

International Oil Market Outlook: Trends in Saudi Arabia Paramount

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International Oil Market Drivers

■ Fundamentals

- ◆ Erosion in OPEC spare capacity
- ◆ Higher price volatility above \$25 encourages speculation on the upside
- ◆ More bearish outlook for rest of year and into 2005

■ Psychological Factors

- ◆ Terror premium
- ◆ Stability in Saudi Arabia, Iraq
- ◆ OPEC policy

OPEC production capacity has fallen, not increased, since 1979

Opec Production and Spare Capacity, 1979-2003 (in mmb/d)

Member Country	1979	1983	1990	1997	1998	2000	2001	2003
Saudi Arabia	10.84	11.30	8.00	9.65	9.80	9.50	9.90	10.15
Iran	7.00	3.00	3.10	3.70	3.70	3.75	3.80	3.80
Iraq	4.00	1.50	3.60	2.30	2.80	2.90	3.05	2.20
Kuwait*	3.34	2.80	2.40	2.40	2.40	2.40	2.40	2.50
UAE	2.50	2.90	2.20	2.40	2.40	2.40	2.45	2.50
Qatar	0.65	0.65	0.40	0.71	0.72	0.73	0.75	0.75
Venezuela	2.40	2.50	2.60	3.45	3.30	2.98	3.10	2.50
Nigeria	2.50	2.40	1.80	2.00	2.05	2.10	2.30	2.30
Indonesia	1.80	1.60	1.25	1.40	1.35	1.35	1.30	1.15
Libya	2.50	2.00	1.50	1.45	1.45	1.45	1.45	1.45
Algeria	1.23	1.10	0.75	0.88	0.88	0.88	0.88	1.15
Total	38.76	31.75	27.60	30.34	30.85	30.44	31.38	30.45
Call on Opec	34.01	16.65	22.20	27.59	25.85	30.04	28.23	29.20
Spare Capacity	4.75	15.10	5.40	2.75	5.00	0.40	3.15	1.25

Opec can replace all Iraqi/Kuwait oil in 1990

Economic boom erodes capacity in 1997

Demand bumps up against capacity

Fundamental Outlook

- Capacity expansions within OPEC and expected growth within non-OPEC countries could contribute to a gradual softening of prices in 2005.
- Depends on
 - ◆ Oil demand trends.
 - ◆ Improvements in stability in the Persian Gulf.

Projected OPEC Capacity

Country	2003	2005	2010 *
Saudi Arabia	10.15	10.50	11.0
Iran	3.80	4.10	5.0
Iraq	2.3	2.7	4.5
Kuwait	2.4	2.6	3.0
UAE	2.5	2.5	2.5
Qatar	0.75	0.80	0.80
Venezuela	2.5	2.6	3.5
Nigeria	2.3	2.7	3.0
Indonesia	1.00	1.00	0.5
Libya	1.45	1.3	2.0
Algeria	1.15	1.6	1.5
TOTAL	30.3	32.4	34.3

*optimistic scenario

Growth in 2005 non-Opec supply is a critical factor to fundamentals

How robust will Russia be? Depends on politics, taxes, not geology

When does the Baku-Ceyhan line open ? (Scheduled May 2005)

2005
NON-OPEC SUPPLY OUTLOOK

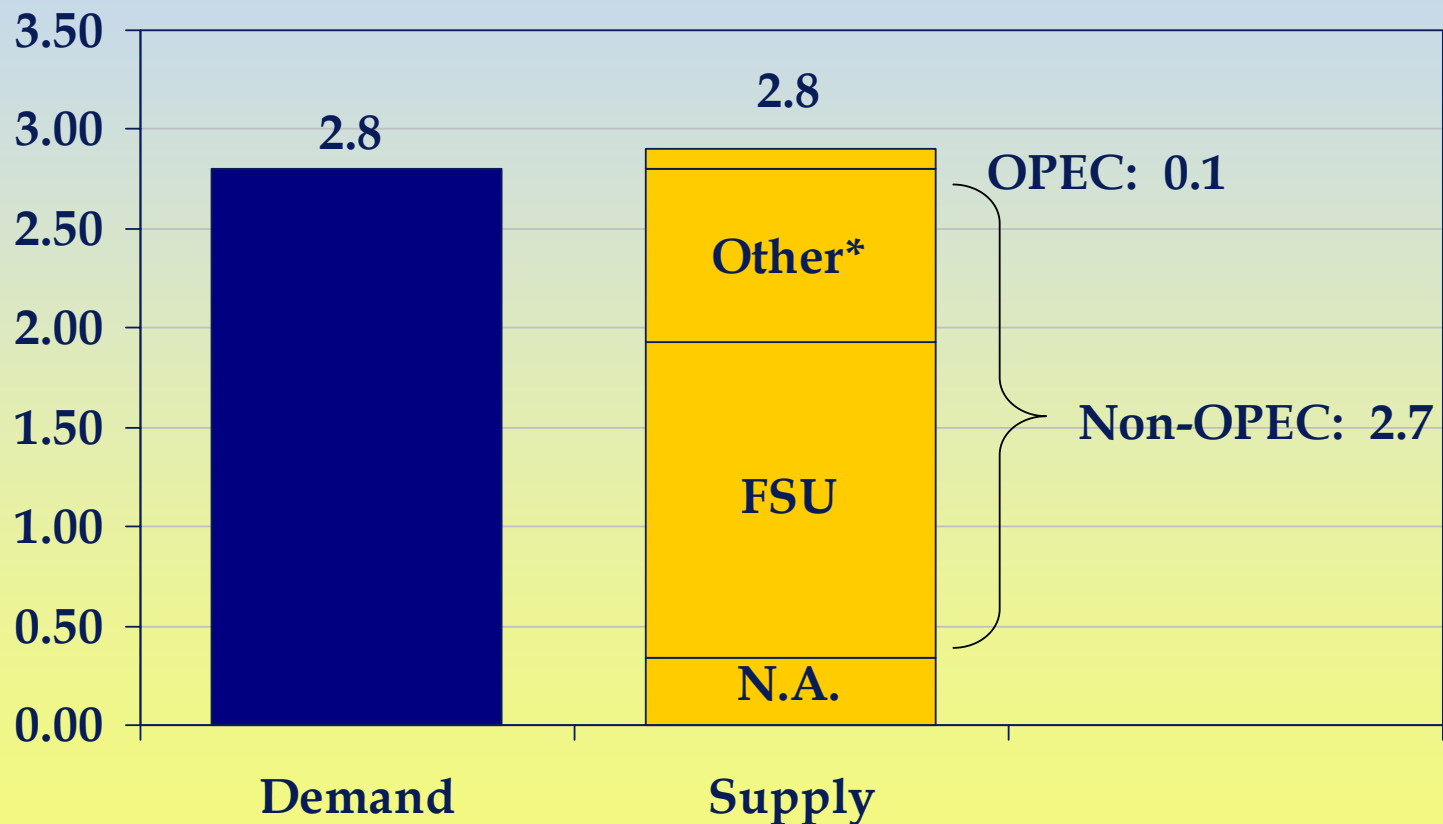
	Base	High	Low
Canada	0.12	0.20	0.08
Mexico	0.15	0.20	0.00
US	0.15	0.15	-0.15
Norway	-0.05	0.00	-0.15
UK	-0.12	0.00	-0.20
Denmar	-0.02	0.00	-0.03
Azerbai	0.10	0.30	0.00
Kazakhstan	0.15	0.25	0.00
Russia	0.40	0.80	0.25
Brazil	0.23	0.30	0.10
Colomb	-0.02	0.00	-0.05
Ecuador	-0.02	0.03	-0.03
Angola	0.30	0.40	0.20
Chad	0.05	0.07	0.00
Egypt	-0.04	0.00	0.05
Eq. Guir	0.00	0.15	-0.05
Gabon	-0.02	0.00	-0.03
Total	1.36	2.85	-0.01

Will W. African developments come in as forecast?

