



# **Regulation and Investment, in the Energy Domain: some remarks**



**George H. B. Verberg  
President International Gas Union  
at the 5th ERRA Conference, Budapest.**





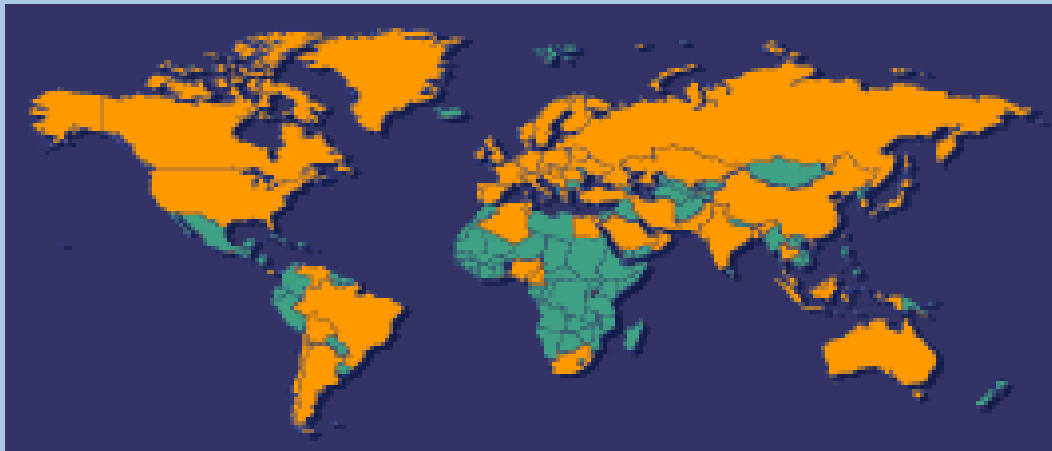
# INTERNATIONAL GAS UNION

[www.igu.org](http://www.igu.org)

**International non-profit organization founded in 1931**

**Objective:** To promote the technical & economic progress of the gas industry

**Members:** Associations of the gas industries in 67 countries  
23 associate member companies



[www.wgc2006.nl](http://www.wgc2006.nl)

23<sup>rd</sup> World Gas Conference

6-9 June 2006, Amsterdam



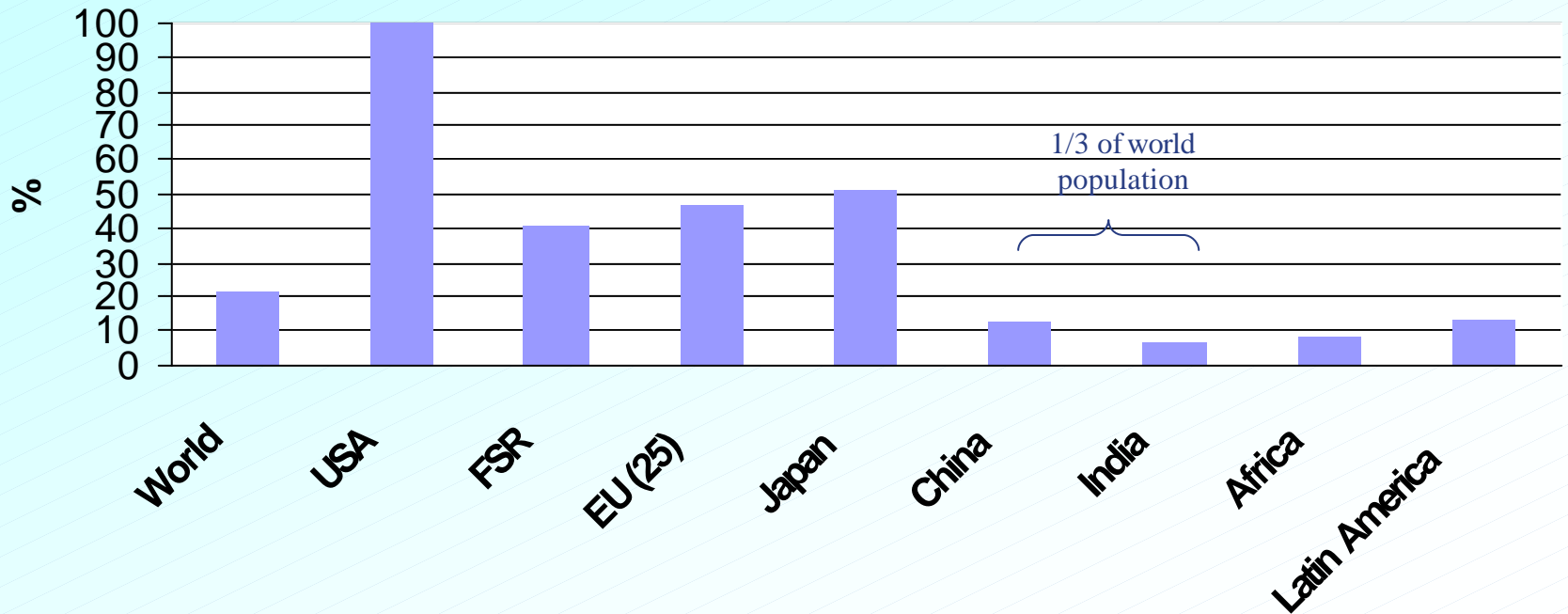
# Themes for Today

- **The World needs Energy, at what Prices and what about Investments?**
- **LNG changes the Global Gas Scene;**
- **Government Actions, Regulation, Liberalization.**



