Russian Gas and European Energy Security : Beyond Clichés

World Energy Council Workshop

Energy Vulnerabilities in Europe

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What clichés are we talking about?

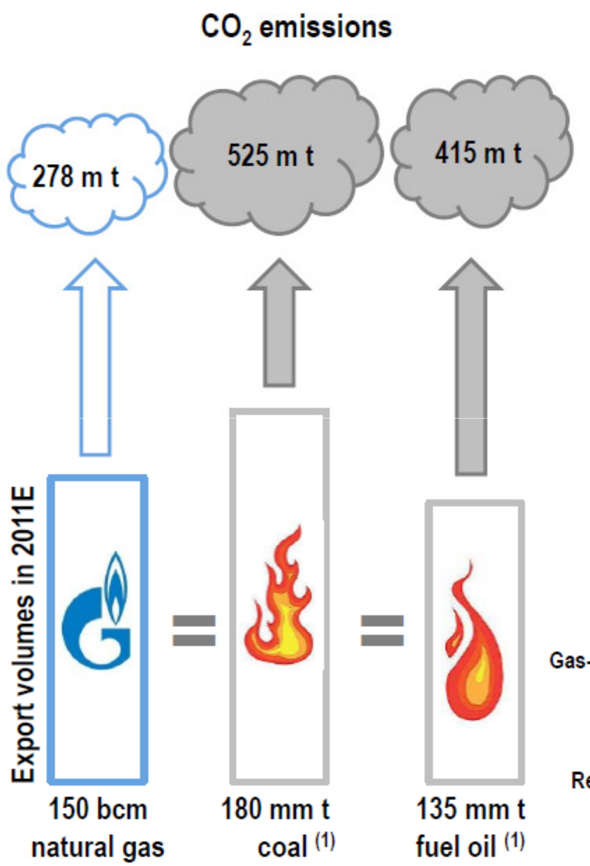
1. Future of European energy security depends on renewables
2. Energy security = energy independence
3. EU energy security depends on the will and capacity of European authorities to put pressure on suppliers
4. Further liquidity of energy exchange market places will foster more energy security

Cliché #1 :

Future of European energy security depends on renewables development

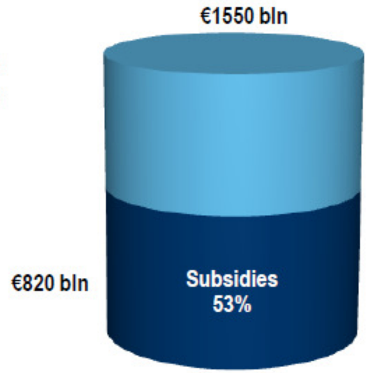
European energy security depends on the viability of its energy mix, which also must fullfil the EU's climate ambitions

Cost-efficiency of “gas scenario” model



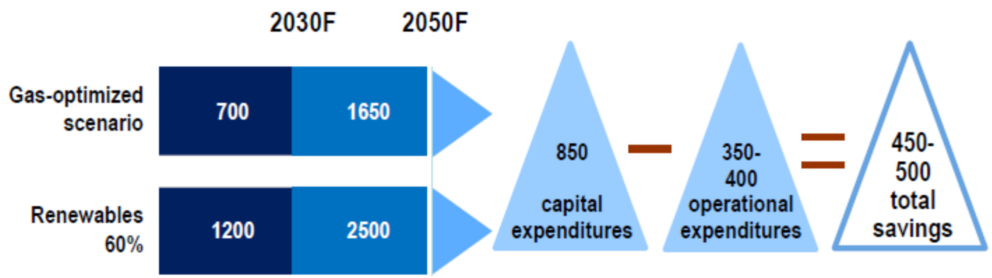
1. by calorific value

Renewable subsidies and other incentives are equal to €820 bln or 53% of the total All-In cost of renewable generation over the next 20 years.