Lower Oil Price Scenario

World Oil Supply/Demand Balance Typical Forecast 2002-2005

Cumulative Growth in MMBD for Full Period



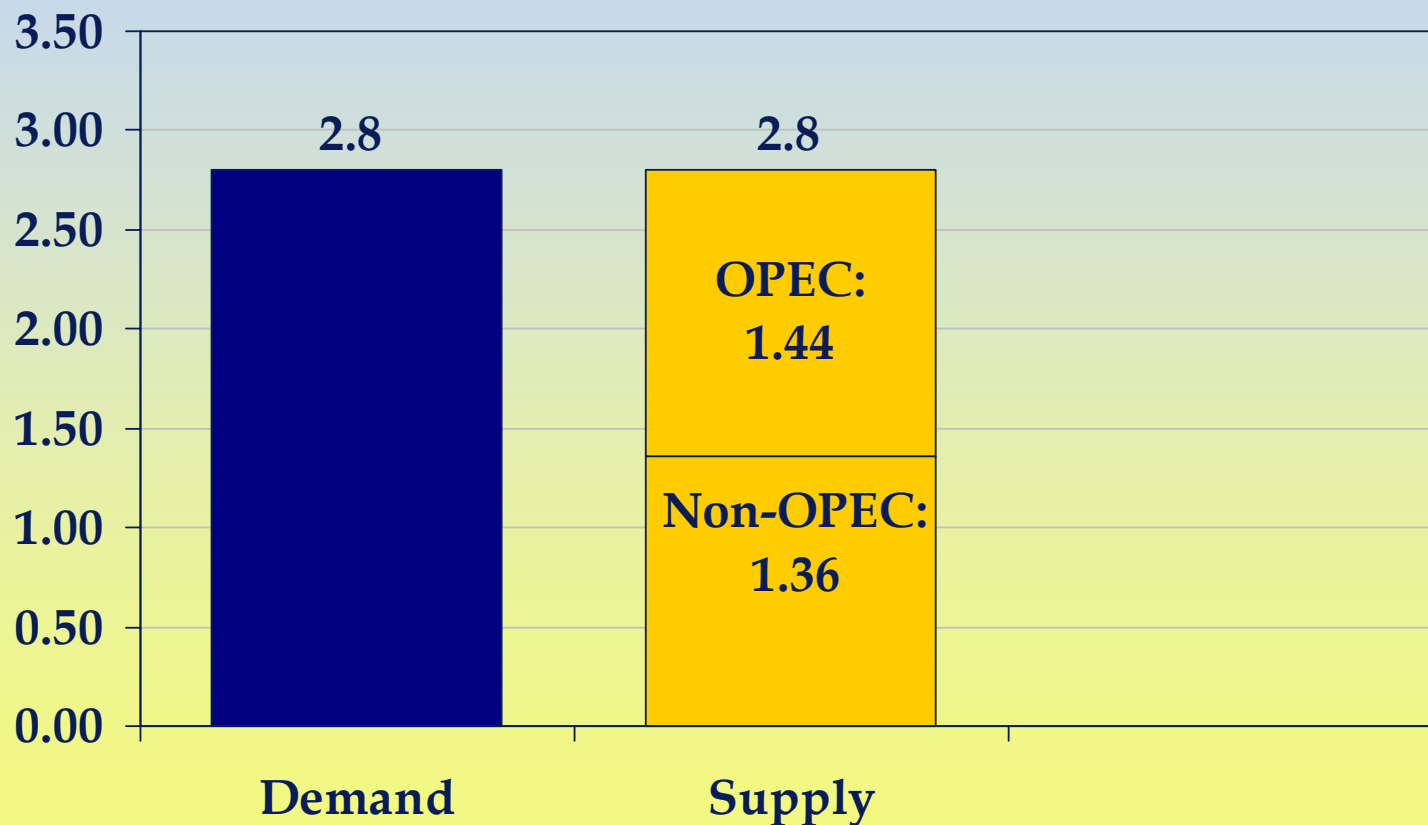
* Non-OPEC other supply includes processes gain

** OPEC supply is incremental production including NGLs

Strong Oil Price Scenario

World Oil Supply/Demand Balance Median Forecast 2002-2005.

Cumulative Growth in MMBD for Full Period



* Non-OPEC other supply includes processes gain

** OPEC supply is incremental production including NGLs

Psychological Factors

- Psychological factors are likely to outweigh market fundamentals
- Stability in Persian Gulf will be a key driver to oil prices, especially conditions in Saudi Arabia
- Any increase in frequency or scale of terror attacks on energy facilities will also set a psychological tone to oil markets

Saudi Arabia

From Osama Bin Laden's Letter to the
American People:

"You steal our wealth and oil at paltry prices because of your international influence and military threats. This theft is indeed the biggest theft ever witnessed by mankind in the history of the world."

--Osama Bin Laden

Energy Facilities Are Being Targeted

- March 2003, armed hijackers commandeer a chemical tanker off the coast of Sumatra, Indonesia; reports of terrorists wanting to learn to pilot vessels and learn diving
- Singapore authorities arrest two dozen members of the Jemaah Islamiyah network; confessions of two aborted terrorist attacks on supertankers in the Malacca Straits; wanted to sink a tanker in the Phillips channel and block international commerce; were planning attack on Jurong Island petchem hub
- Bombing of French oil tanker Limburg off coast of Yemen
- June 2002 al-Qaeda operatives arrested in Morocco, suspected of plotting raids on US and British tankers in the Strait of Gibraltar
- May 2002, cell phone detonated explosive device attached to tanker truck in Israel's central fuel and gas depot north of Tel Aviv
- Summer 2002, group of Saudis arrested for involvement in sabotage plot against Saudi oil facilities
- Spring 2004 attack at industrial complex at Saudi Red Sea port of Yanbu
- May 2004 bloody attack on residential compound in Khobar, Saudi Arabia shakes expatriate community, including those working in oil industry, exodus of personnel begins

Saudi Arabia

- Stability in Saudi Arabia is the driving factor behind the future of oil price volatility.
- Current demographic trends will encourage Saudi Arabia to seek higher oil prices for domestic political reasons.
 - ◆ Per capita income has fallen since 1980 and is expected to continue.
 - ◆ The kingdom will need increasing amounts of money to meet basic social services.

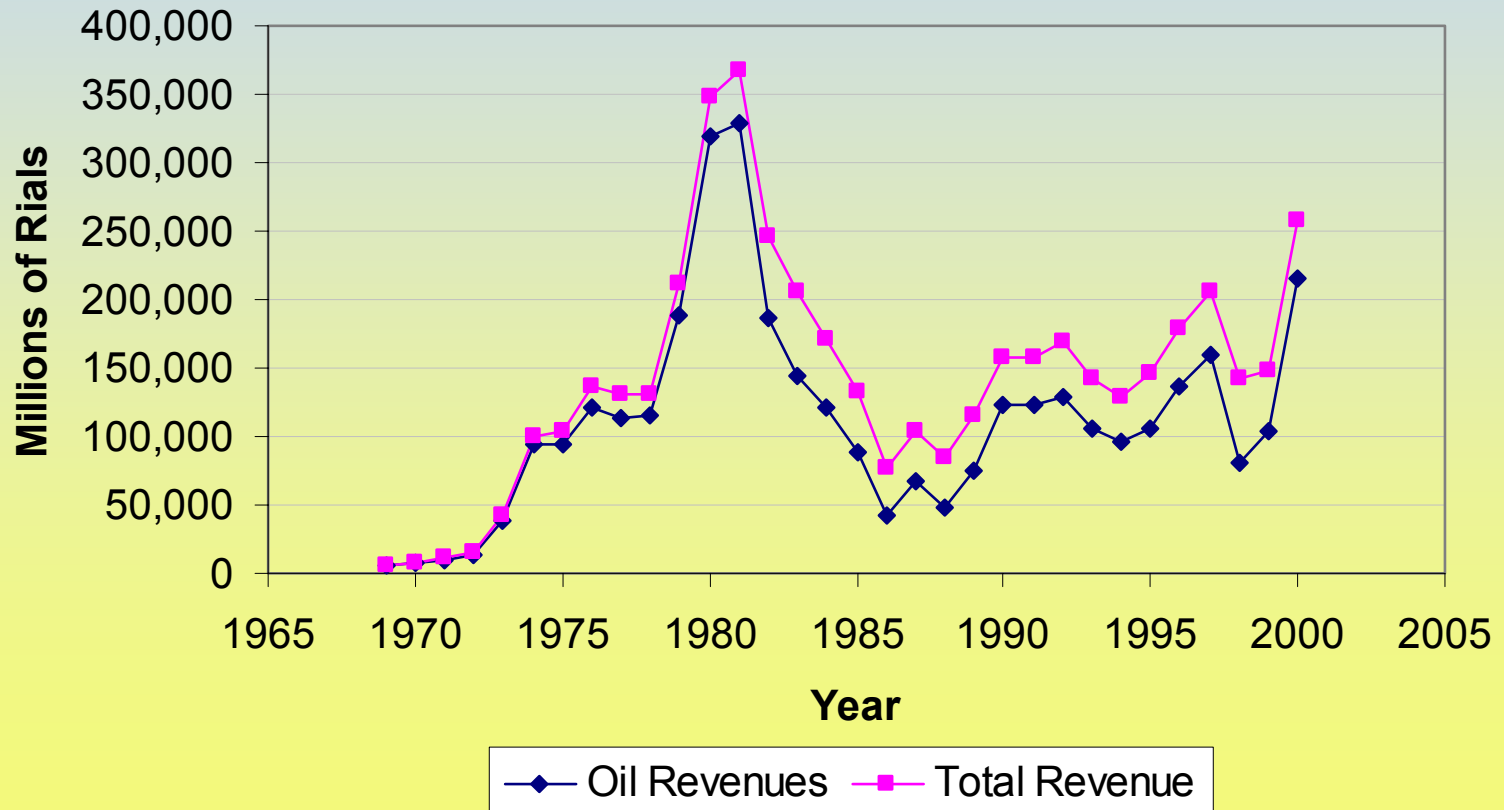
Saudi Economy: Trends

- GDP grew rapidly in the earlier period of increasing oil prices, fell during the 1980s and then rose very modestly in the 90s. Growth rates for these periods are: 10.6% per annum for 1970-80; -0.2% for 1980-90 and 1.6% from 1990-2000.
- Growth in per capita GDP was, of course lower than growth in total GDP since population has been growing rapidly. Despite almost a doubling of per capita income from 1970 to 1980, per capita GDP has declined by an average of .1% per annum over the period 1965-99. From a peak in 1980, per capita GDP had fallen by close to 40% by 2000.

