Oil and Gas Pricing Mechanisms: Past, Current and Future Trends

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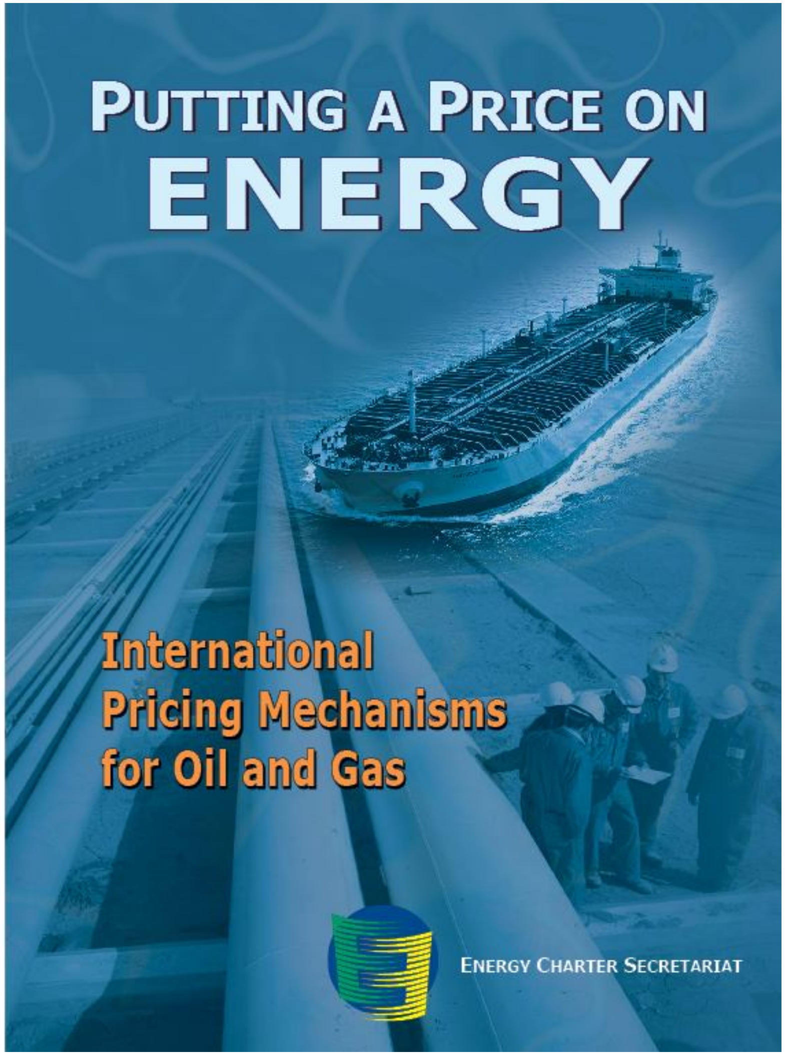
9-12 September 2009

Report on Pricing by the Energy Charter



The Report can be downloaded free of charge from: www.encharter.org

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Historical evolution of contractual structure of global oil market vs. key organizational forms of market space

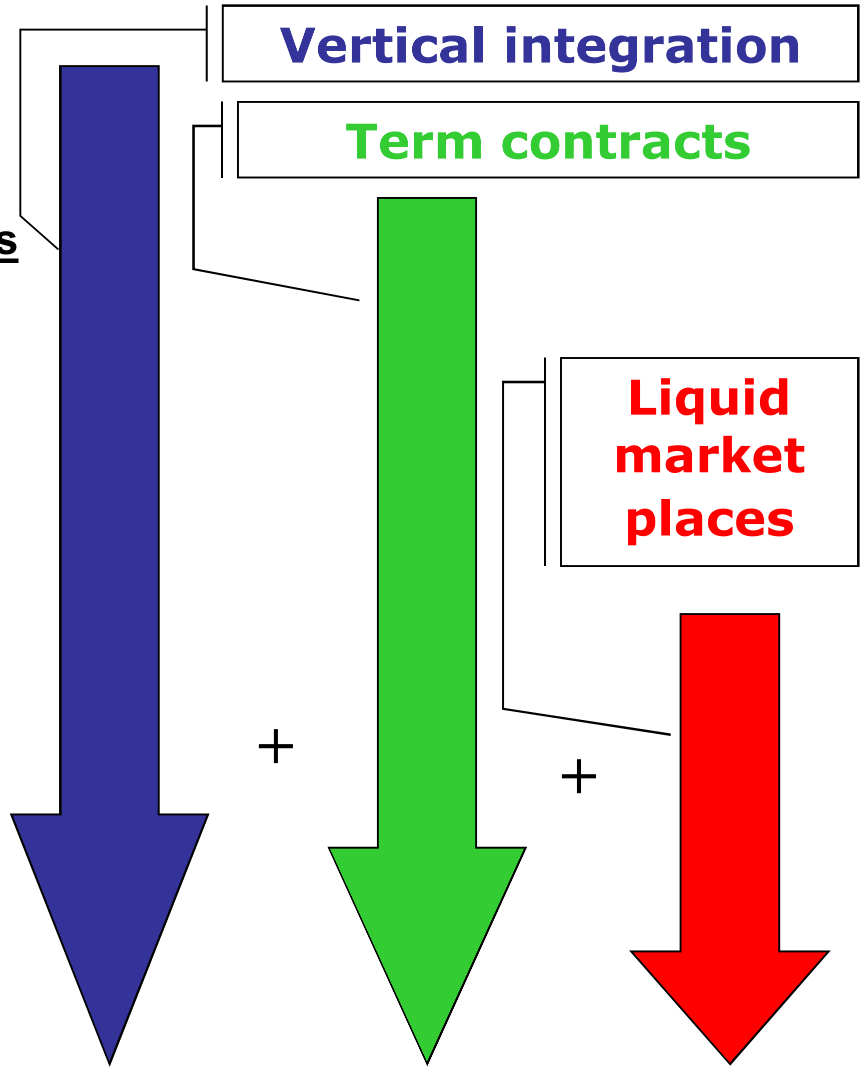
Transfer deals *(dominated prior to 1970-ies)*

+ Markets of physical goods => of "physical" energy & of real deliveries of energy resources (non-liquid energy markets) =