Source: Pace Global

Cumulative cost advantages of gas-optimized scenario, Euro bln

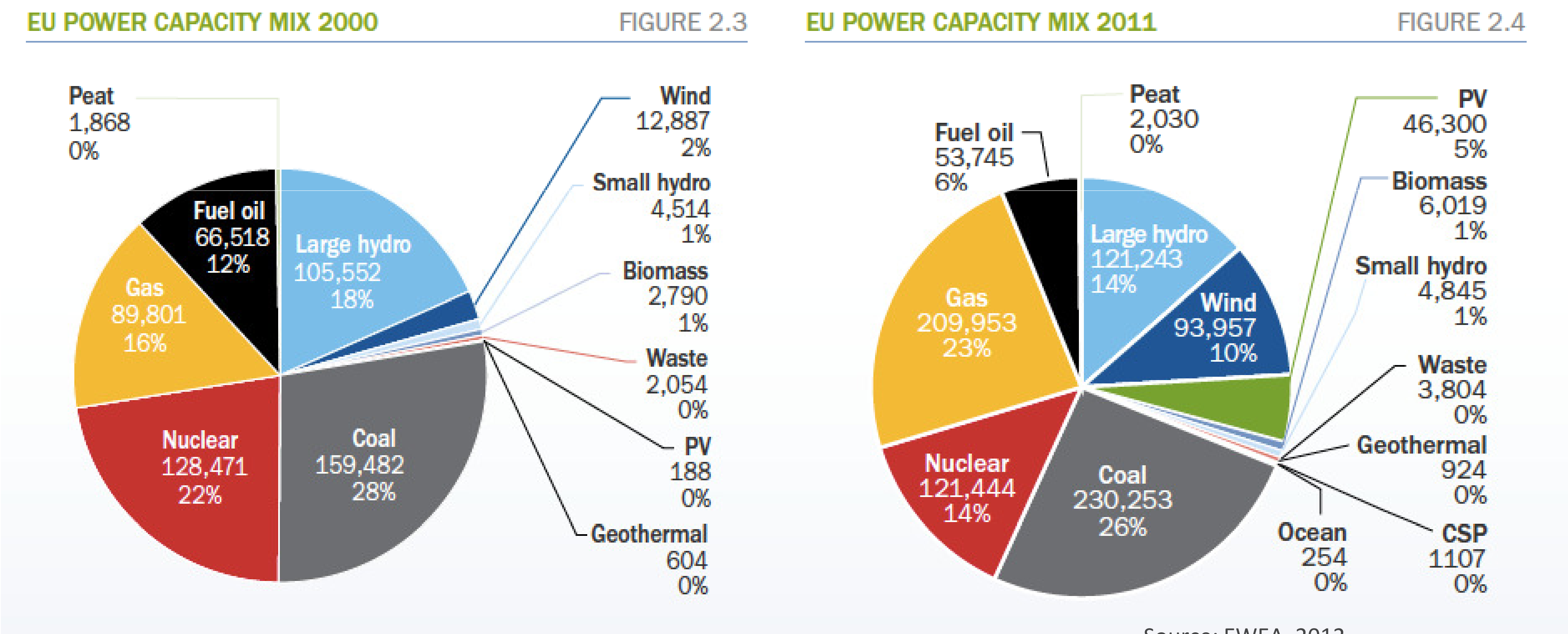


Source: McKinsey for the European Gas Advocacy Forum

Based on renewable resource options, up to $1500bn (820 bn from EU State budgets) must be invested; under the “gas scenario” model 500 bn dollars less by 2030, and 850 bn less by 2050.

EU energy security is also power generation security

→ Gas power production is flexible: it can provide a “base load”, mid-merit, cover peak loads, or act as a back-up for downfalls in renewable energy production



Source: EWEA, 2012

Cliché #2 :