Oil Revenues Critical to Saudi Government Revenues

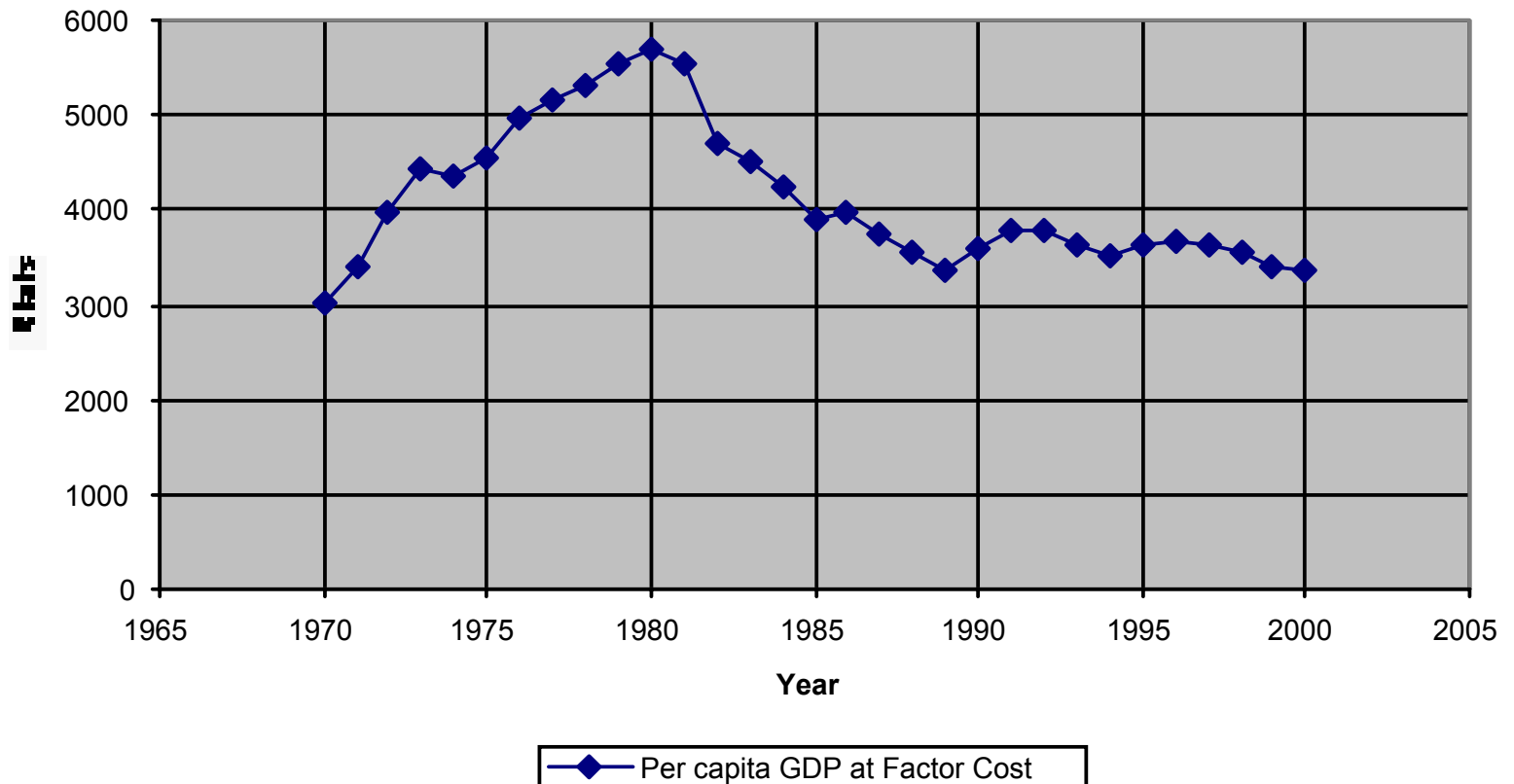
Diversification not viewed as a significant option

Figure 4: Saudi Government Revenues



Saudi Per Capita Income Falling

Figure 2: Saudi Per Capita Income in Constant 1970 Prices



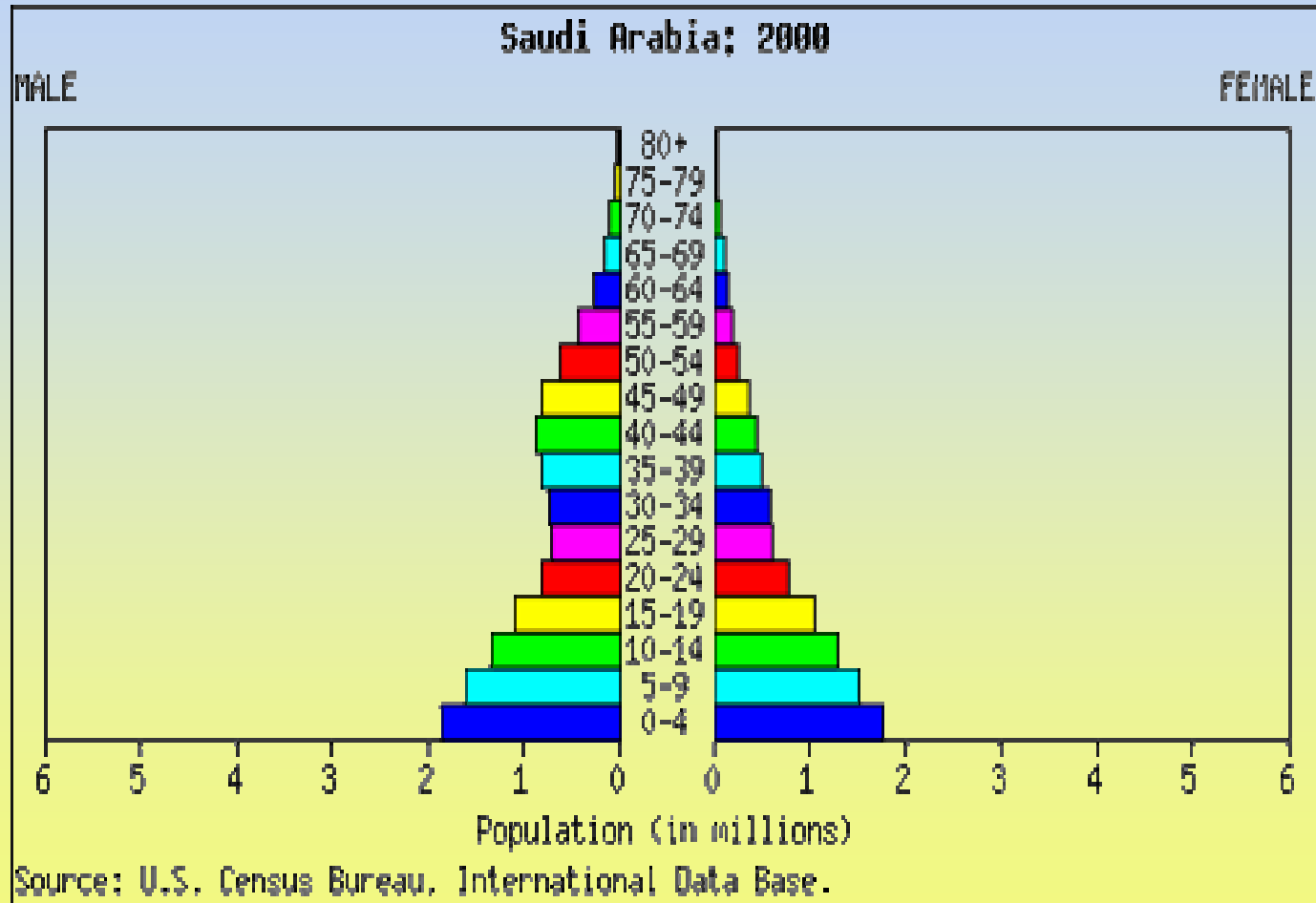
Saudi Economy: The Politics of Moving Backwards

- 2003 oil prices topped 1983 nominal price levels, with oil revenues \$20 billion higher than 2002 but dollar depreciation a offsetting factor
- Saudis enjoyed a \$12 billion government budget surplus and GDP growth over 6% in 2003; Foreign assets up \$17.5 bil to \$59.3bil
- Still, political pressure remains severe despite the rising revenues: social petitions; demonstrations; terrorist shoot-outs and arrests
- Growing pessimism about the Kingdom's economic future; generations expecting continued declines in economic prosperity; there is no getting back to early 1980s wealth
- Per capita income rose to only \$9,275 in 2003, up from \$7,502 in 1998, but well below the \$30,000 plus of the early 1980s

Saudi Economy: The Politics of Moving Backwards (cont.)

