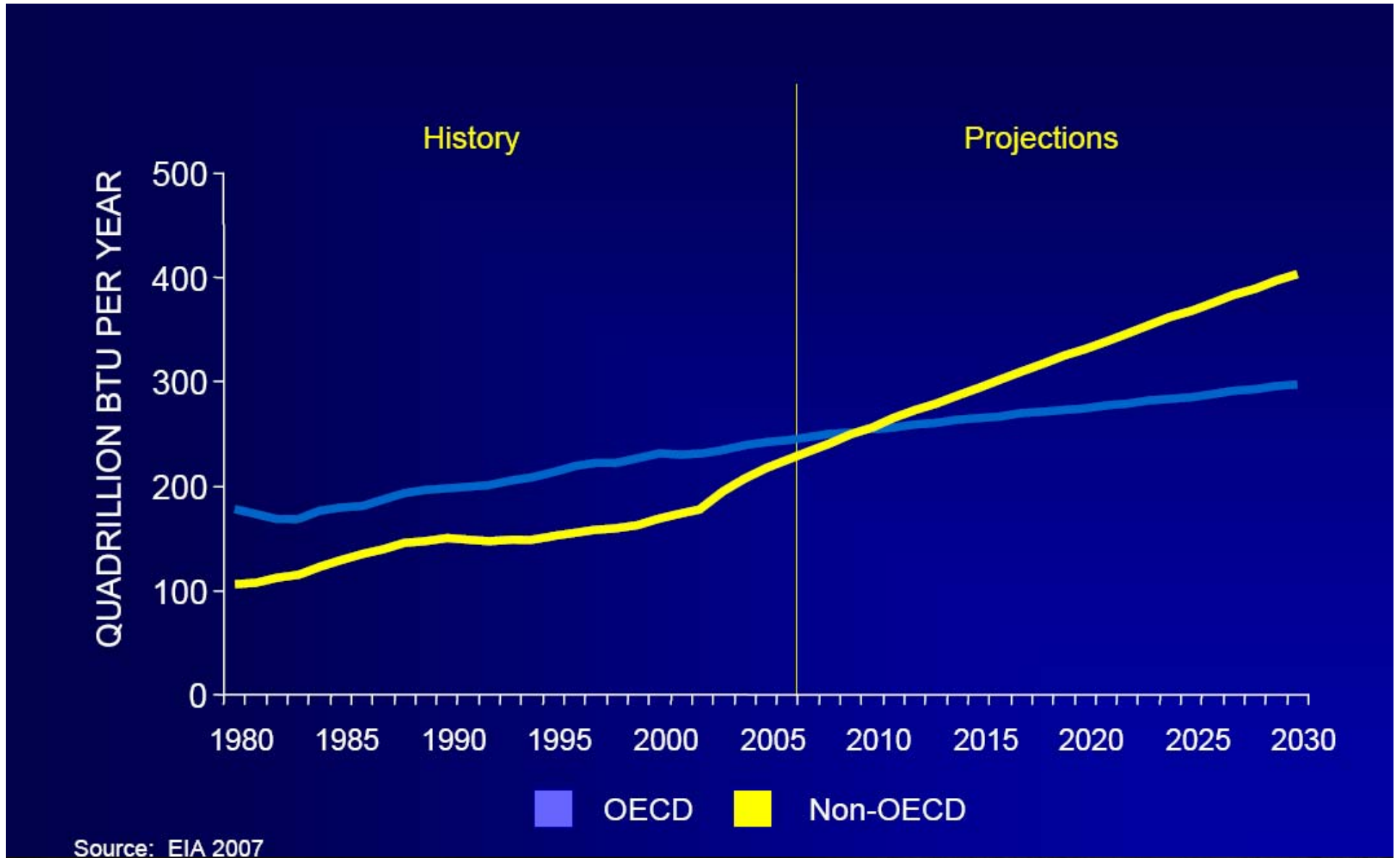


Demand – Long Term

- Global oil demand predicted to increase by between 40% and 70% by 2030
 - From 86 mmbbls/day to between 120 and 138 mmbbls/day
 - A faster growth rate than over the last 25 years
 - Natural gas demand to increase by even more
- IEA's Alternative Policy Scenario– all government climate change policies are implemented:
 - Global oil demand still 23% higher by 2030 – 106 mmbbls/day
- Developing countries driving the growth



Demand – Long Term



Supply Side Assessment

- The world is well-endowed with hydrocarbons
 - Natural endowment assessments indicate very large in-place volumes and resource potential: several times current reserve estimates
 - Key issue at present is not ‘endowment’ but ‘producibility’
- Growing set of global uncertainties
 - Production limitations
 - Environmental constraints
 - Infrastructure requirements
 - Geopolitical alignments
- The resource is there – can we use it?