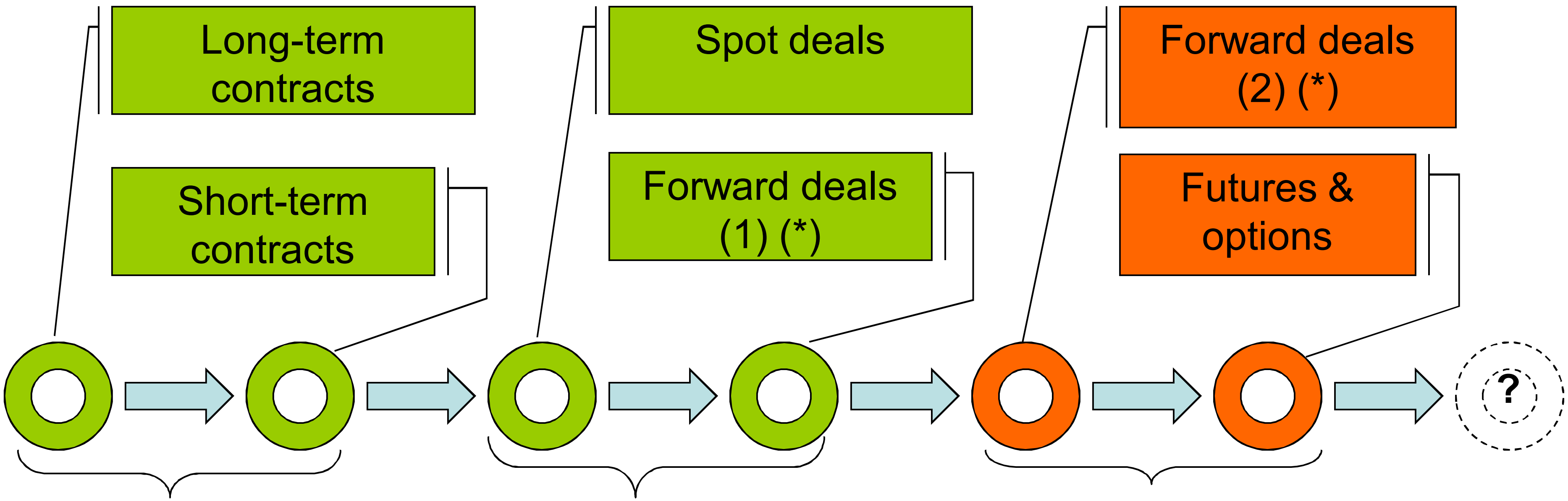
- \+ Long-term contracts *(since 1970-ies)*
- \+ Short-term contracts *(since 1970-ies)*
- \+ Spot deals *(since 1980-ies)*
- \+ Forward deals (with delayed deliveries of physical goods) *(since 1980-ies)*

+ Financial markets => of "paper" energy & of energy-based financial instruments (liquid energy markets) =

- \+ Forward deals (without deliveries of physical goods) *(since 1980-ies)*
- \+ Futures *(since 1990-ies)*
- \+ Options *(since 1990-ies)*
- \+ … ? (since … ?)



Evolution of oil market: volumes of trade vs. volumes of physical supplies



Volume of trade corresponds to volume of supplies	Volume of trade exceeds volume of supplies => OTC market (subsequent re-sales of non-unified commercial batches – "daisy chains")	Volume of trade multiply exceeds volume of supplies => liquid marketplaces/exchanges (multidirectional re-sales of unified supply liabilities)

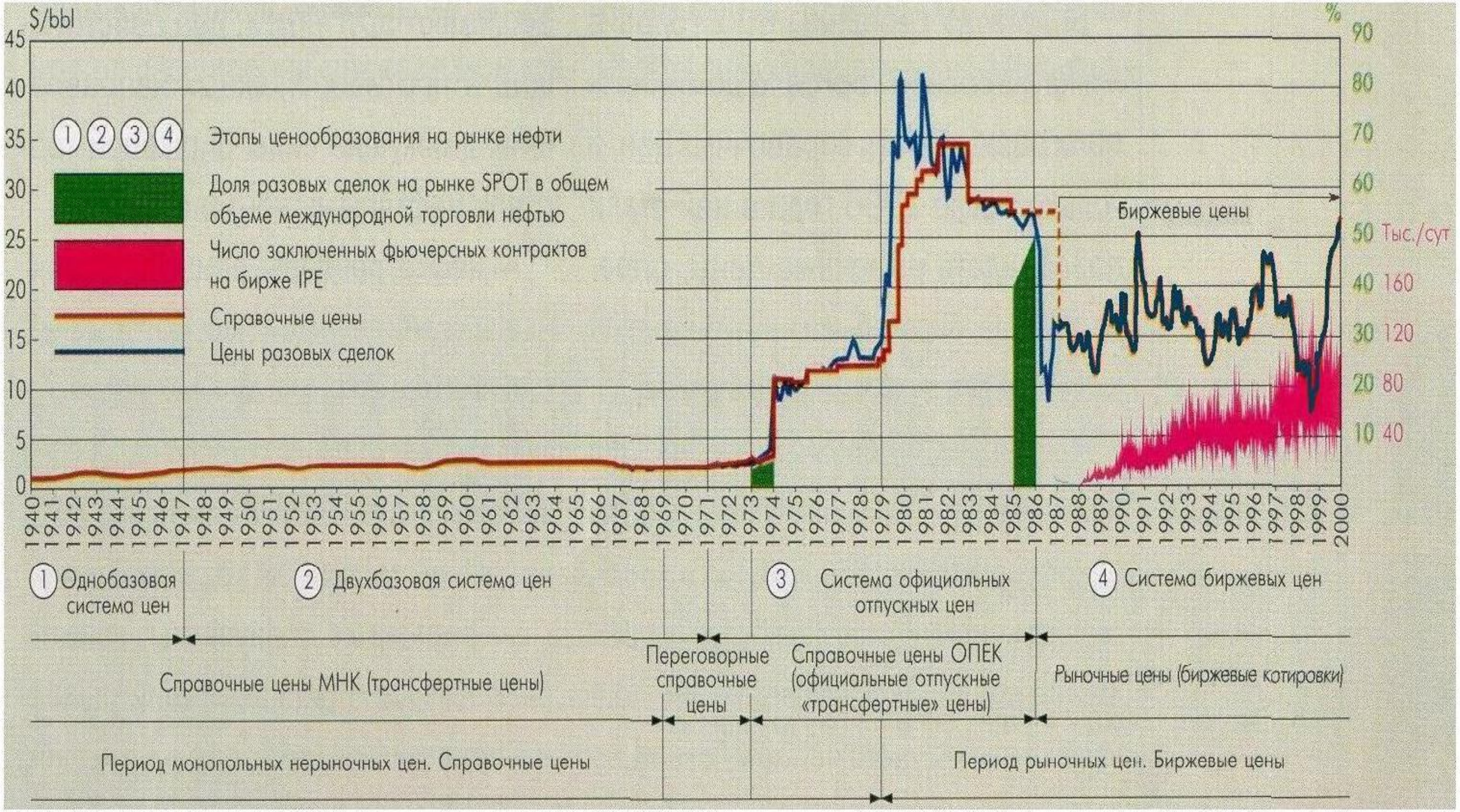
Increasing liquidity, ***but also*** growing market instability =>
good for traders/speculators, but is short-term & deprives project financing

Markets of physical goods (of "physical" oil)

Financial markets (of "paper" oil)