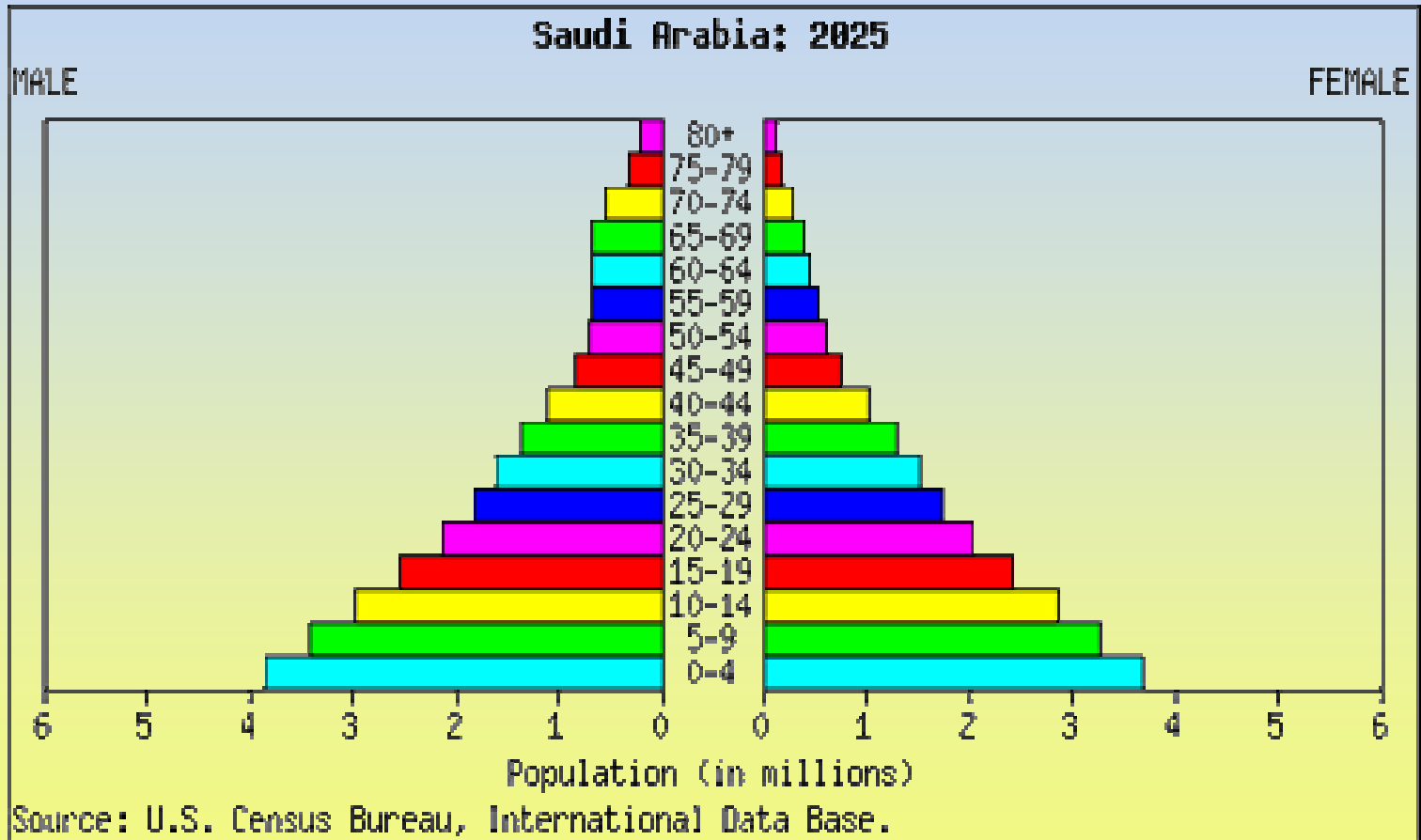
- Oil sector only employs less than 2% of the total labor force
- Unemployment: 13% of the male Saudi population
- Pressure on Saudi government to produce higher oil revenues since even staying the same produces drop in per capita income
- Bin Laden called in 1996 for higher returns for national resources; \$125 oil?
- Public nationalism: Greater pluralism/democratization equals less accommodation for the West?

Saudi Population 2000



Saudi population 2025

U.S. Census Bureau Projections



Saudi Arabia

- The Saudi response.
 - ◆ Increased 2004 budgetary spending.
 - ☞ Education and vocational training by 87%.
 - ☞ Social welfare by 45%.
 - ◆ Crown Prince Abdullah has supported
 - ☞ Municipal elections for half the members of each municipal council.
 - ☞ Legal reforms favoring the rights of individuals in Saudi courts.
 - ☞ Creation of a Saudi journalist organization.
 - ◆ More extreme crackdown on terrorist cells.

Factors Driving Future Iraqi Capacity

- Obstacles to major increases in Iraqi oil production rates include:
 - ◆ Repairing Export Facilities.
 - ◆ Creating Petroleum Law, Natural Resources Law, Environmental, Health, Safety laws: Requires Legitimate and Recognized Parliament.
 - ◆ Resolving Legality of Hussein-regime's "Post-sanctions Contracts" and New Contracts Will Have to be Resolved.
 - ◆ Determining how to Pay for Expansion.
 - ◆ Completing Industry Reorganization: Properly Defining Role of State, Ministry, Industry Regulators, State energy companies, Parliamentary Oversight Committees, private sector participants, Foreign contractors and investors, Audit and Control Agencies.
 - ◆ Reestablishing Stability and Order in the New Regime.
 - ◆ Retaining Top Iraqi Oil Technocrats, Instituting Suitable Management Structure and Recruiting and Training New, Young Technicians and Managers.

Conclusions

- It can not be taken as given that Saudi or Iraqi oil production capacity will definitely cover long term demand growth.
- Political factors will play a critical role in determining the ability and willingness of Saudi Arabia and Iraq to meet rising demand.