Energy security = energy independence

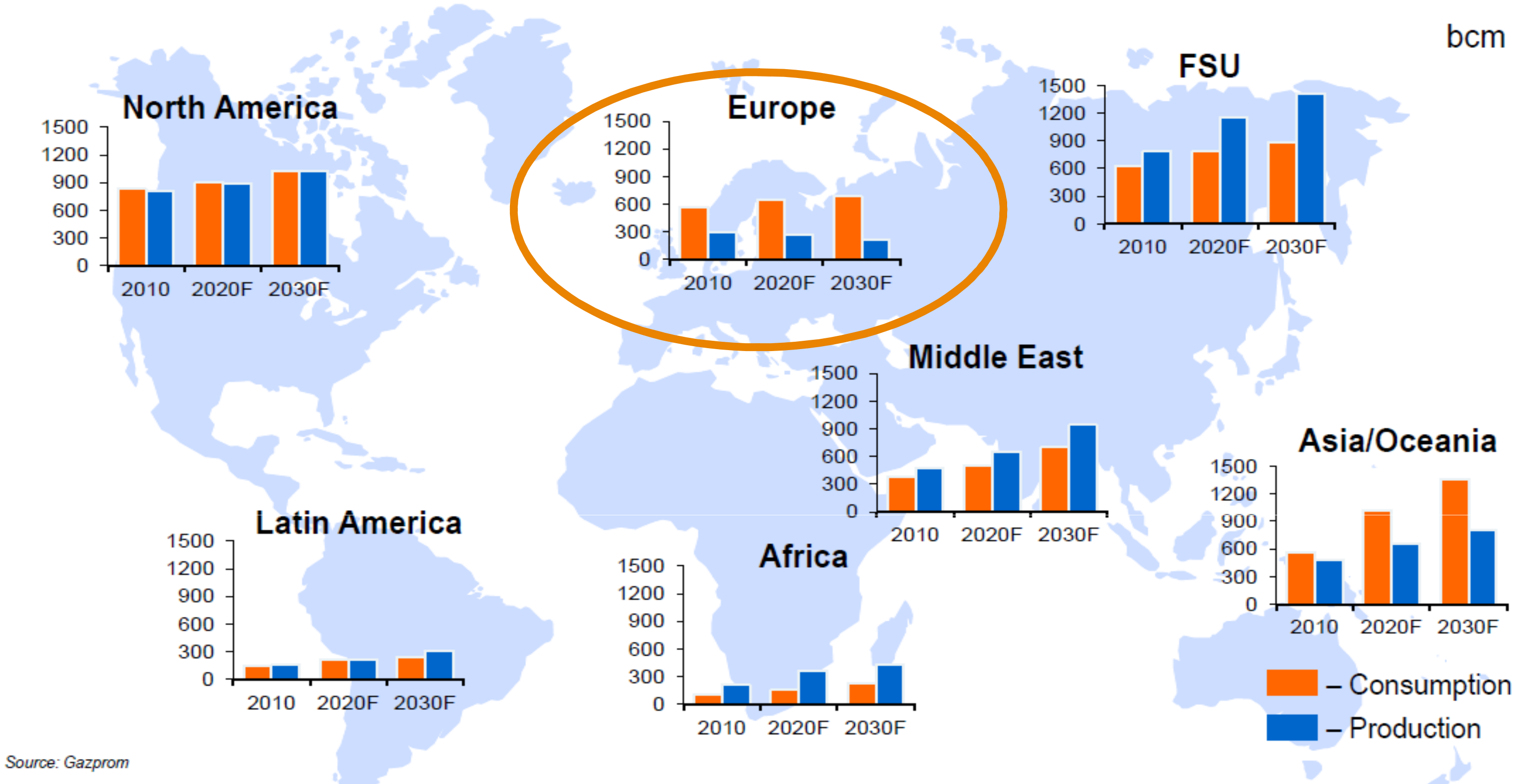
Energy security =

security of supply

security of transit

security of demand

Growing dependence of the European market



Source: Gazprom

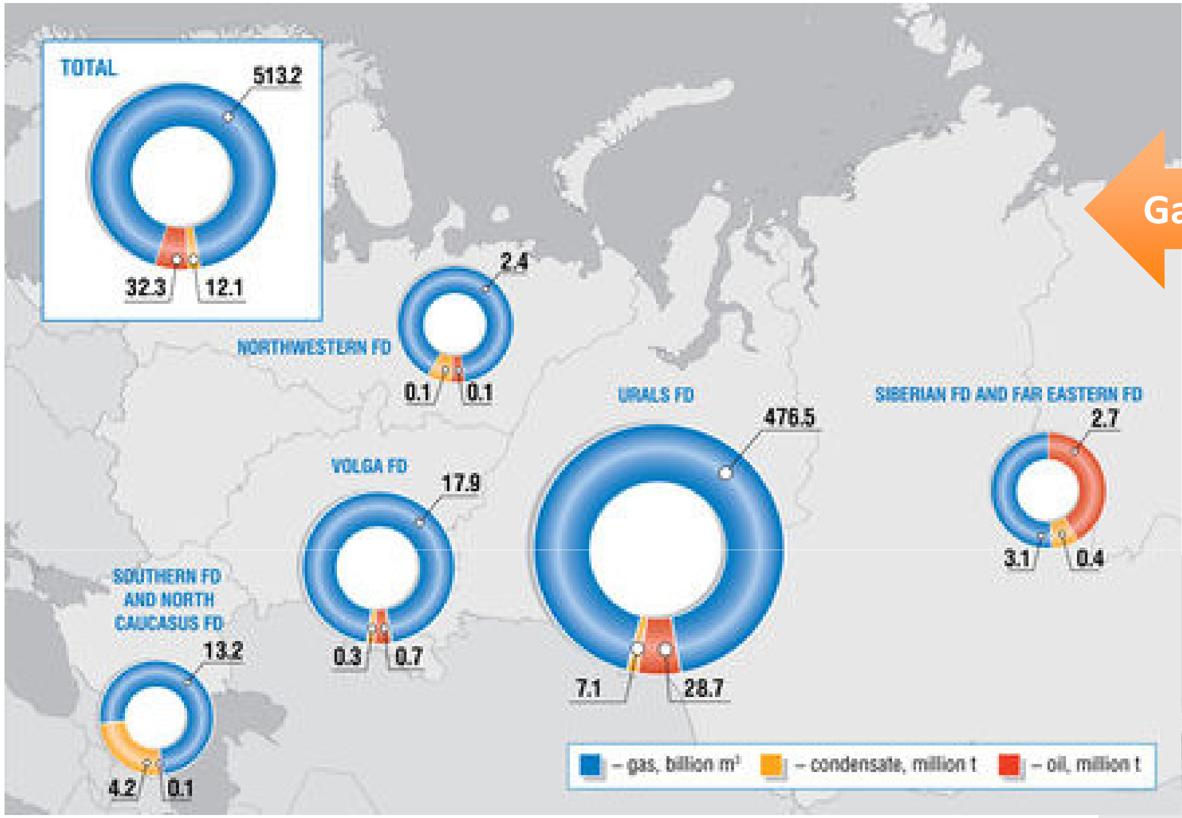
Europe and Asia are two most important markets