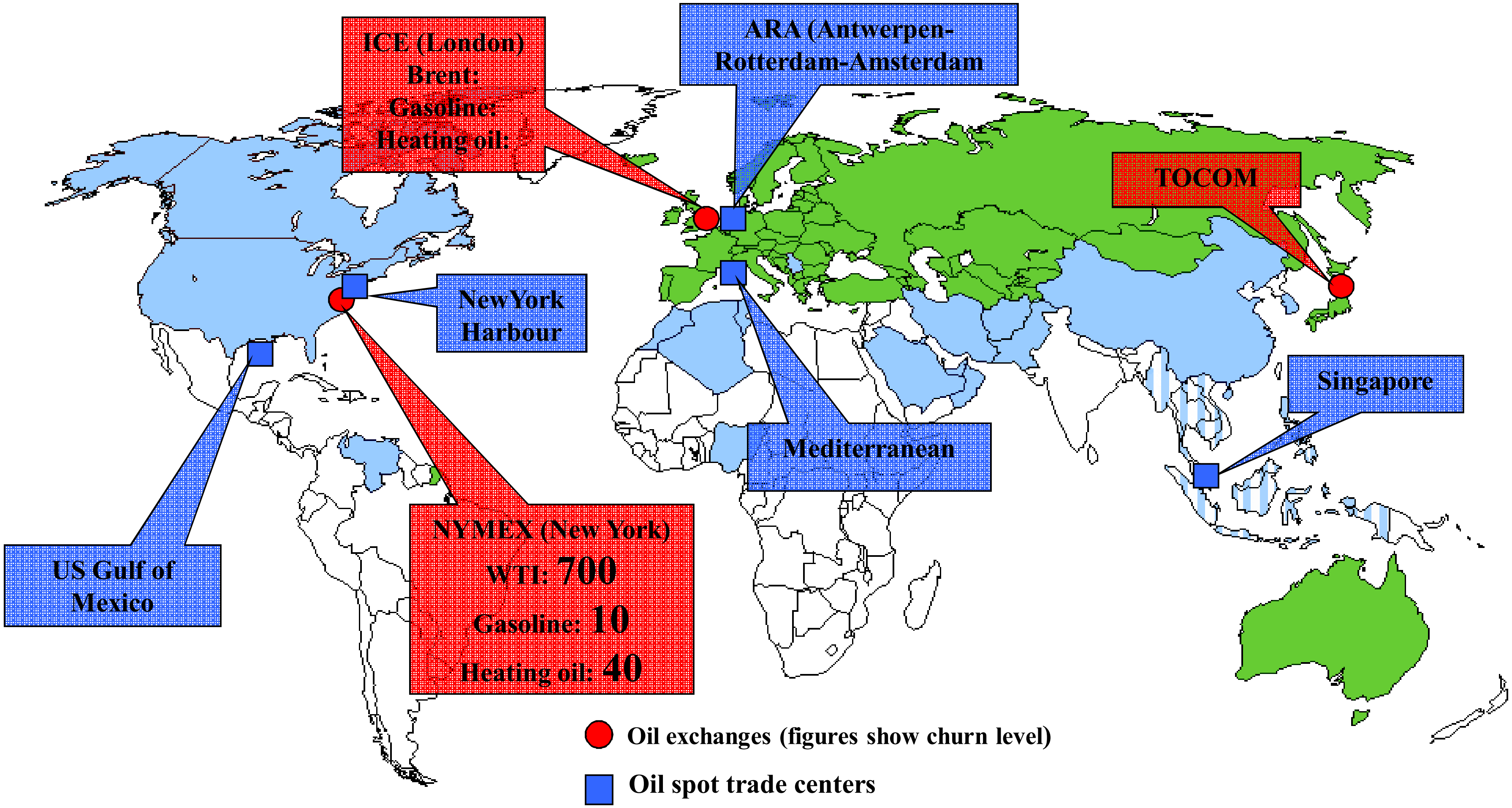
(*) (1) within the limits of coverage by accumulated volumes of stocks, (2) beyond such limits

Evolution of pricing systems in international oil trade

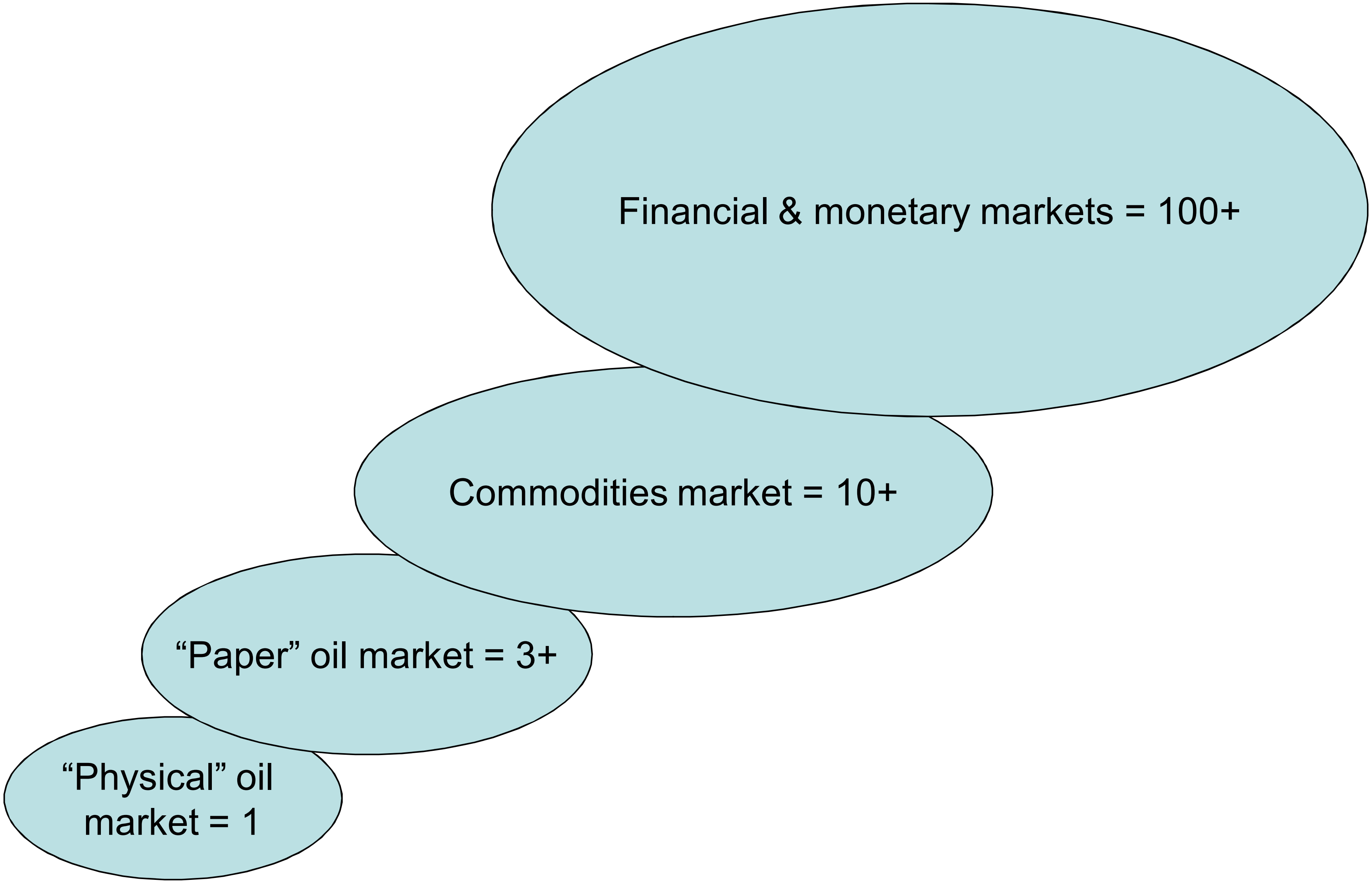


Futures prices dominate oil market, but NOT used by oil companies as benchmarks for project financing any more => ‘oil price’ is NOT a signal for long-term oil development