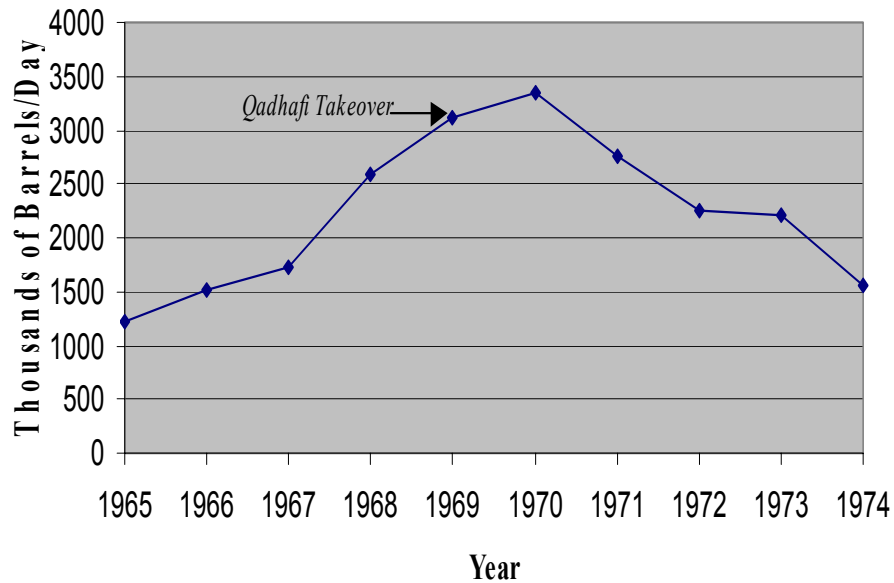
Food for Thought

*Change in government often
brings drop in production, not
increase*

Iran and Libya - The 'Lessons' of Regime Change, Thwarted Potential

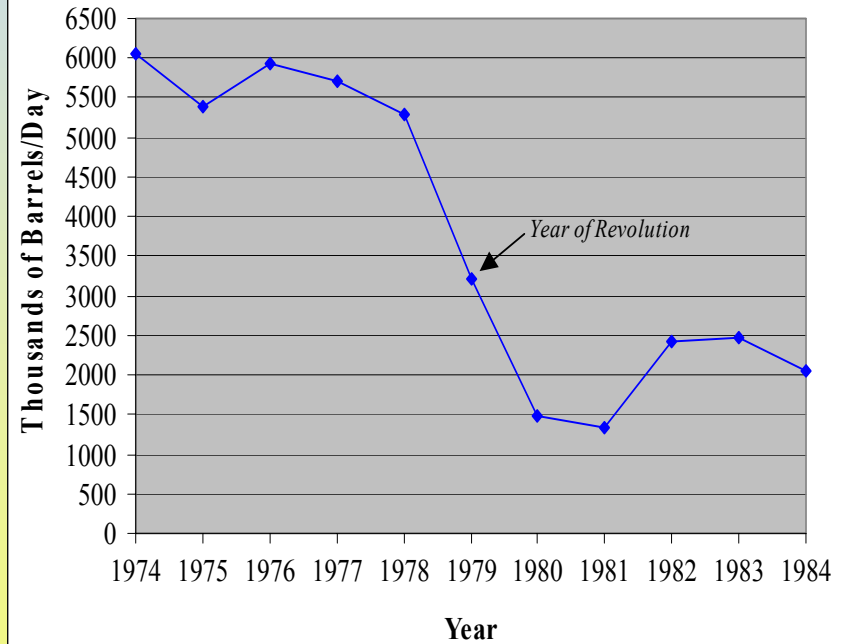
Libyan Oil Production

Pre/Post Qadhafi

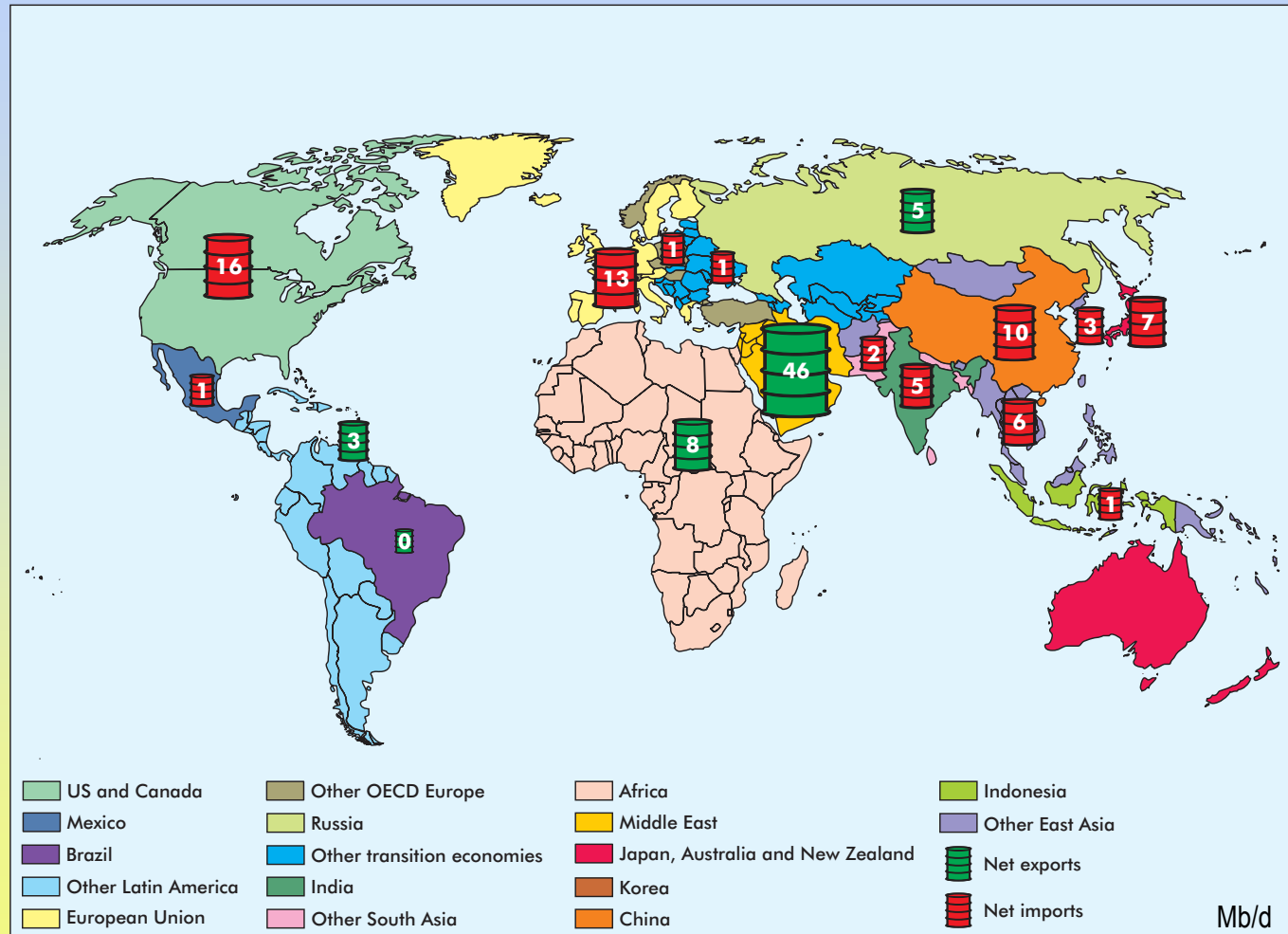


Iranian Oil Production

Pre/Post Revolution

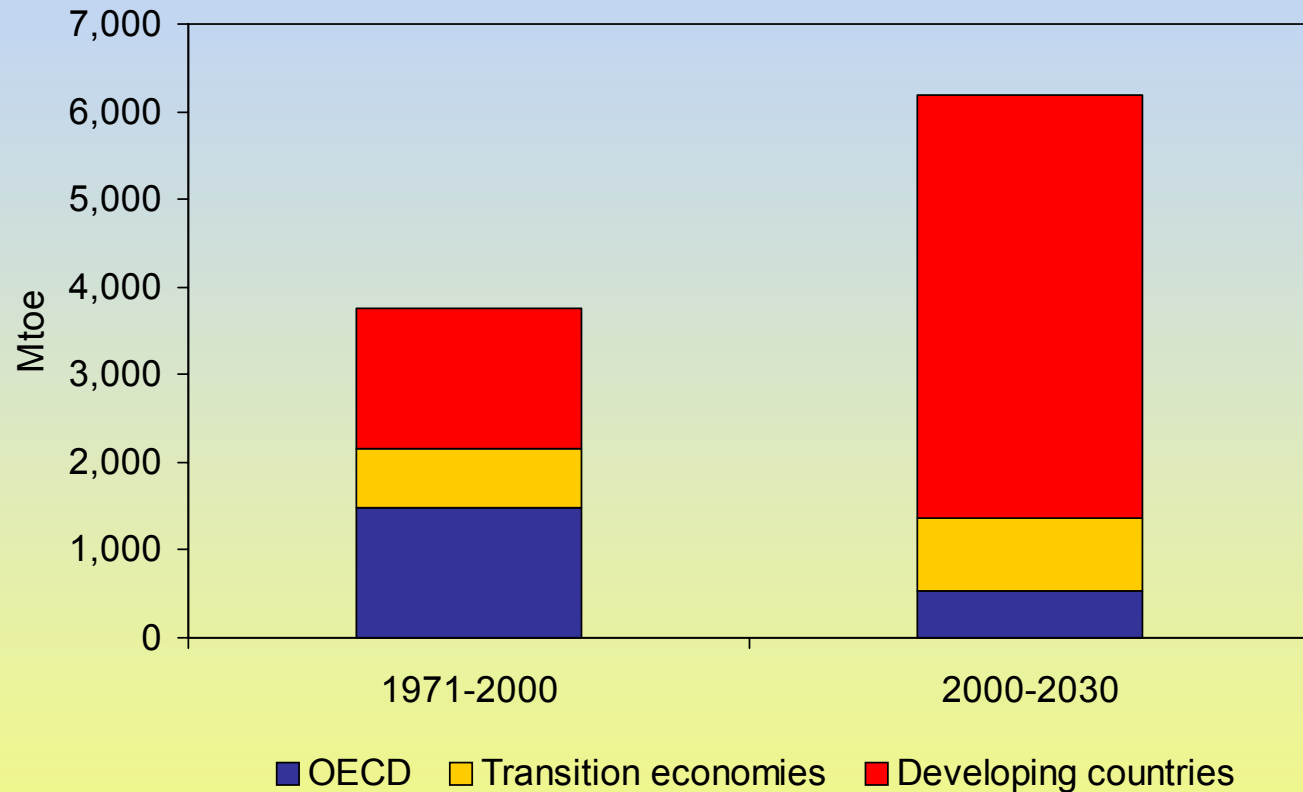


Net Oil Trade, 2030



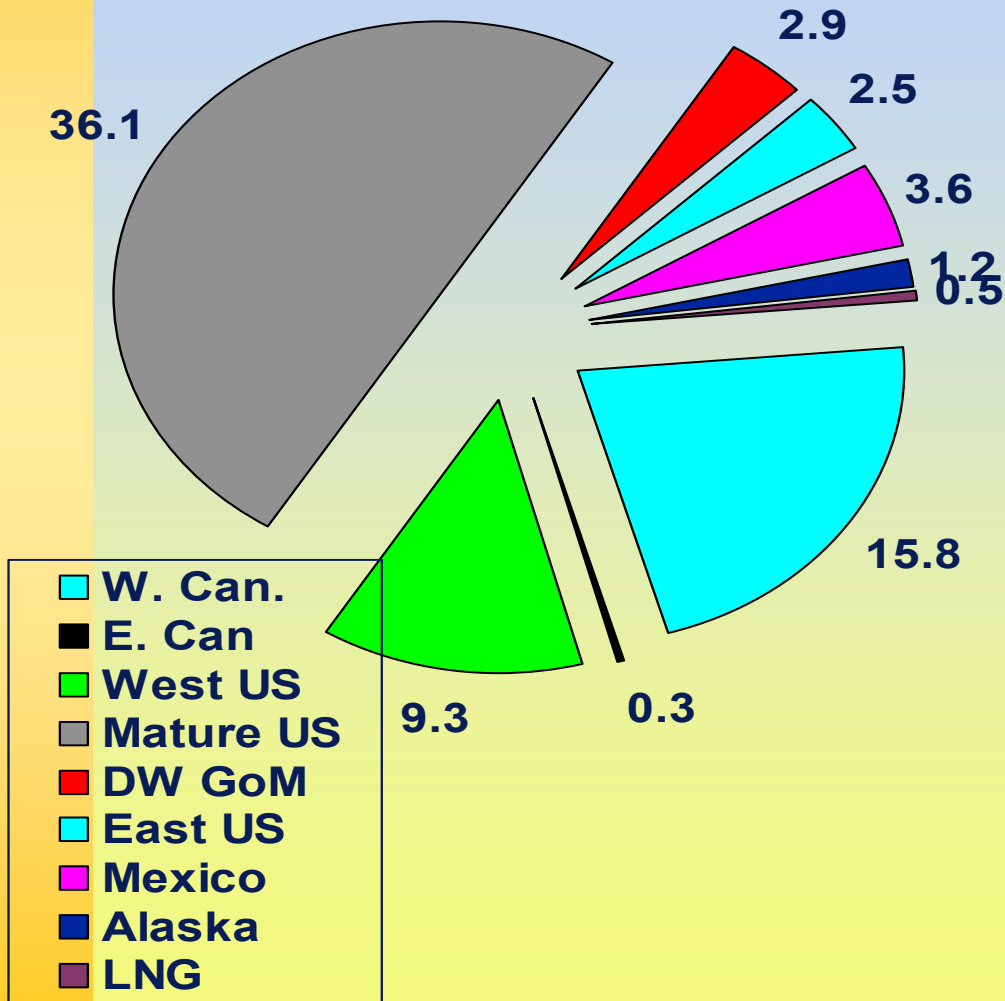
The Middle East strengthens its position as the world's largest oil exporter

Pronounced shift expected in the geographical sources of incremental energy supplies over the next three decades, in response to a combination of cost, geopolitical and technical factors



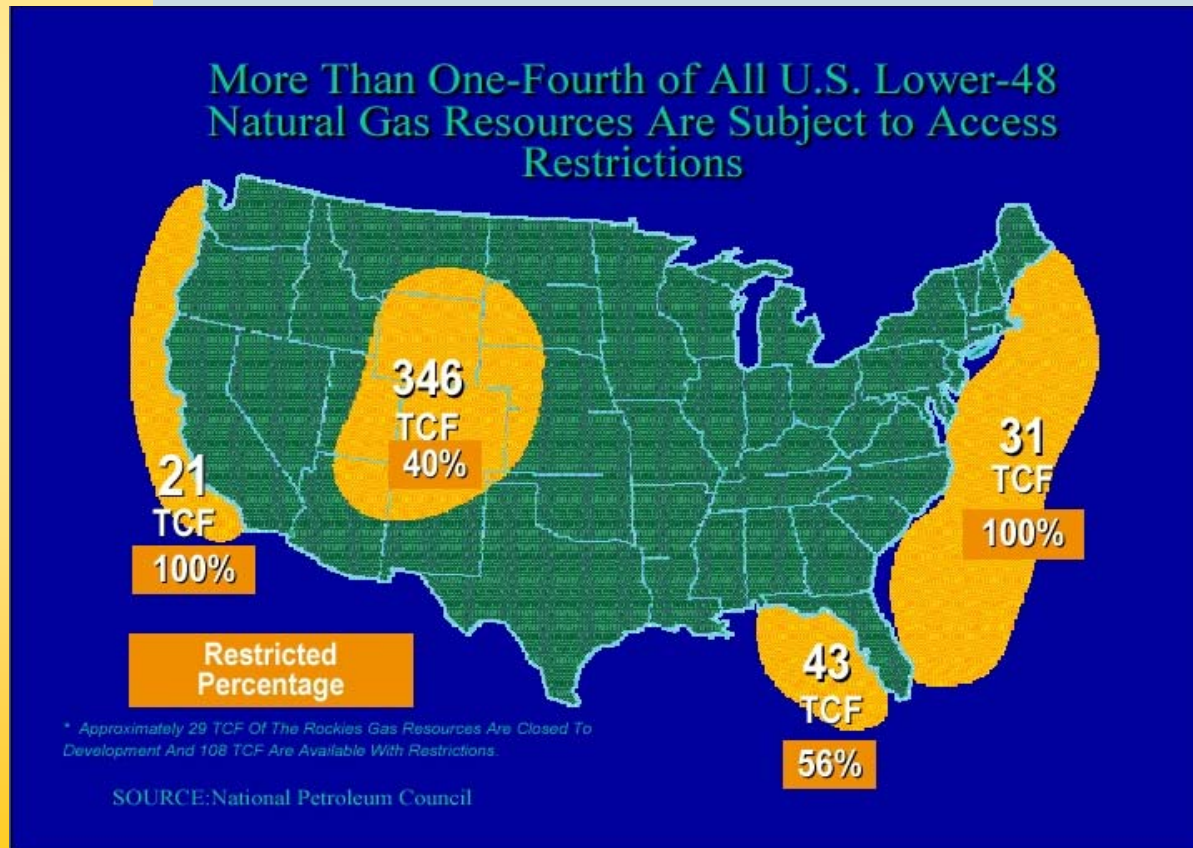
According to IEA, almost all the increase in production occurs outside the OECD in the future, up from 60% in 1971-2000. Will these supplies be less stable?

US Natural Gas Supply --2000

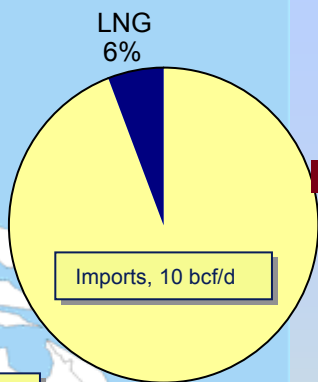


Geographically
Diverse

Access to US resources is not just geological; local politics prevails against market forces



- Environmental pressures have blocked natural gas resource development in key areas of the US



US market supply deficits expected to attract increased imports from distant suppliers

Non-measurable Impacts: Slow Down in Infrastructure Development and New Facilities Development

Example: Explosion at Skikda, Algeria

- Security and safety concerns post-Skikda now raised in LNG regasification terminal permit hearings in the U.S.