Uncertainties are growing in the global picture of the gas business:

- Uncertainties about gas importation demand in EU and in USA;
- Uncertainties about price dynamic;

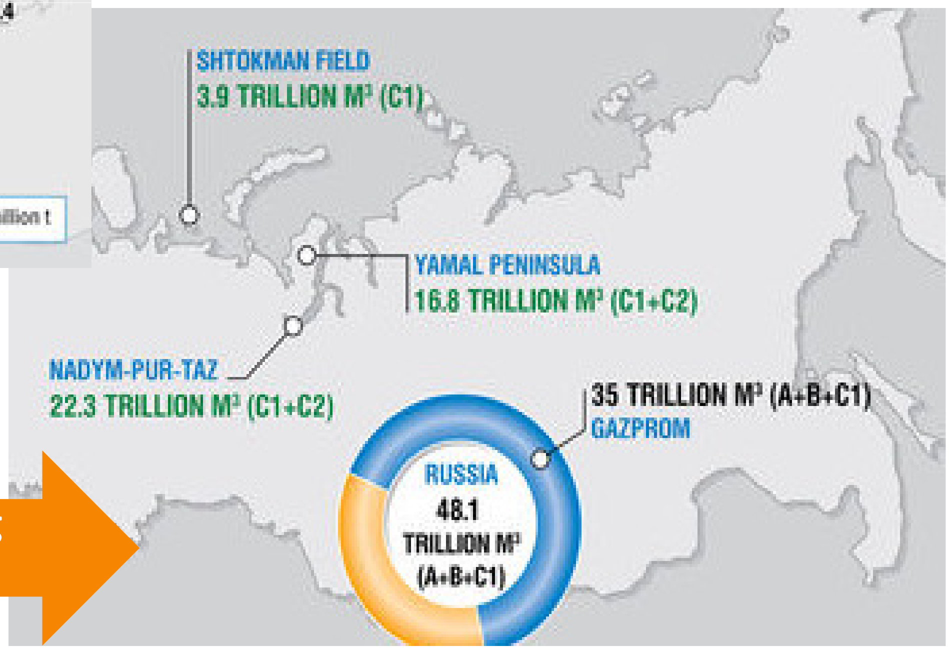
→ But growth of gas demand is not contested as a solid fundamental