# Energy Consumption in Perspective

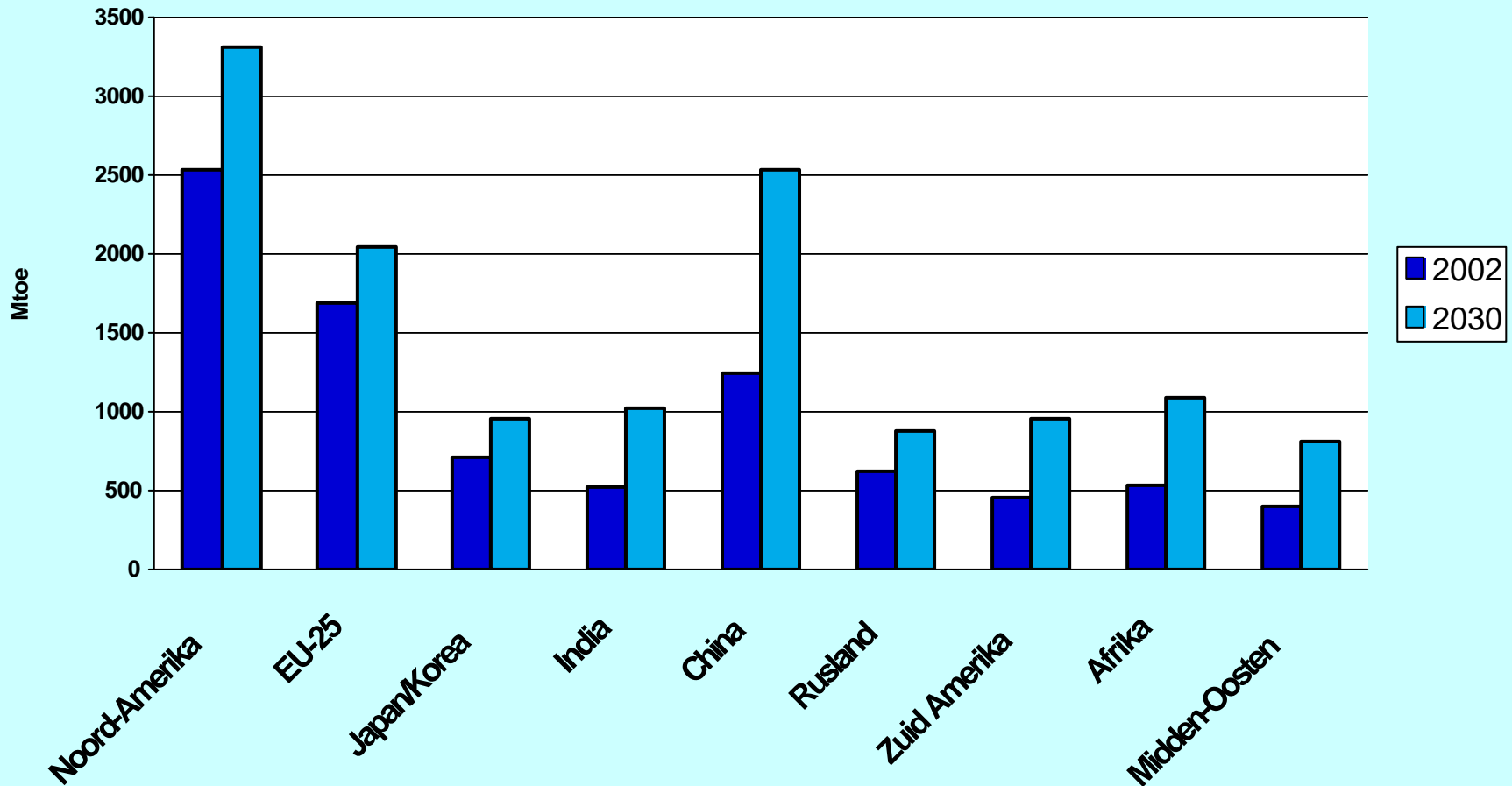
primary energy consumption per capita  
relative to USA