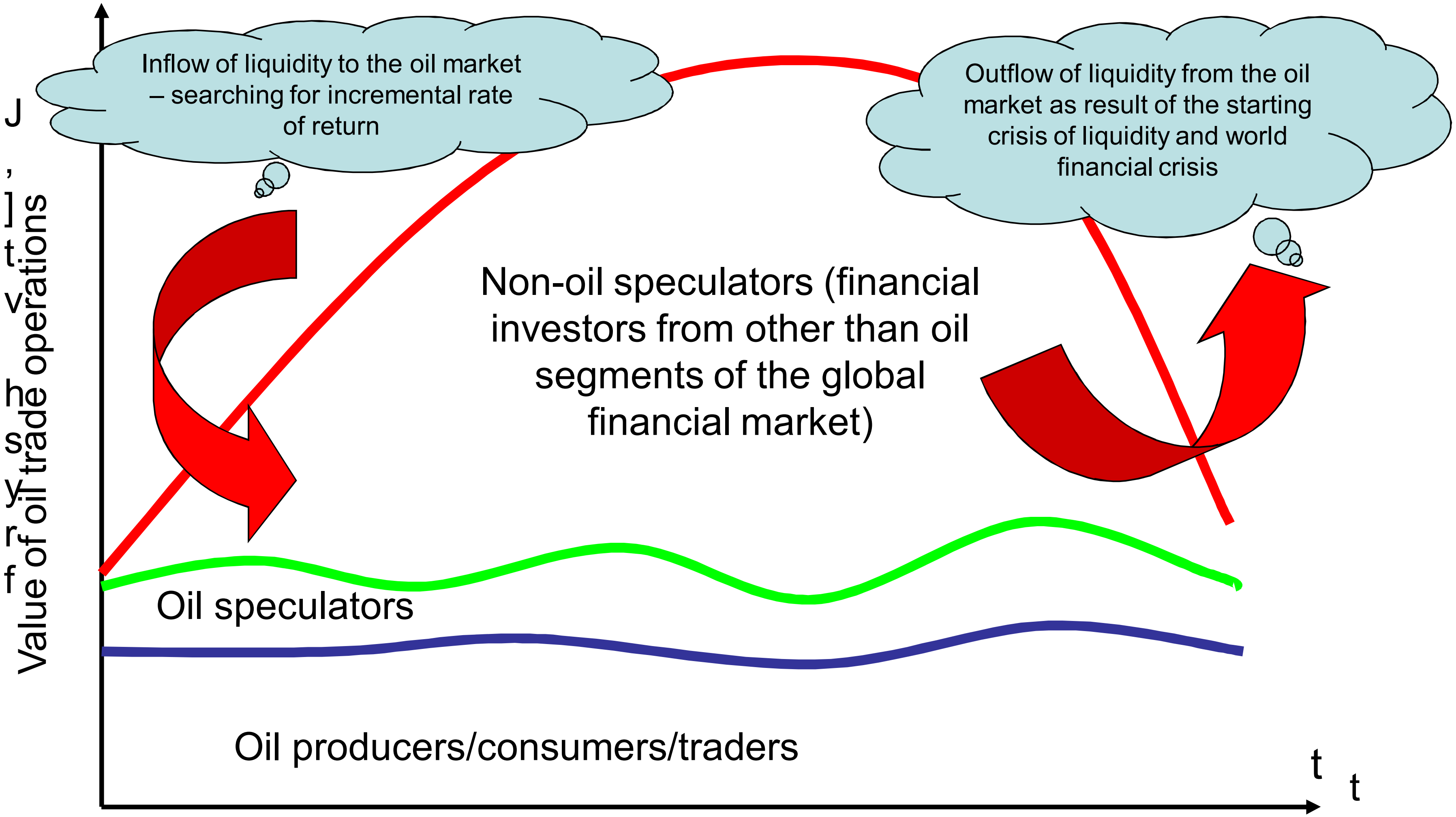
Key international petroleum exchanges and spot trade centers



Correlation of the scales of oil, commodities and financial & monetary markets (order of the figures)



Role of non-oil speculators (global "financial investors") in forming "price bubble" at the global oil market in 2007-2008 (principal scheme)



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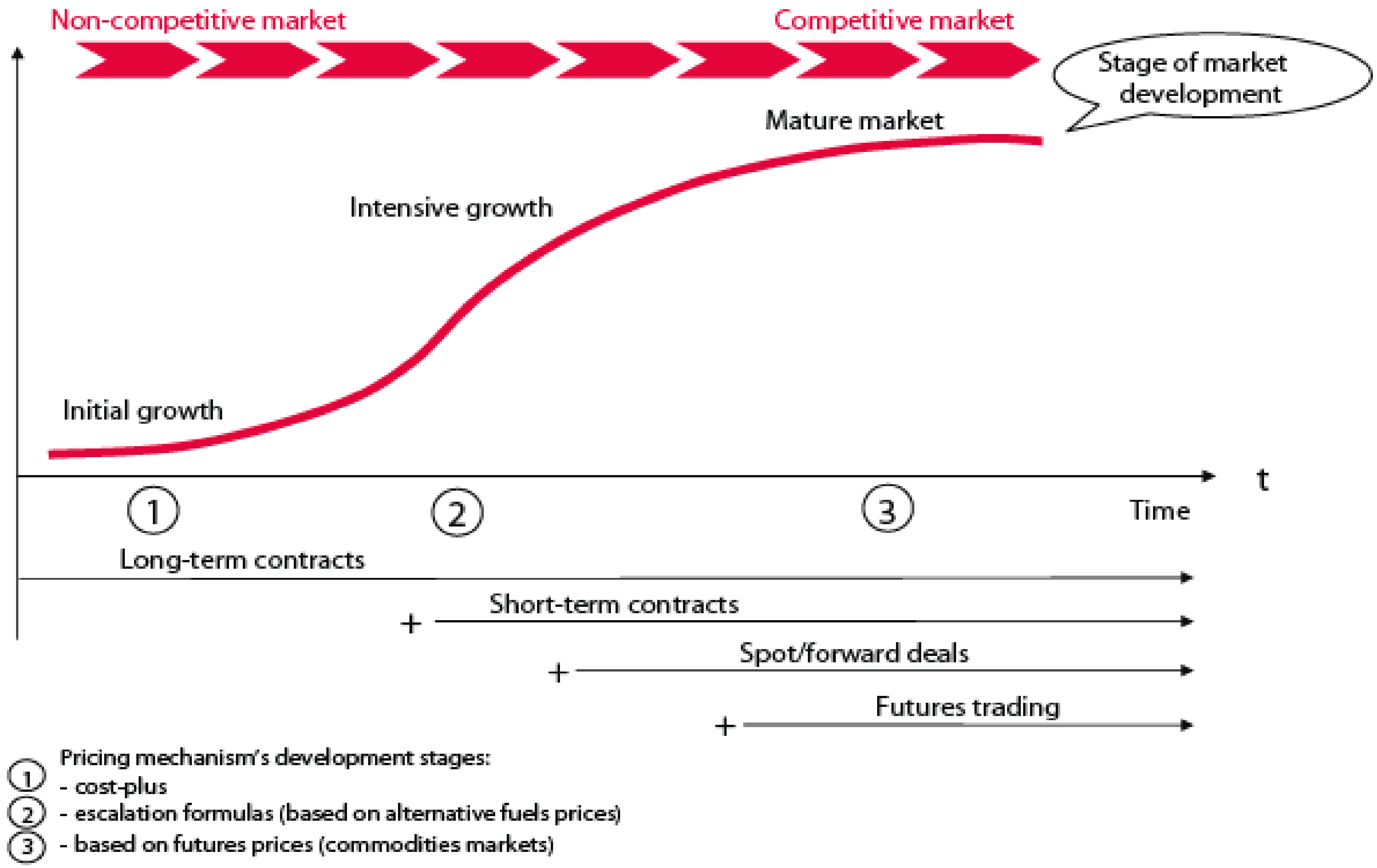
EVOLUTION OF GAS MARKETS: CORRELATION OF DEVELOPMENT STAGES, CONTRACTUAL STRUCTURES & PRICING MECHANISMS



Source: "Putting a Price on Energy: International Pricing Mechanisms for Oil & Gas", Energy Charter Secretariat, 2007

Regional Specificity: Will Gas follow Oil to Become a Global Commodity?