Gazprom's production and reserves

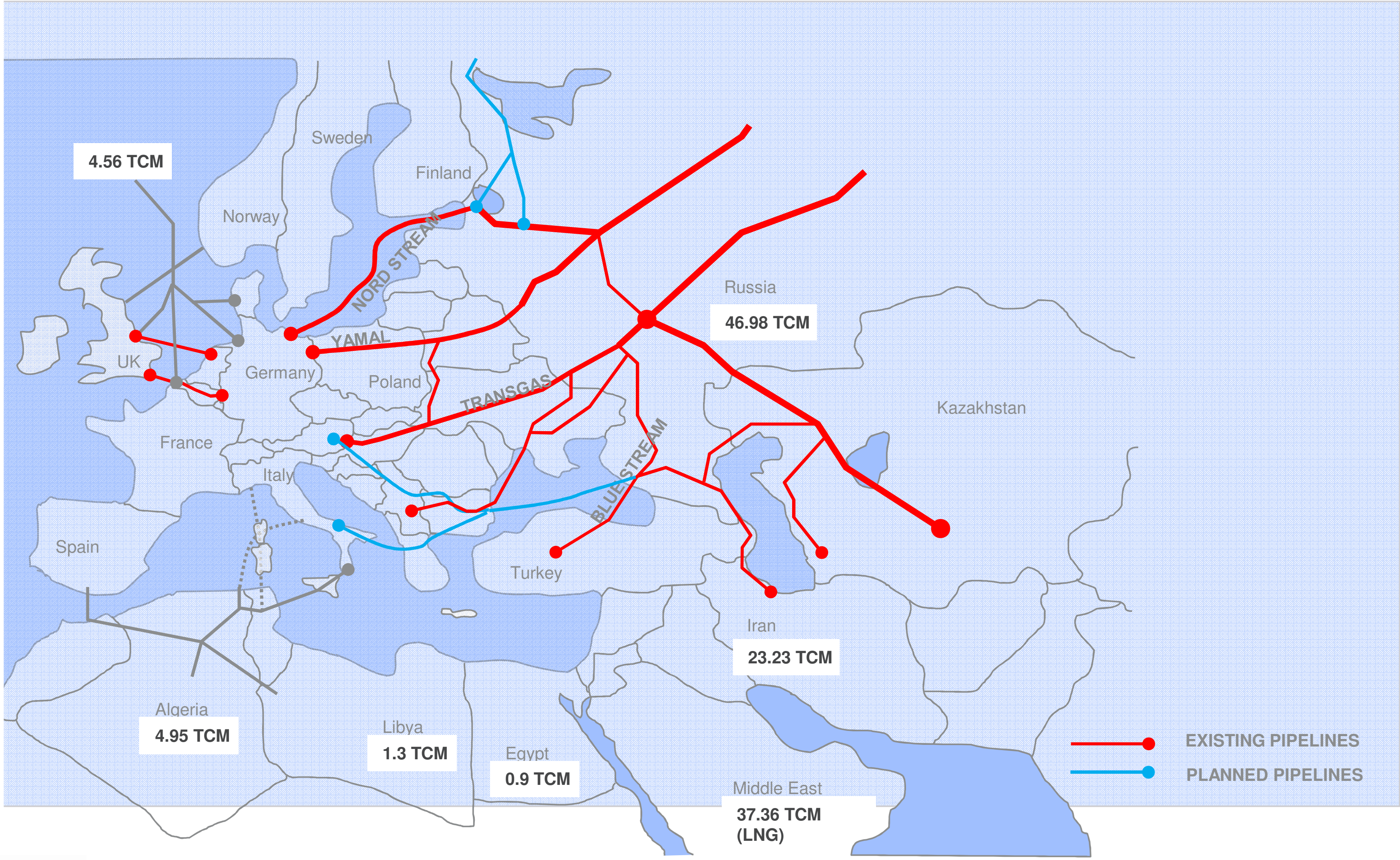


Gazprom's production in 2011…

… and reserves in promising production provinces