IEA data year 2002



# Total Energy Demand by Region 2002 and 2030

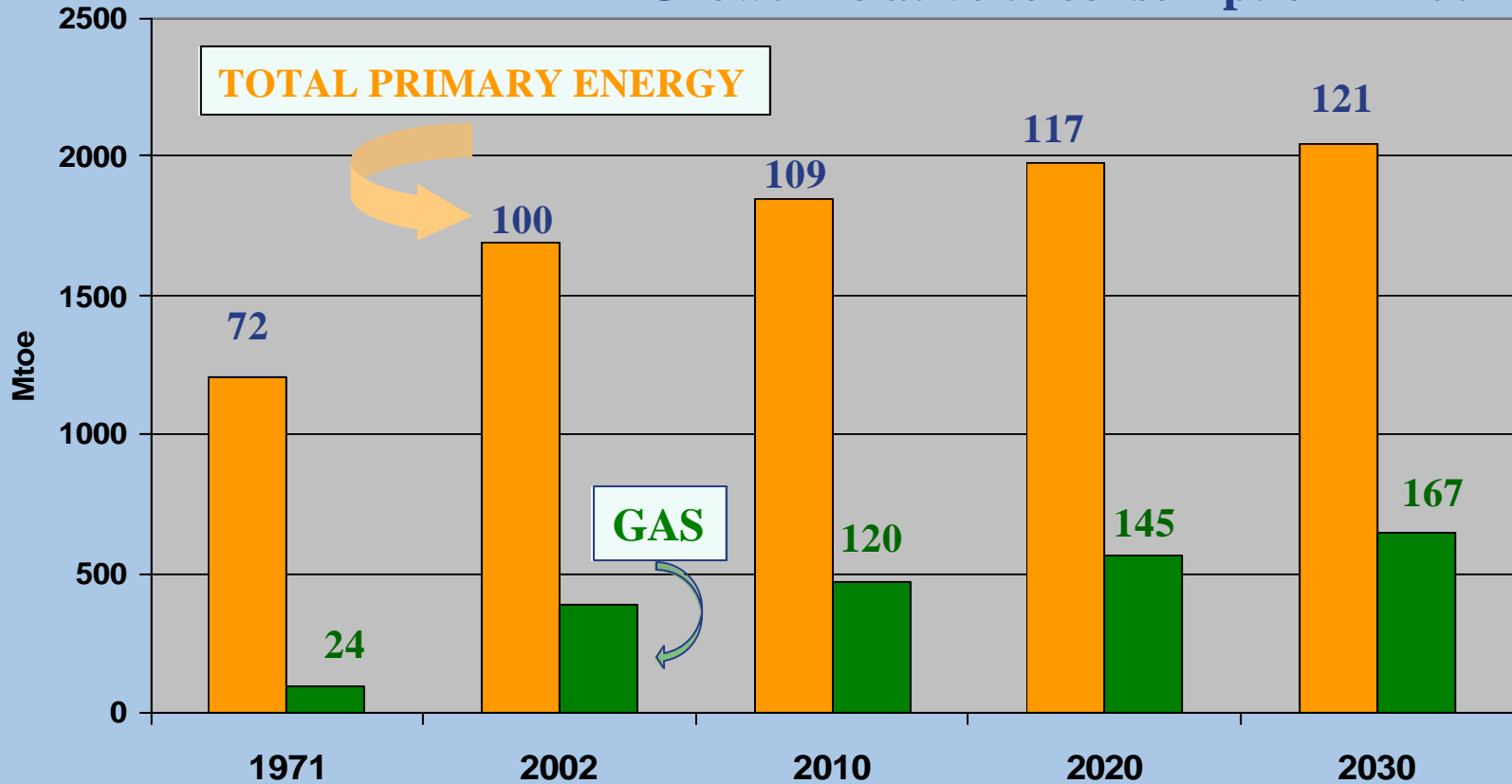




# EU Energy Demand Forecast IEA

## EU (25)

Growth relative to consumption in 2002





# Oil Prices: How High is High?

Oil prices in US\$ of 2004:

- 1864: 92 \$/b, but at that time no oil dependent economy
- 1980: 81 \$/b, economic difficulties
- 2004: 55 \$/b
- 2005: 60+ \$/b
- 2006: 70+ \$/b
- Expected: restraints in refinery capacity lifted by 2008



# Replacement of Reserves

... the industry has replaced only half the reserves it has produced and needs to spend \$ 40 bn a year, rather than the current \$ 14 bn, to ensure it found a new barrel of oil for every barrel consumed.

(Wood Mackenzie in Financial Times, 4 Oct 2005)