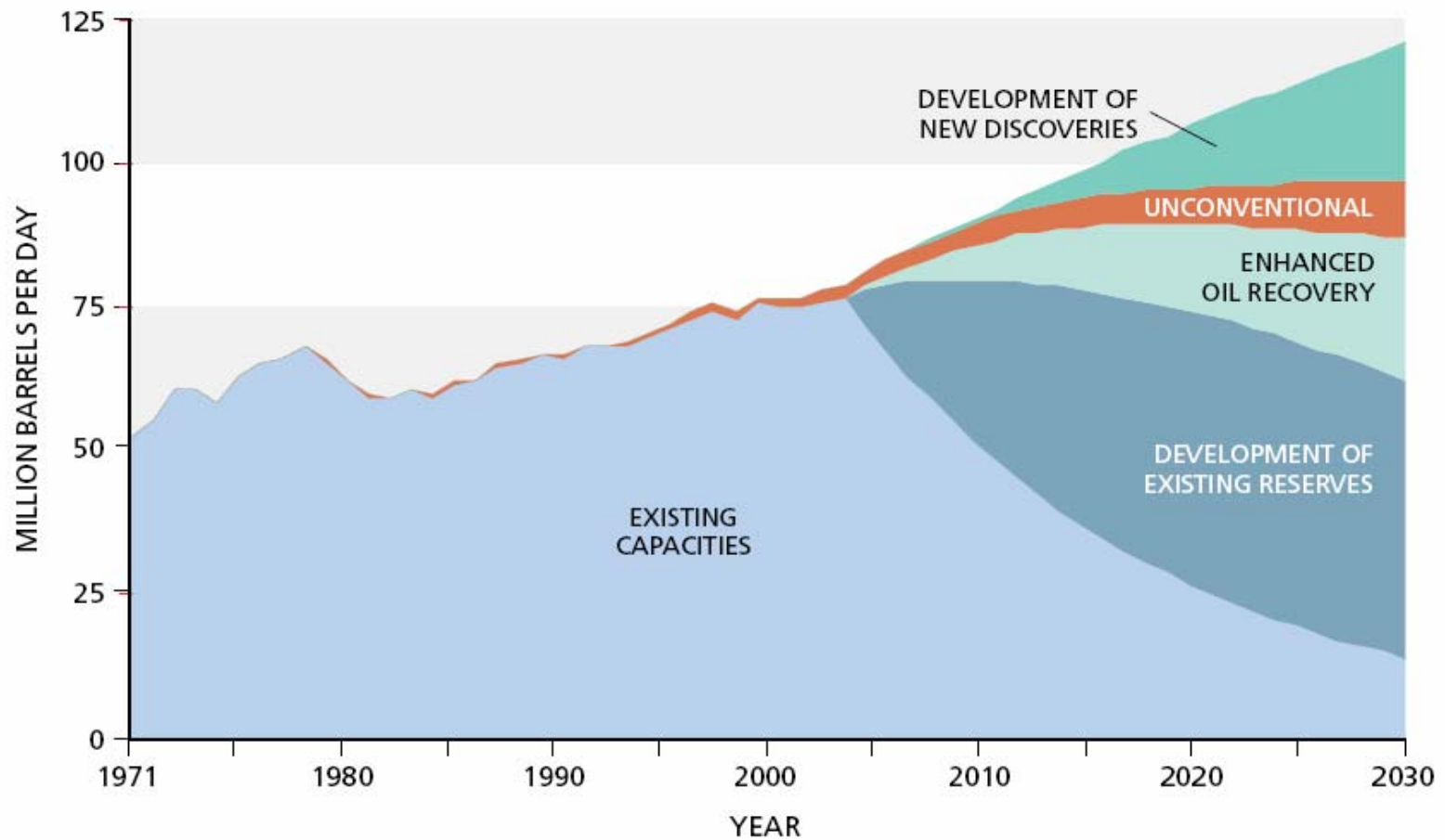
Supply Side Assessment

- Fossil fuels will remain largest source of energy
 - Expected growth in Biomass and other renewables
 - But in 2030 fossil fuels will continue to provide over 80% of global energy supply
- Conventional oil sources will dominate
 - Unconventional oil will provide under 10% of supply



Supply Side Assessment

Total Liquids Supply



Source: IEA, *World Energy Outlook 2004*.