Supply routes from Russia



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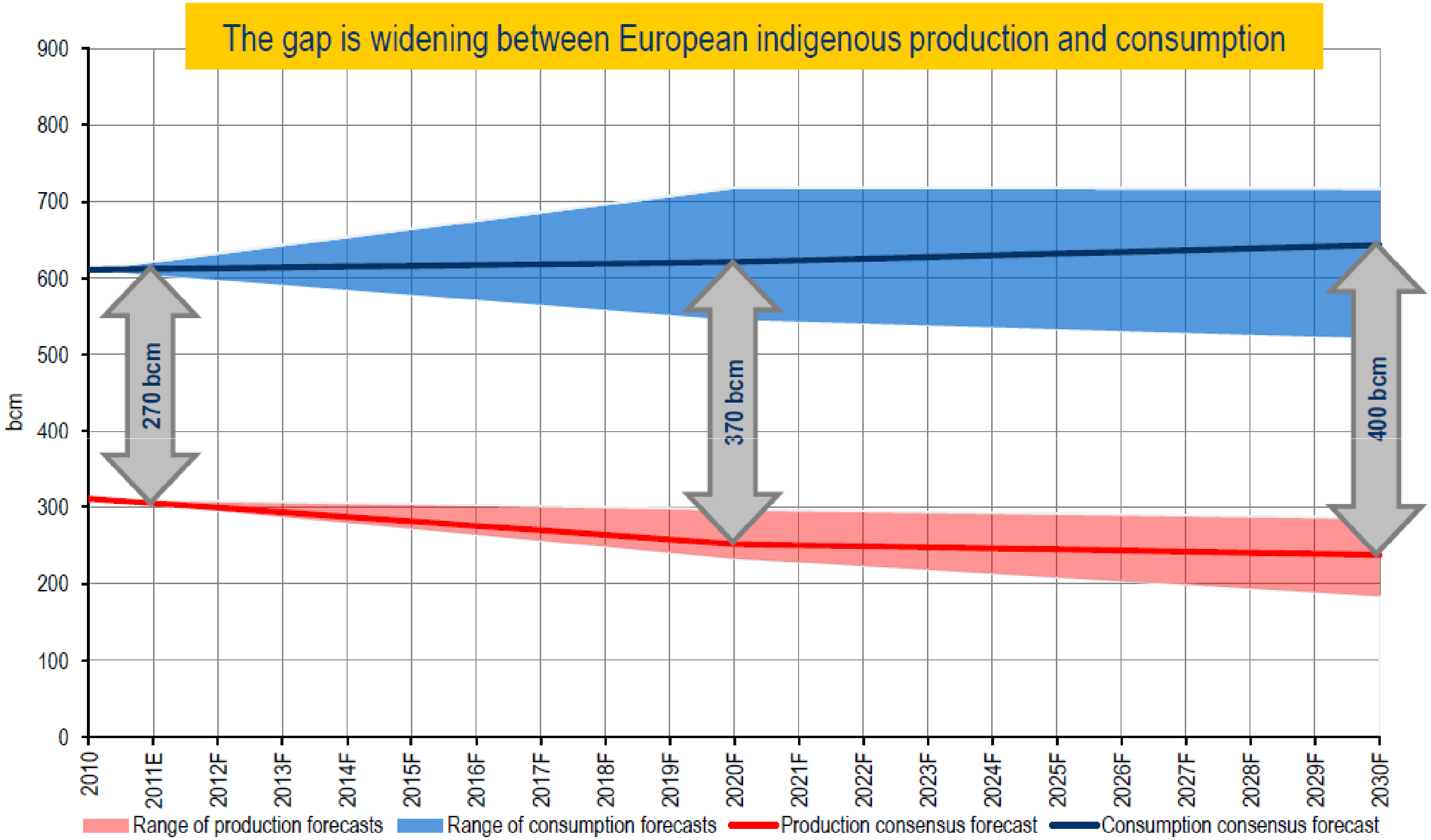
Cliché #3:

EU energy security depends on the will and capacity of European authorities to put pressure on suppliers

Energy security depends on the ability to foster an apolitical, business-oriented dialogue with suppliers

Europe's decrease of indigenous production and need for extra imports

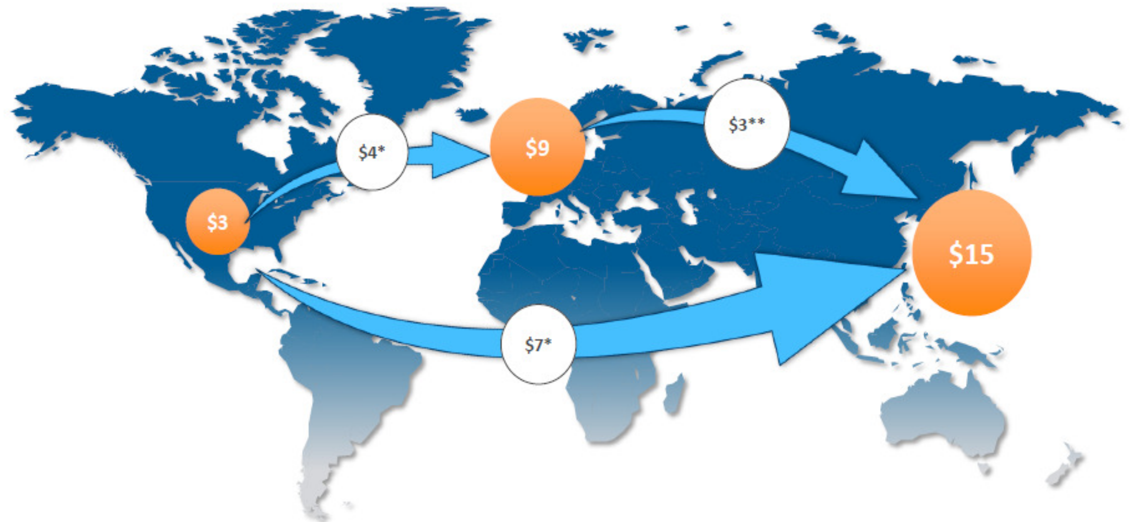


Source: Consensus projections derived from EIA, CERA, Greenpeace, IEA, EuroGas, PIRA, EC, Cedigaz

On a long term basis, Europe is a first class market for the Gazprom Group, with an increasing demand for gas imports.