**What are reasons for this shortfall ??**



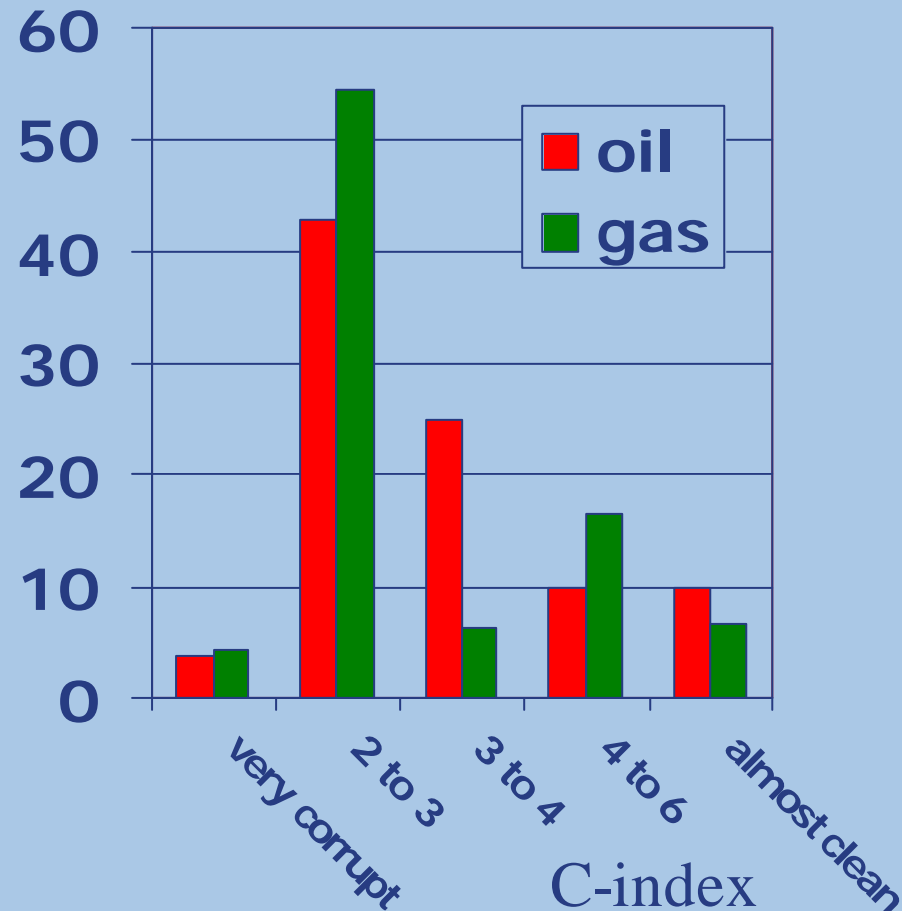


# Corruption and bribery versus oil and gas reserves

- Corruption index (by *Transparency International*) ranks countries' degree of corruption among public officials and politicians.

0 = highly corrupt  
10 = clean

% of proven oil/gas reserves

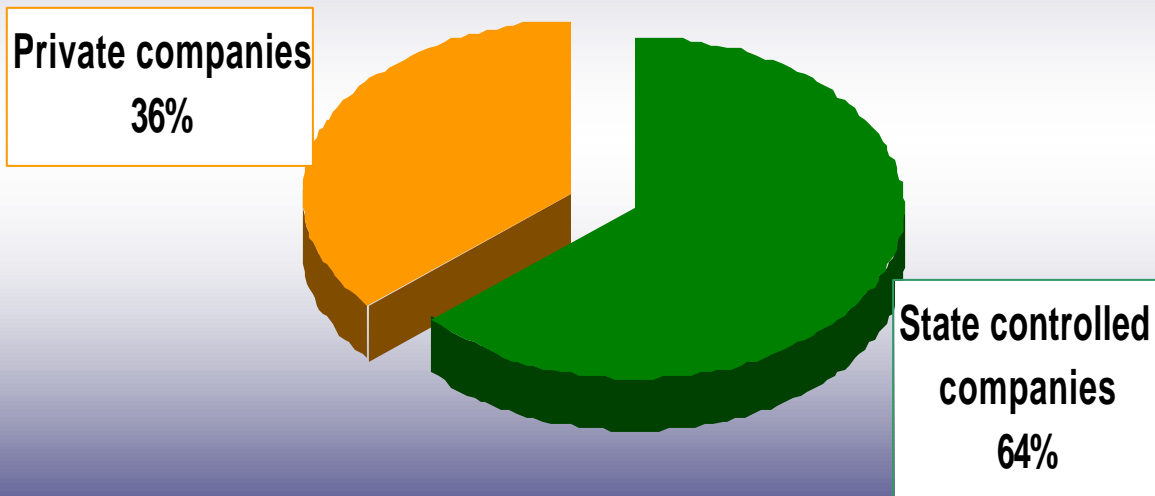


TI data 2005; reserves data BP june 2005



# SoS: Who Owns the Gas (and Oil) Reserves?

## CONTROL OVER PRODUCTION OF REMAINING COMMERCIAL RESERVES NATURAL GAS





# Walking for Nationalization of Bolivian Natural Gas





	COMPANY	HOME COUNTRY	COMBINED OIL AND NATURAL GAS RESERVES* (BILLIONS OF BARRELS)
1	<b>Gazprom</b>	Russia	254.0
2	<b>Saudi Aramco</b>	Saudi Arabia	250.0
3	<b>PDVSA</b>	Venezuela	247.9
4	<b>Qatar Petroleum</b>	Qatar	199.4
5	<b>Iraqi Oil Ministry</b>	Iraq	136.9
6	<b>Exxon Mobil</b>	United States	71.3
7	<b>KPC</b>	Kuwait	61.3
8	<b>BP</b>	Britain	56.5
9	<b>ADNOC</b>	U.A.E.	55.8
10	<b>Royal Dutch Shell</b>	Britain/Netherlands	52.7
11	<b>NIOC</b>	Iran	49.3
12	<b>Total</b>	France	39.5
13	<b>Chevron</b>	United States	38.8
14	<b>Rosneft</b>	Russia	38.1
15	<b>Pemex</b>	Mexico	32.5
16	<b>NNPC</b>	Nigeria	31.3
17	<b>Lukoil</b>	Russia	27.7
18	<b>Sonatrach</b>	Algeria	26.8