“The lesson to take away from Algeria is that it was an event of greater magnitude than anyone expected,” said Bill Powers, chairman of the Border Power Plant Working Group, an organization in San Diego that has protested plans to build LNG plants nearby in northern Mexico. “That’s why we should not put LNG facilities anywhere near centers of population.”
Quotation from the New York Times, February 12, 2004

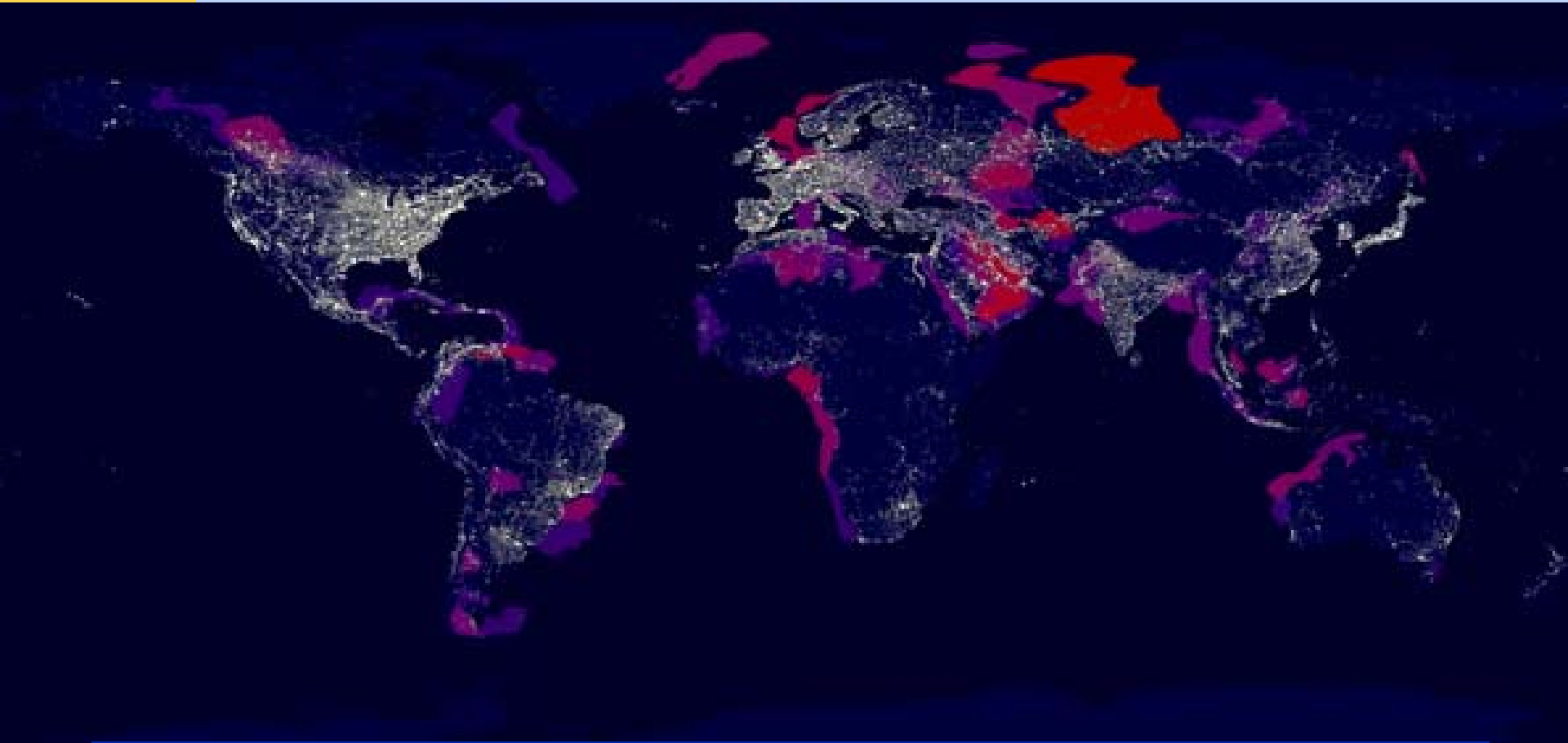
Non-measurable Impacts: Slow Down in Infrastructure Development and New Facilities Development

- LNG Safety Study Debate
- James Fay MIT study (Boston Harbor), NOAA study, Lawrence Livermore National Lab (San Francisco Bay) Quest Consultants 2001 Report (Boston Harbor)
- New Review at Sandia National Lab
- At stake: LNG terminals in Alabama, Maine, California and Baha, Mexico, etc...

Rice World Gas Trade Model Conclusions

- Lower 48 production likely to range around 20 to 22 tcf; Rocky Mountain production to plateau after 2010
- U.S. likely to be highest priced market globally, with price average \$4.00 to \$4.50 between 2010-2030
- Alaska replaces declining Canadian supplies rather than create a price collapse (but prevents jump in prices) after 2010
- Venezuelan LNG critical to moderate U.S. prices after 2012
- Failure of Venezuela to come on line would result in a considerable increase in gas prices in Atlantic Basin
- Bolivian gas finds its way to Baja by 2015, eventually displacing, along with other South American supply, Australian gas in the Americas
- Russian pipeline gas to Europe pushes West African supplies with great dominance to Americas
- Gas OPEC hard to organize over next decade or so because of fringe producers and higher substitutability of gas with other competing fuels

Supply and Demand

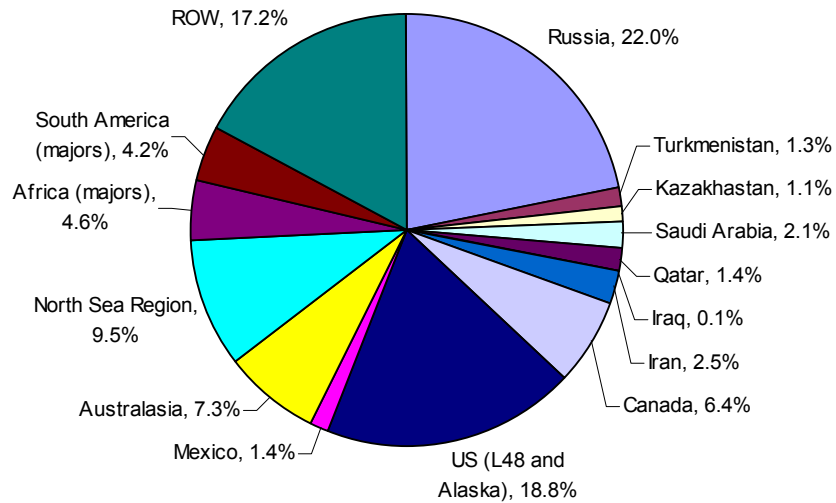


White: where the lights are on, satellite imagery

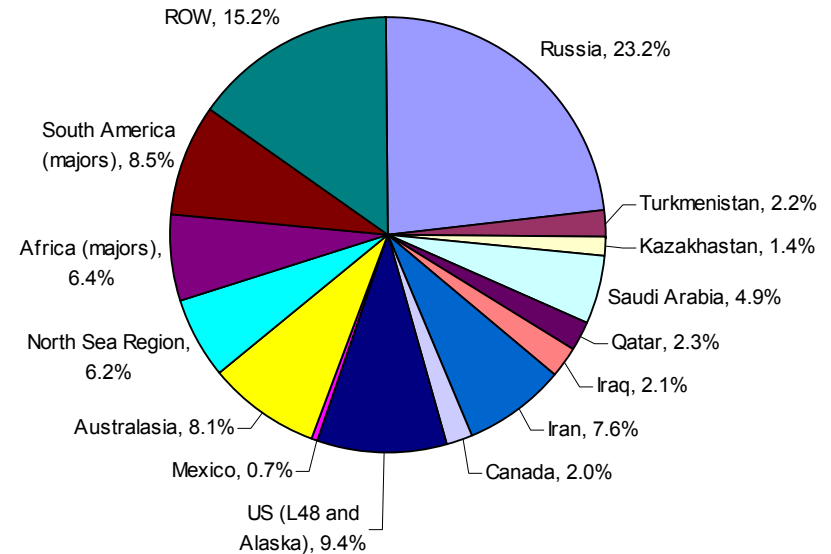
Blue → Red : Gas resources, with increasing size (USGS)