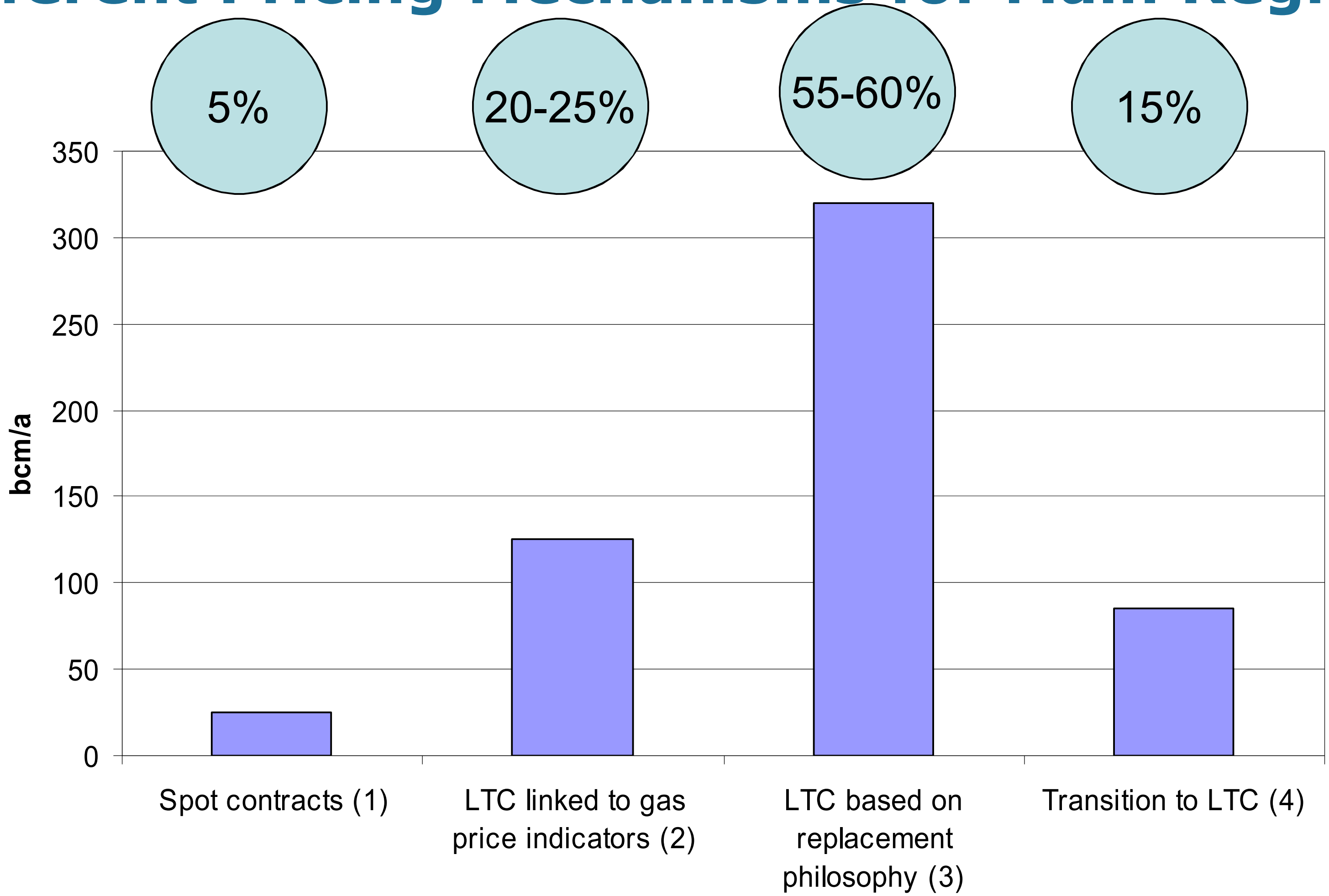
Will Gas Follow Oil to Become a (Global) Commodity?

North America and United Kingdom		Continental Europe and Japan / Korea
➢ development based on own resources, no initial dependence on imports		➢ high import dependence from the start
➢ supply based on small to medium sized gas fields		➢ supply based on imports from giant / super giant fields
➢ standardised rent taking development decision by private players		➢ rent maximisation of exporting countries development decision by exporting country
➢ demand elasticity from gas to power generation		➢ limited demand elasticity
➢ gas-gas competition but price path for gas still tracks oil prices		➢ oil prices as reference in price formula
	Linkages	
market restructuring as of 1980s	⇦ **model for reform**	**market restructuring as of late 1990s**

North America		UK	LNG trade	Continental EU		Japan/Korea
Hubs created by industry, churn 100, many players, high LNG absorption potential.	⇔	NBP created by regulation, churn 15 to 10, many players, limited absorption of LNG.	no LNG Hub but LNG as price transmitter ⇔	few industry hubs, churn <10, few strong players, dominance LTCs.	⇔	no hub so far, few strong players, dominance LTCs.