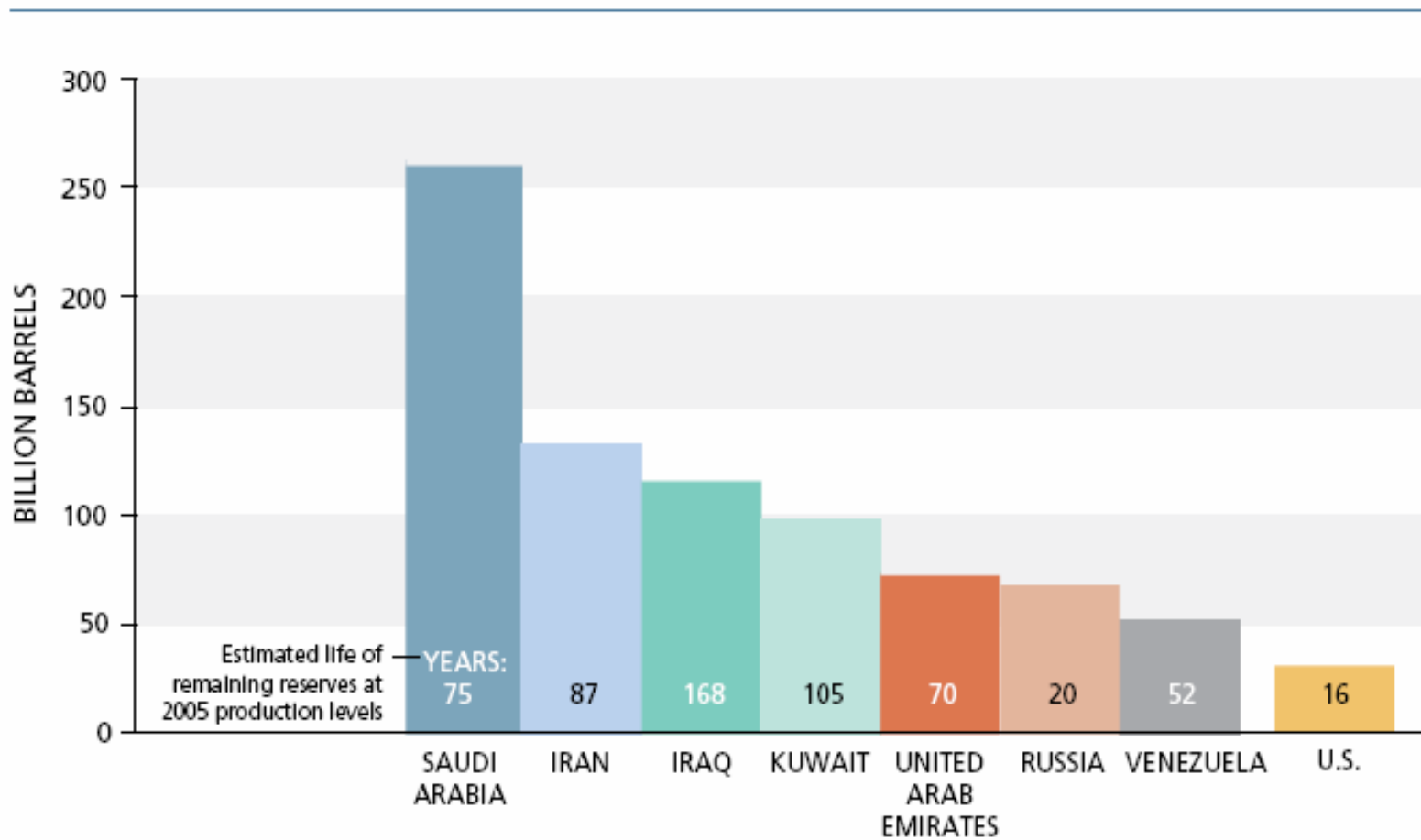
Supply Side Assessment

- Increasing concentration of resources in a few countries
 - OPEC's share of world supply will increase from 42% now, to 52% in 2030
 - Growing power of National Oil Companies



Supply Side Assessment

Discovered Remaining Oil Reserves



Supply Side Assessment

- Capacity of E&P industry to sustain growing production rates is uncertain
 - Investment of US\$4.3 trillion needed by 2030
 - Much of the world's existing oil production will need to be replaced by 2030
- Increasing international oil trade
 - Developing countries will become major oil importers
 - Trade security a major issue



Supply - Vulnerable Supply Points



Supply Side Assessment

- The risks to supply are accumulating:
 - Nationalism or protectionism may remove resources from the market
 - Increasing concentration of existing reserves in a few hands
 - New oil & gas sources more difficult to access
 - Technology requirements increasingly complex
 - Massive investment needed
 - Human resources stretched
 - Environmental constraints evolving and indeterminate

What does this mean for oil prices?

- Economically disruptive supply shortfalls likely to occur
- Increased demand will amplify effects of short-term events
- World is moving from demand-driven to supply-constrained system

Unless the world economy collapses, there will be strong upward pressure on oil prices

Implications for New Zealand

- New Zealand relatively under-explored
 - Too far away
 - Small to medium resource potential in producing basin
 - Bigger potential in frontier basins but high risk/high costs
- Circumstances changing rapidly
 - Marginal production costs have risen
 - No 'easy hits' left
 - Technology advances open up new opportunities
 - NZ offers a safe, secure location
- Excellent prospects for NZ exploration



Conclusion – Oil’s Role in our “Greener” Future

- The world will use more oil, not less, driven principally by economic growth in developing countries
- Oil & gas (and coal) will continue to be the dominant energy sources
- Increasing supply risks and uncertainties
- New Zealand will be increasingly attractive as an exploration location