A Vision for 2030

**2002
Production Share**



**2030
Production Share**



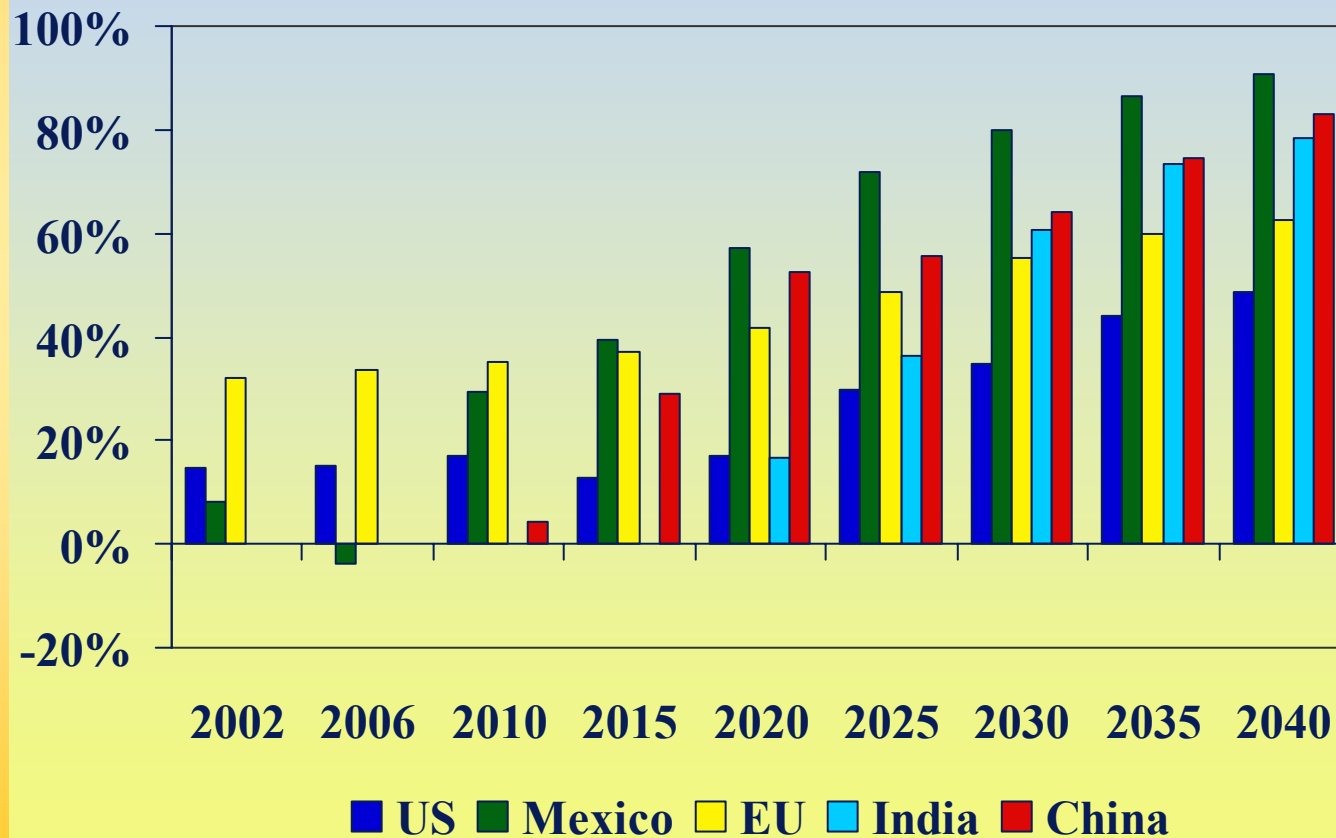
Geopolitical Implications:

four points

1. New Market Structures
 - Regional to Global
2. Changing Roles for Governments
 - From Builder to Facilitator
3. Supply Security
 - A Viable Cartel?
4. Challenges to Gas Future
 - Four Possible Pitfalls

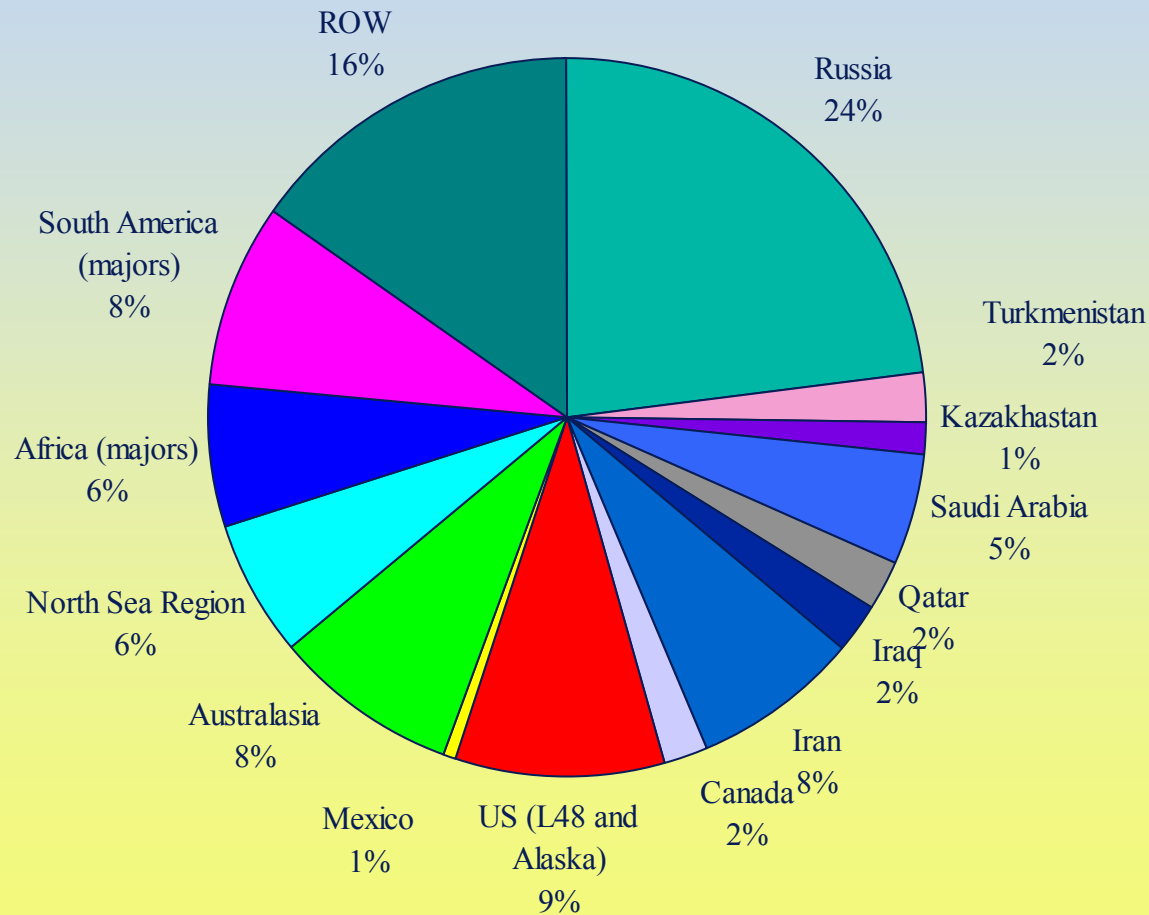
More countries import more gas

Net import share in own demand



Supply projections

2030



3. Security of Supply and Cartels

- To date, few political interruptions of supply
 - ◆ Ukraine (middle 1990s) and Belarus (2004)
 - ◆ Algeria (early 1980s)
 - ◆ Indonesia (~2002)
 - ◆ Argentina (2004)
- Is a Gas Cartel Feasible?
 - ◆ Gas Exporting Countries Forum (GECF)
 - ◆ Large competitive fringe
 - ◆ Policy responses

Prospects for a Gas Cartel

- Reserves and Exports highly concentrated
 - ◆ Exports
 - ☞ Russia has 28%
 - ☞ Top 7 have 79% of exports
- But...
 - ◆ Not all are likely Cartel members (e.g., Canada, Norway, Netherlands – 30% of exports)
 - ◆ Export concentration reflects underdevelopment of many major deposits
 - ☞ Qatar (2.6% of world exports) is only significant Middle East player
 - ◆ High supply elasticity → many “competitive fringe” suppliers

In the Long Run...

- Possible emergence of LNG “swing producers”
- Rice World Gas Trade Model estimates:
 - ◆ Russian dominance in Europe and Asia
 - ☞ pipeline gas is cheaper than LNG
 - ☞ Arbitrageur between Europe and East Asia
 - ◆ Iran; Saudi Arabia
 - ☞ Constrain possible Russian market power?

“No single Western nation can cope with the energy problem by pursuing an isolationist or nationalist strategy, for both it and the countries most important to it would all likely wend up worse off. Problems would be inescapably transmitted through the international economy. Neither planning for dealing with a military crisis in the Arabian/Persian Gulf nor meaningful domestic responses during a supply disruption are likely to be effective without coordination with other Western countries. Nor can the consequences—whether they be balance of payments difficulties, Third World debt, economic slump, or protectionism—be effectively countered without cooperation. The failure of cooperation can be costly, as was discovered in 1973-1974 and again in 1979.”

--Daniel Yergin, *Global Insecurity* 1980