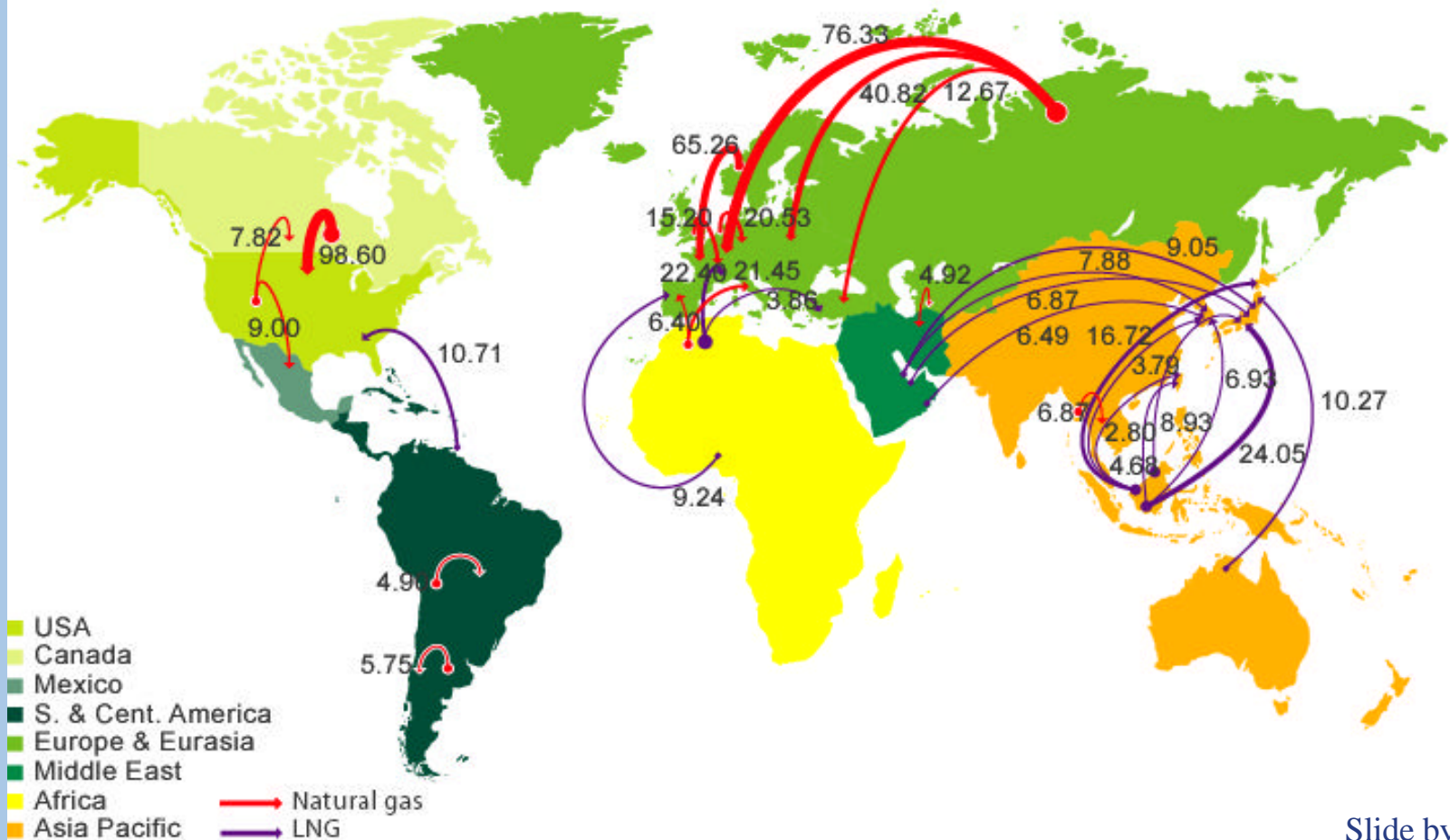
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# Major Natural Gas Trade Movements at the Start of the 21<sup>st</sup> Century: No Single Global Gas Market but Regional Gas Markets

Trade flows worldwide (billion cubic metres)