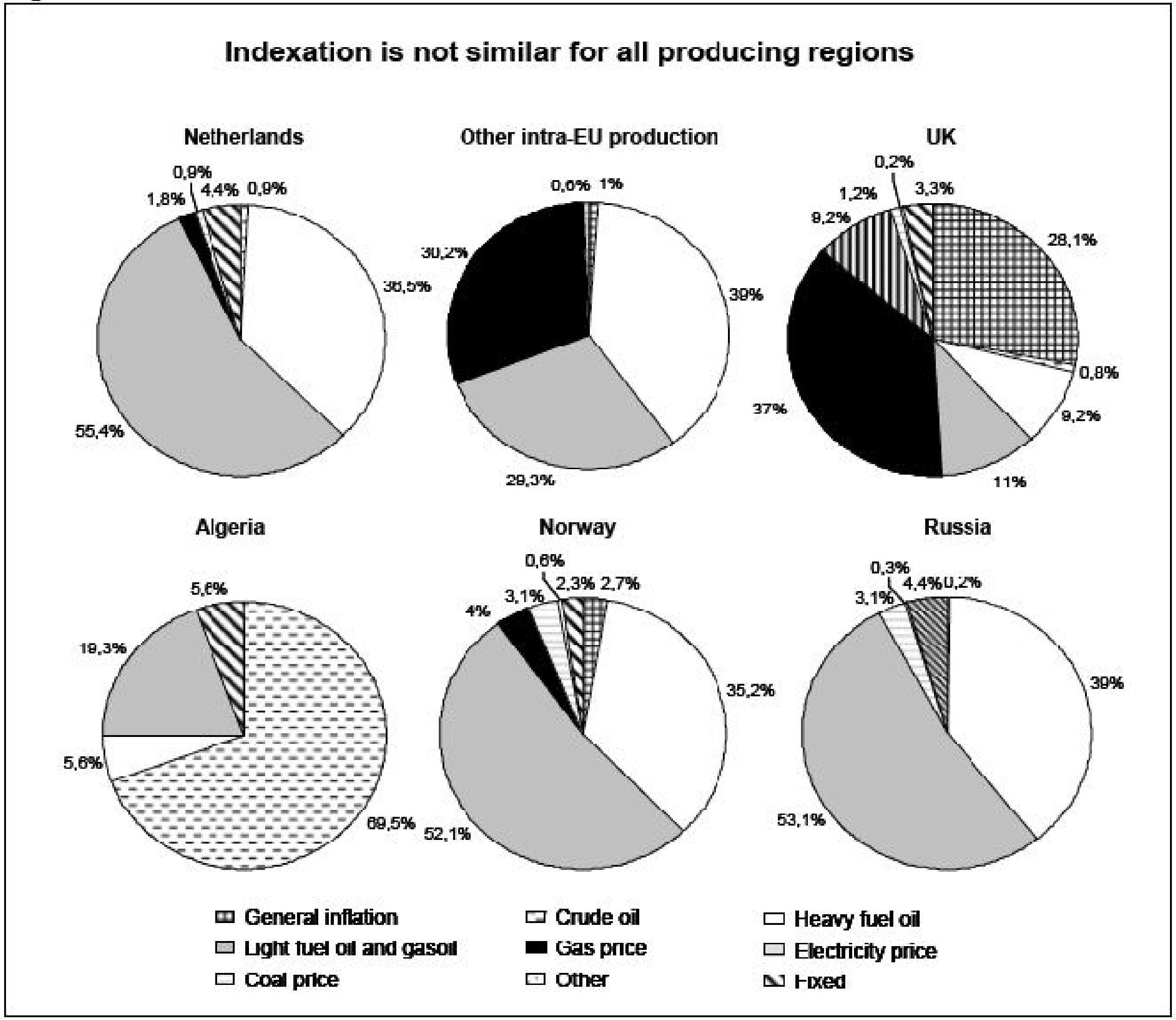
Source: "Putting a Price on Energy: International Pricing Mechanisms for Oil & Gas", Energy Charter Secretariat, 2007

Estimated International Gas Trade (2005): Different Pricing Mechanisms for Main Regions



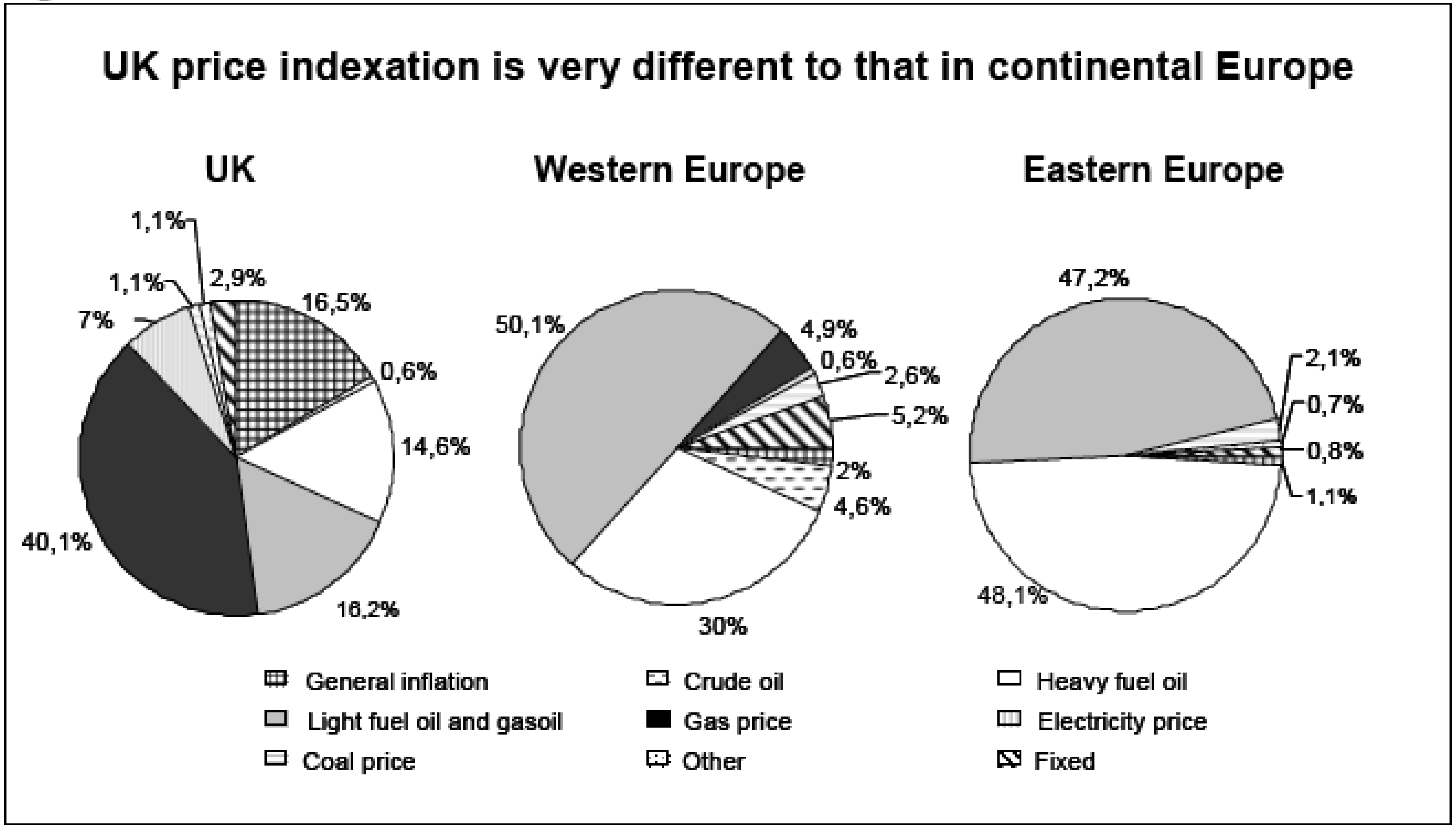
Source: BP (2006)
(1) LNG to USA, UK and other spot LNG; arbitrage on the UK-Belgium Interconnector
(2) Pipeline Canada-USA, pipelines to UK (BBL, Langeled) and new Dutch exports
(3) All imports by Continental Europe (incl. accession countries) less spot LNG under (1
(4) Trade with FSU now in transition from quasi-barter deals to LTCs, 2004 figures