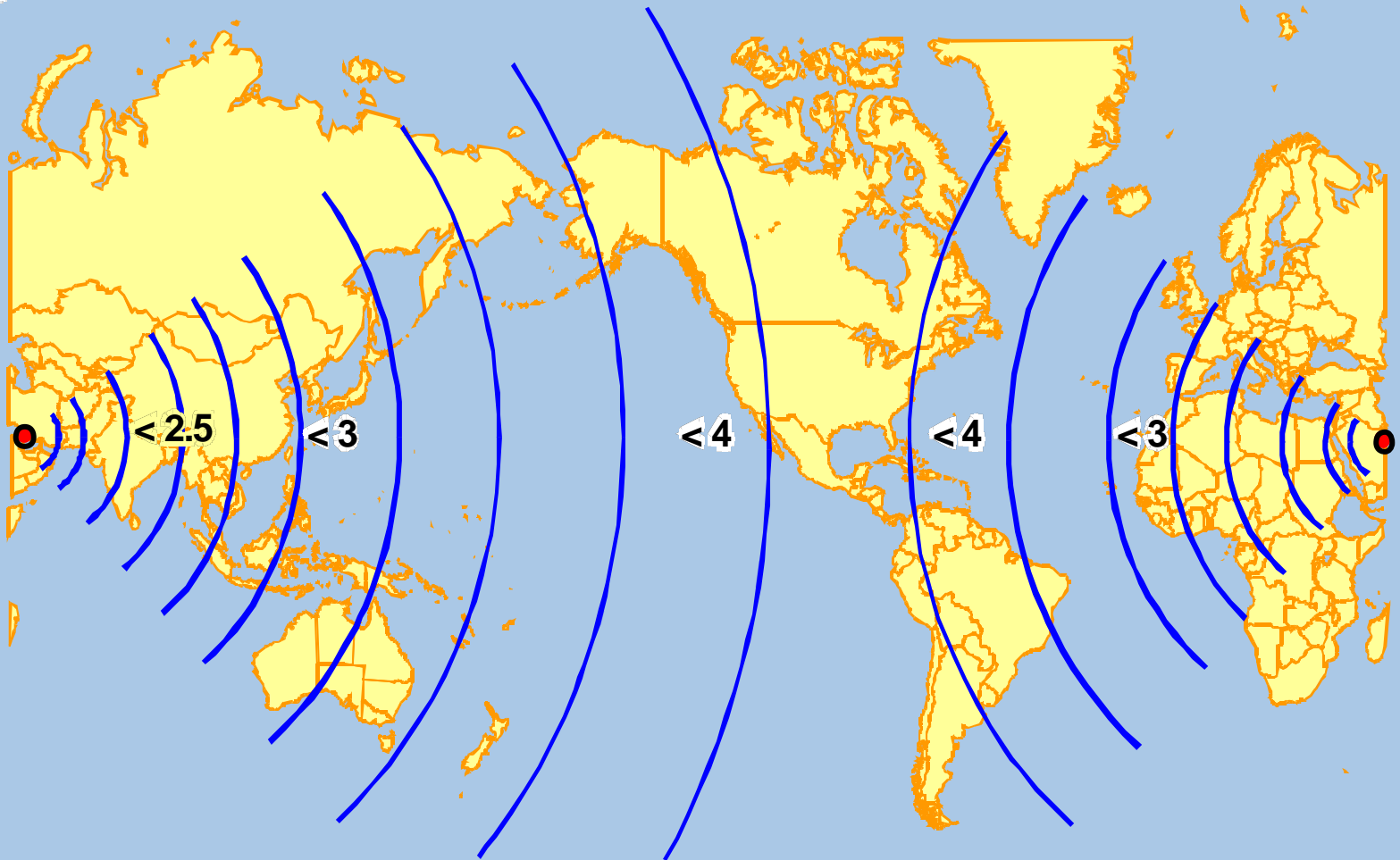


Slide by BP





# Middle East LNG—Setting a New Global Cost Benchmark (\$ per MMBtu)





# International LNG Trade: Connecting Markets, Competing Markets!

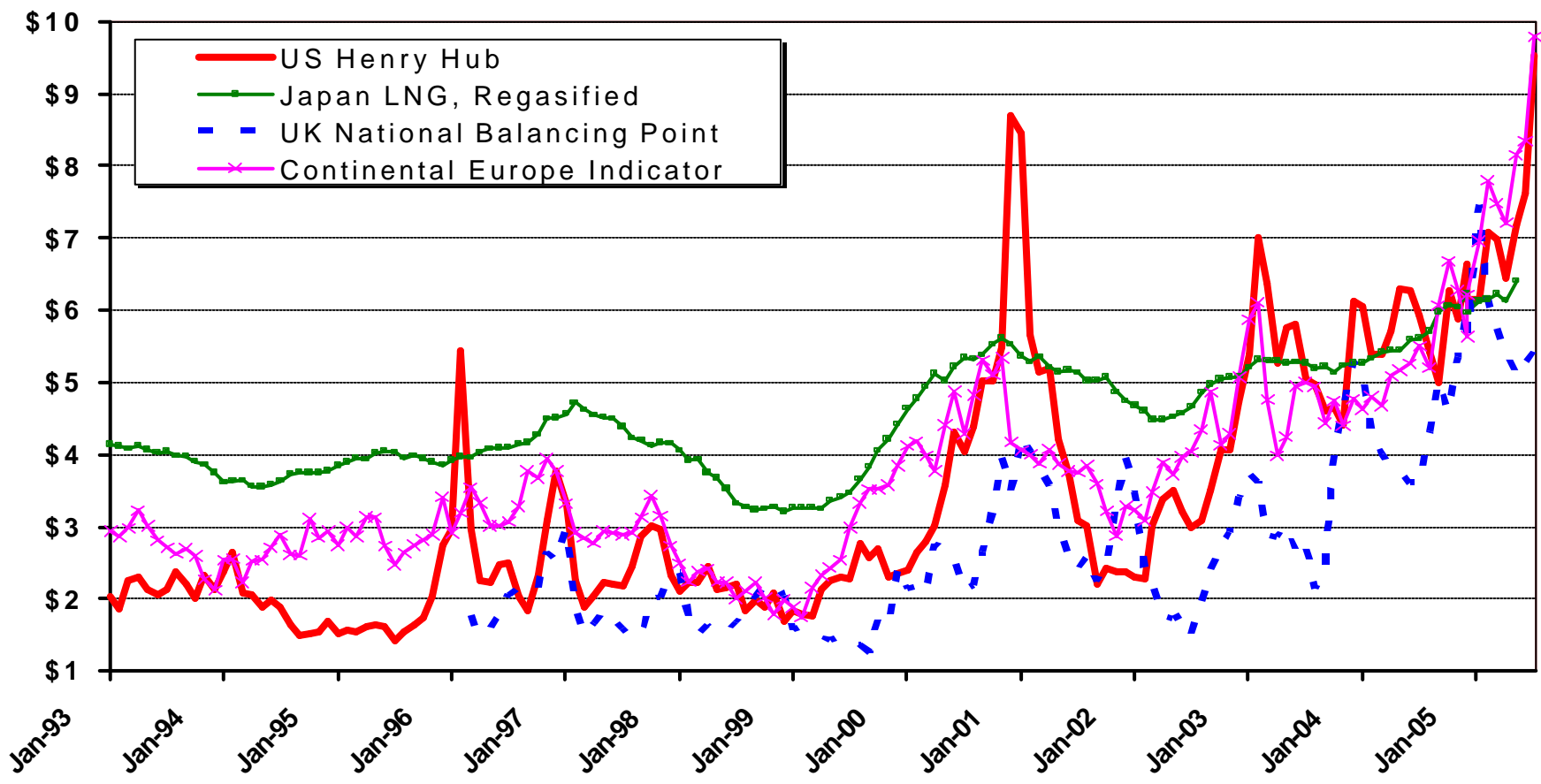






# World gas prices have become more aligned: LNG can find its way everywhere.

## Benchmark World Gas Prices



Source: M. Speltz, Chevron, sept 2005

5th ERRA conference, May 15-16 2006



# Russia's Diversification of Gas Export; Away From Europe



 = gas development

Transport by pipeline or LNG 



# Themes for Today

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# Government action (example) ARGENTINA - CHILE

- LT-supply contract for gas from Argentina to (on purpose build) gas-fired power station in Chile;
- Gas price in Argentina more or less in line with oil price: structural balance in gas demand-supply;
- 'Pesofication': gas prices (peso-related) were decoupled from oil prices (\$-related) and fell therefore relative to oil prices;
- Government gave no permission to increase gas prices (to make good for devaluation of peso)



# Government action(example) **ARGENTINA - CHILE (2)**

- **Result: fall of gas exploration and -production (prices to low) BUT sharp increase of gas demand (TAXI's turning to CNG etc.):**
- **Shortage of gas in Argentina:**
- **Argentinean government "closed" the valve for export to CHILE**
  
- **LESSON: If gas is fundamentally priced out of step with its relevant competitors you're in for problems:**
- **The Argentinean gas industry, due to this government policy, has got a serious set-back and loss of credibility, from which it is a painful process to recover.**



# Regulation: EUROPE

- **In the eighties and first part of the nineties supply of gas to Europe was expected to be abundant;**
- **Security of Supply was (therefore) not considered to be an issue;**
- **Regulation of the gas sector was very much done along the lines of the regulation of the electricity sector.**



# Regulation: EUROPE

- The European (and World) gas market changed towards a sellers market during the implementation of regulation/liberalization;
- And it became clear that Europe will become more and more dependent from a small number of countries:
- Security of Supply is (again) on the agenda!



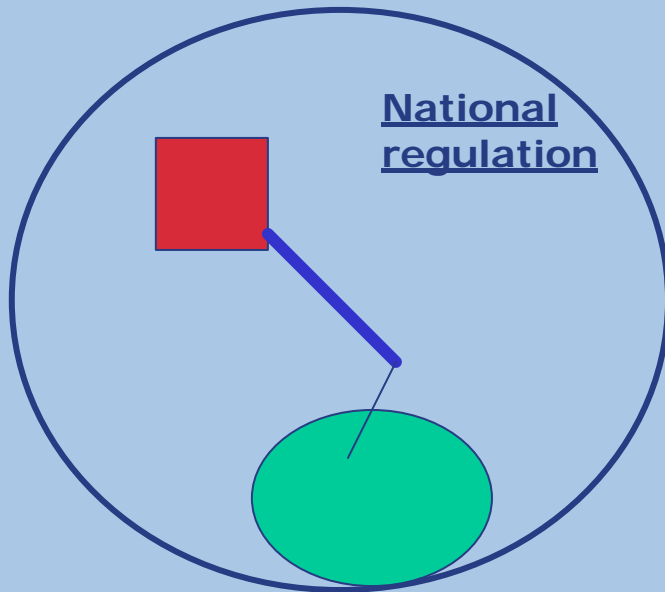
# Regulation: EUROPE

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# Regulation Electricity



## Business levels

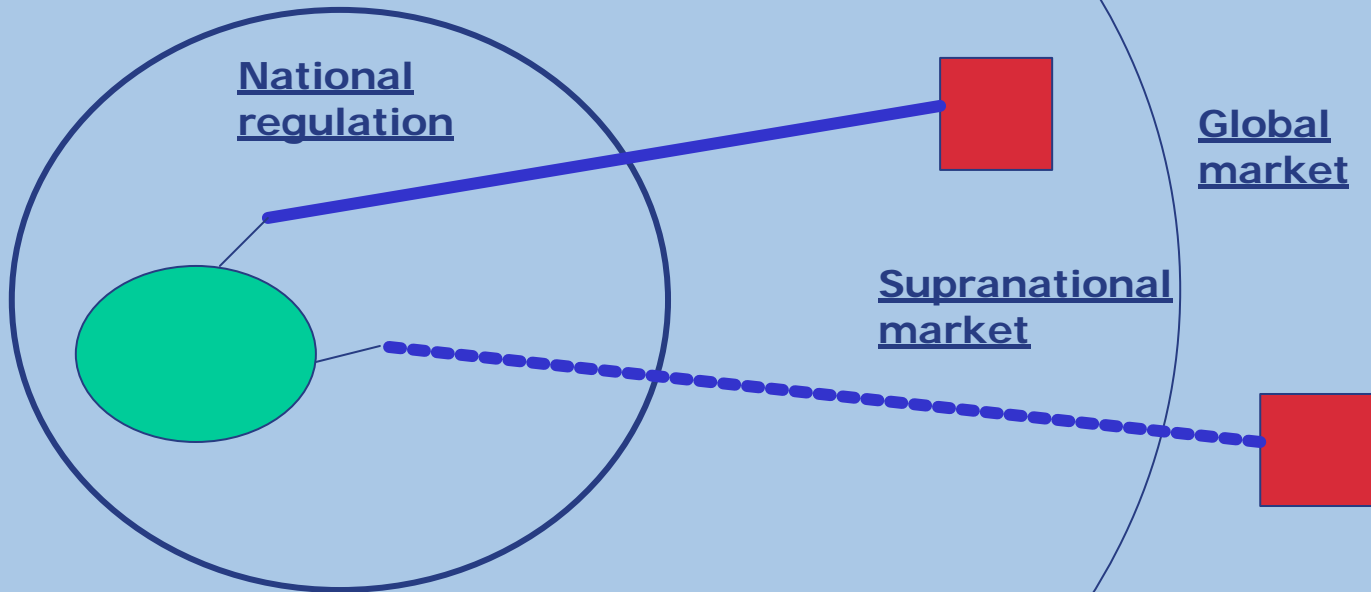
- production
- transmission
- distribution/consumption

## Electricity chain:

- Production close to consumption (local, regional, national scale)
- Regulation on a national level (foreseeable effects; consistency)



# Regulation Gas



## Business levels



production



transmission



distribution/consumption

## Gas chain:

- Production and supply: supranational / global
- Consumption and marketing: national / local

## National regulation versus international market dynamics



# Regulation: EUROPE

- At the same time LNG is connecting regional markets (North America, Europe, Japan / Pacific Rim and
- “New” gas import regions are making their presence at the world gas market known (India, China and Renewed US)
- This combination implies competition for supplies between gas importing regions:



# Regulation: EUROPE

- Competition will NOT ONLY be on PRICE;
- But also on the conditions at and structure of the competing markets and the investment climate;
- So the type of regulation in an importing region/country will have an effect on its attractiveness for an exporting country;
- To reduce (regulatory) risks exporting countries also want to diversify!



# Regulation: EUROPE

- Investments in gas infrastructure should also be encouraged:
- Competition flourishes better with a slight overcapacity.
- But there must be a sound fin./econ. base for investments: "Open Season", to assess the market demand for new capacity



# Regulation: EUROPE

- Regulators in Europe and the EU-Commission understand that some regulatory changes are necessary:
- In the UK since some time Long Term Contracts to enter the National Grid (up to >10 years) are made possible again;
- Exemptions are granted to certain infrastructure projects, but uncertainty for investors remains. (e.g.LNG-terminals)



# Regulation: EUROPE

- Managing expectations is key for an acceptable result: liberalization is not in itself leading to lower prices, if done well it leads to higher efficiency, but
- Prices of gas in a free market will be determined by the structural supply / demand balance.
- Strong price volatility is also part and parcel of a liberalized gas market




# Do we need Regulation for Mobile Gas Storages too??







**Thank you  
for your attention**



**See you in Amsterdam!**  
**23<sup>rd</sup> World Gas Conference  
and Exhibition**  
**June 5 – 9 2006**