LTGEC: Indexation by Producer



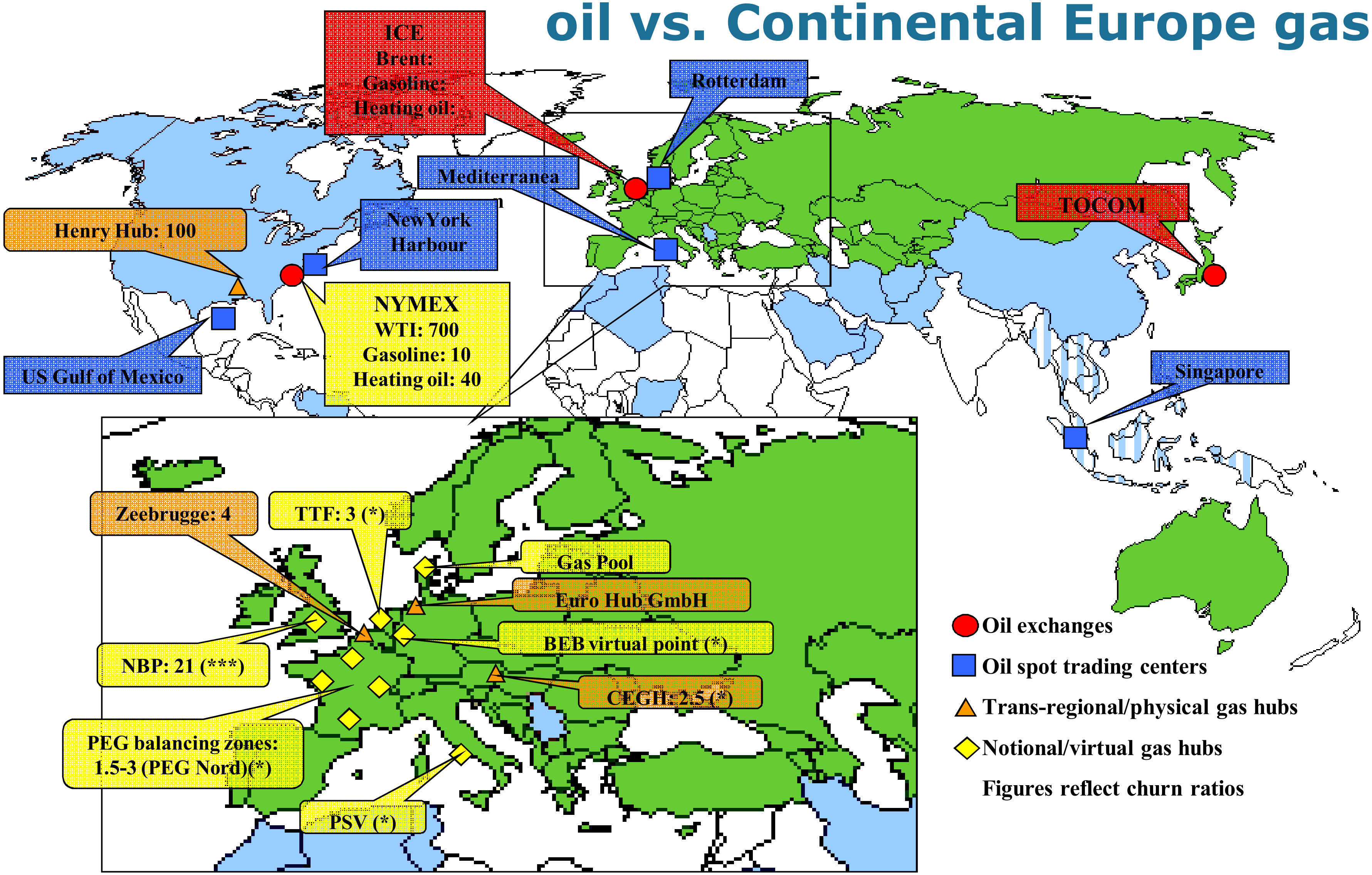
Source: Energy Sector Inquiry 2005/2006

LTC: Indexation by EU Region



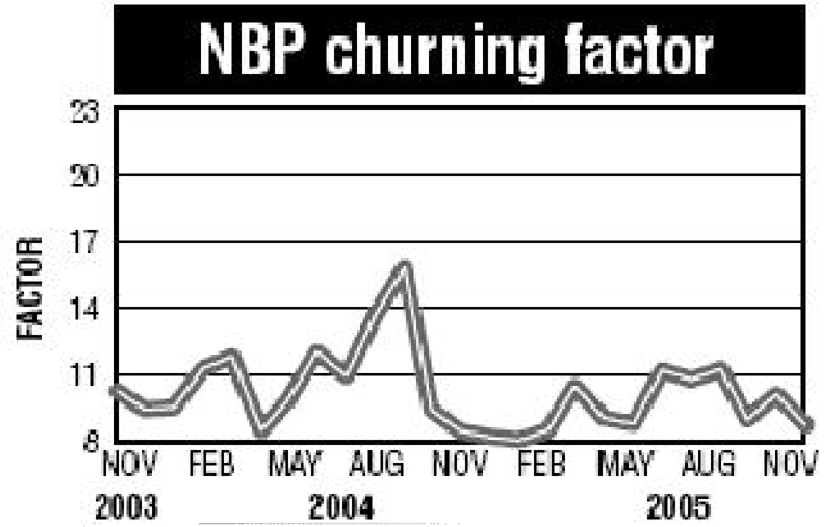
Source: Energy Sector Inquiry 2005/2006

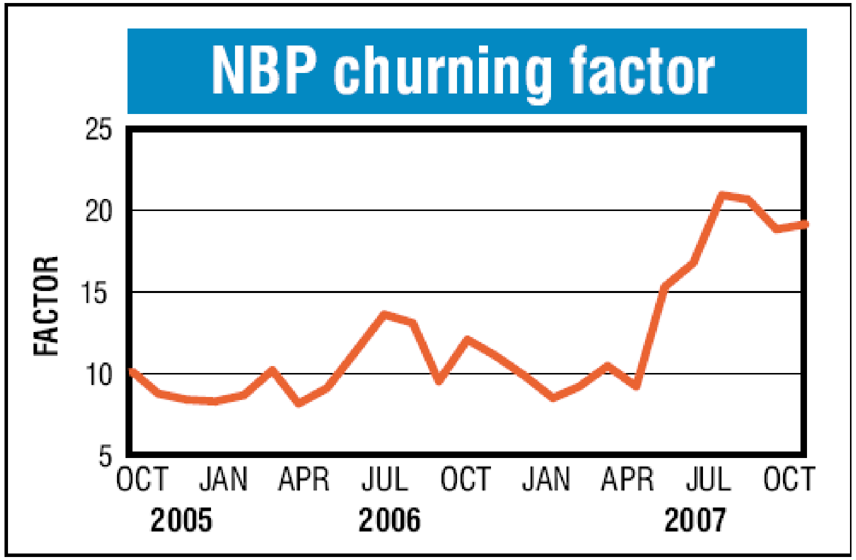
Comparative liquidity of marketplaces: worldwide oil vs. Continental Europe gas

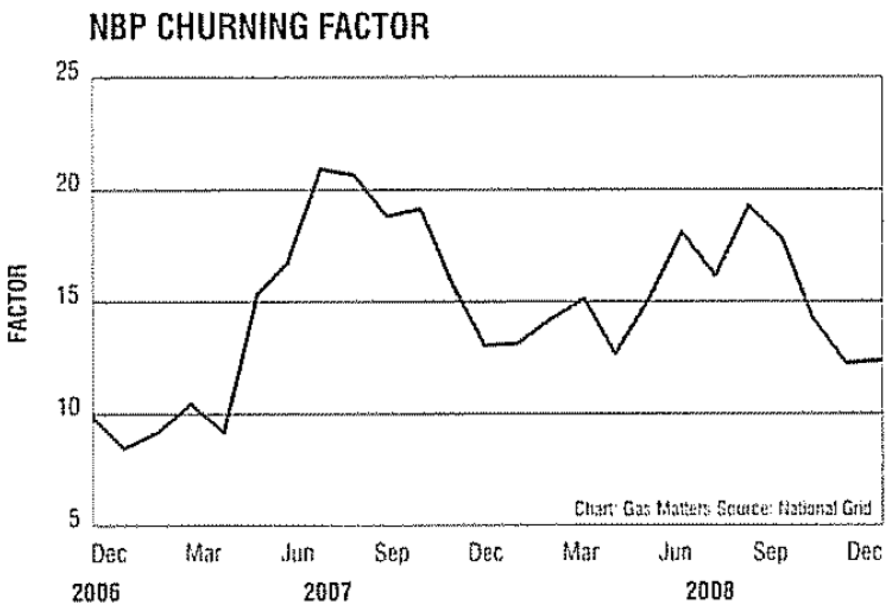


(*) BEB hub = Bunde (Germany) at German/Dutch border, CEGH = Central European gas hub (Baumgarten, Austria), NBP = Notional Balancing Point (UK hub), PEGs = French hubs (GdF), PSV = Punto di Scambio Virtuale (Italian hub), TTF = Title Transfer Facility (Dutch hub); (**) 2004 – 2006 average; (***) 8-14 during the 2004 – 2006 period

UK NBP churning factor 2003-2008

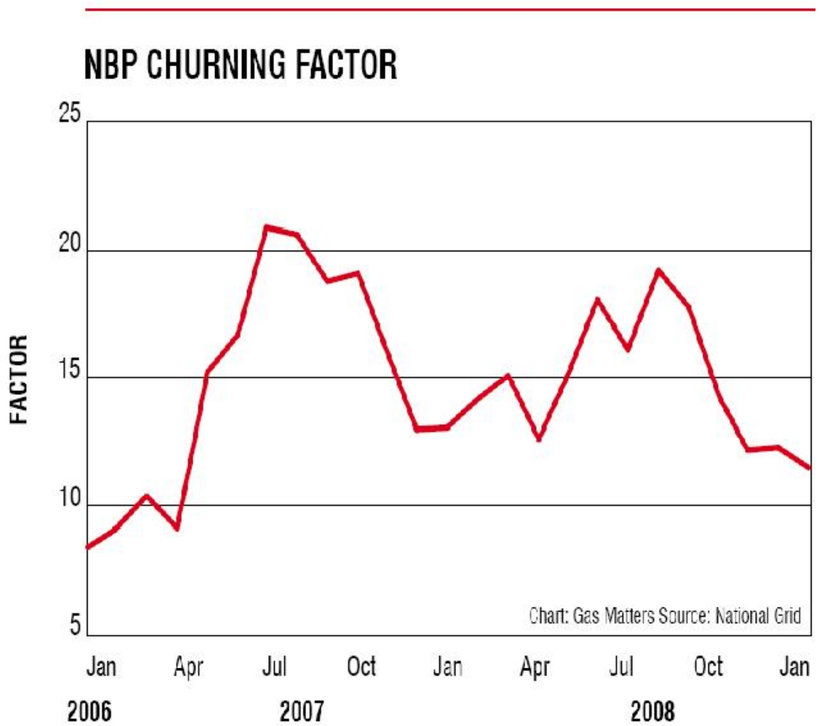


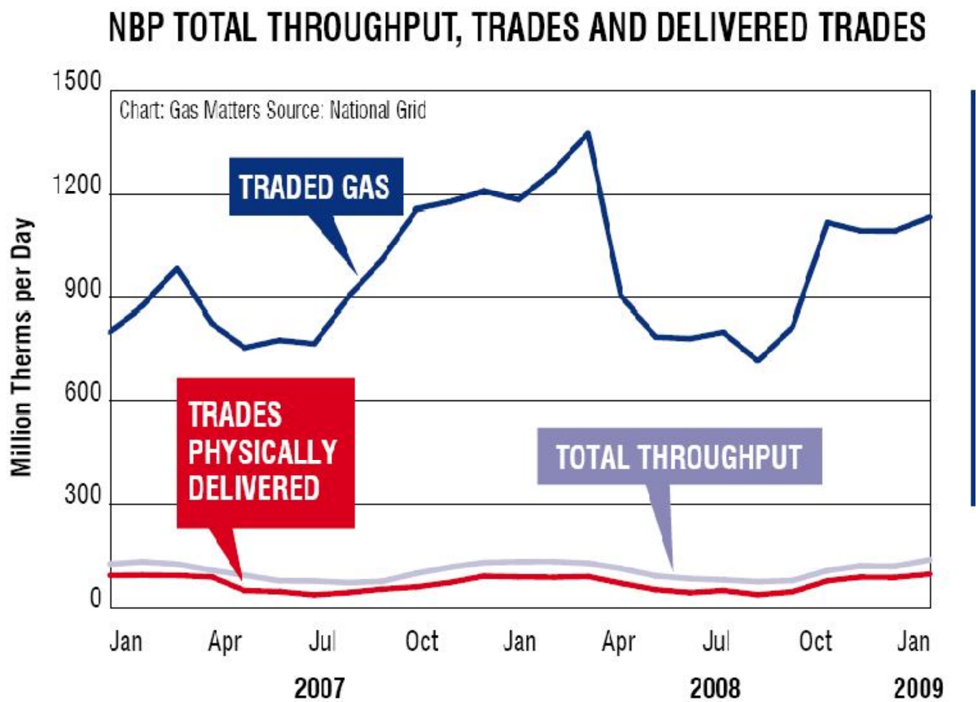




Source:
Gas Matters,
different issues

UK NBP churning factor 2007-2009 – and related volumes





Source: Gas Matters, March 2009, p.29

When and how gas-to-gas competition will play a role in European gas pricing?

- European gas market is not yet ready (if would be at all) to switch to gas-to-gas competition as to key pricing instrument
- There will be no revolutionary switch to gas-to-gas competition in pricing
- Pricing formulas within LTGEC will smoothly adapt to new stages of energy market developments by increasingly reflecting, where practical, gas-to-gas competition as one of ingredients

Questions for Discussion

- Gas: What is the most probable further evolution of contract duration and pricing mechanisms within the "broader" Europe? Marginal scenarios:
  - spot deals and exchange quotations, vs.
  - long-term contracts with pricing based on replacement values with expanding spectrum of the replacing fuels and other factors taken into consideration in pricing formulas,
- Whether gas price in Europe will continue to be pegged to prices of basket of replacing fuels with increasing number of its ingredients but with crude oil and petroleum products preserving their leading role in pricing formulas?
- Oil: Whether oil prices will continue to be pegged to exchange quotations (futures) at two major oil marketplaces worldwide: WTI (New York) and Brent (London)?
- Whether oil & gas prices will continue to be pegged to US dollar as to universal currency of the transactions? To which currency(ies) departure from US dollar could take place?

Thank you for your attention

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