Emerging trends in the global gas business

2007

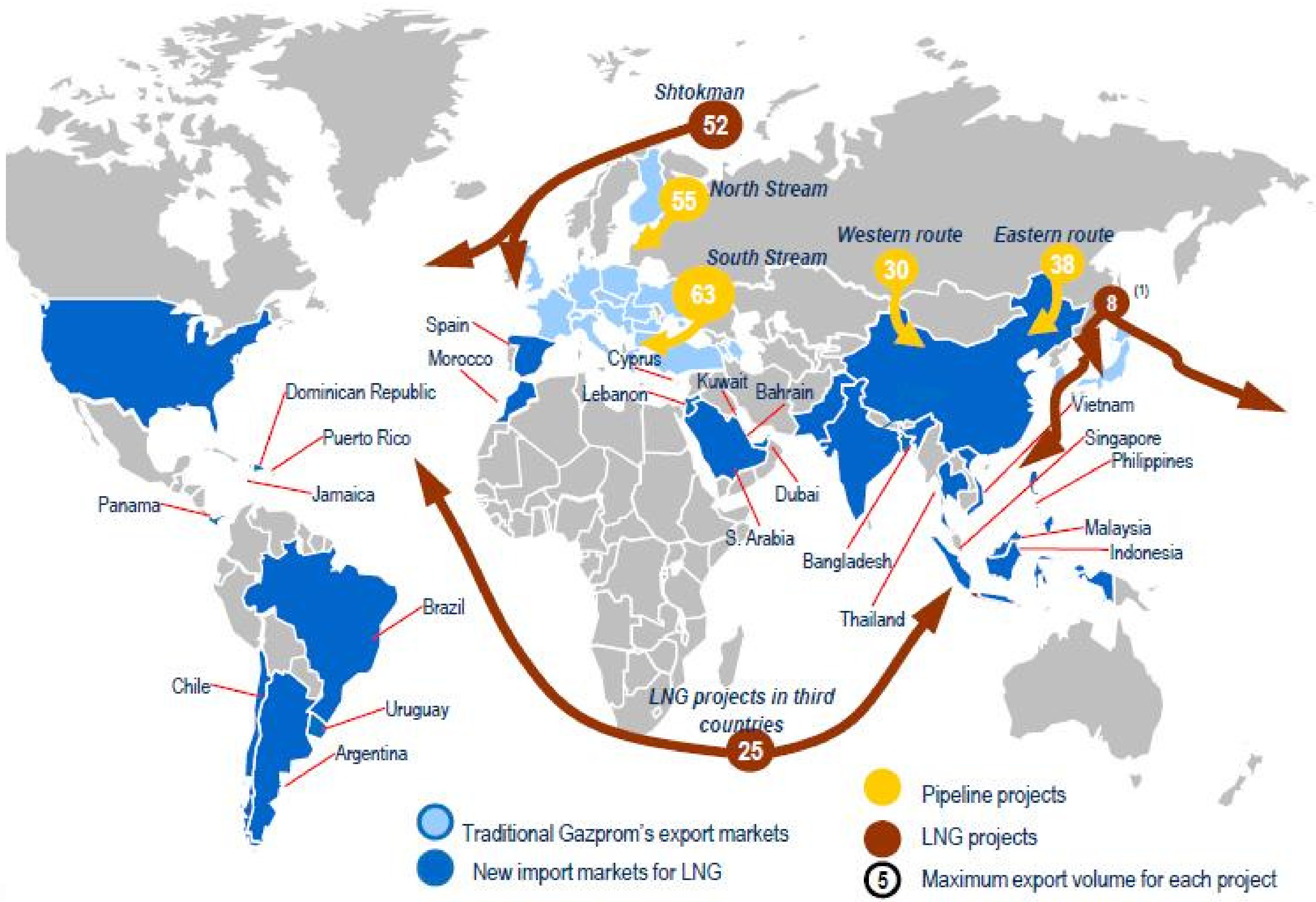


2012

- Price differentiation between regional areas will keep driving the spot LNG flows and gas project development
- LNG role is growing but is only dominant in Asian markets, and will remain marginal in US & Europe;
  - Shipping costs are more and more a key factor
- Back on the way to «a single global gas market » model ?
  - Only if price volatility can be kept under control

→ **Uncertainty about forecasts s is growing in energy markets – is it good to increase this tendancy?**

Example: diversification of GP marketing routes



Cliché #4:

Further liquidity of exchange market places will enable more energy security

EU energy security depends on long-term projects, and thus on long-term contracts

Long-term gas contracts: a win-win option for sellers and buyers

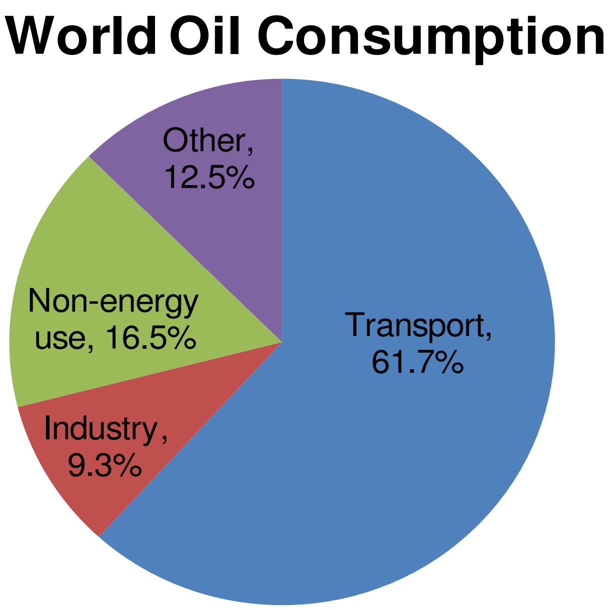
For gas consumers	For gas producers
1. Predictable pricing signal 2. Protection against the abuse of any market player 3. Flexibility and services under long-term contracts	1. Possibility to plan investments: production and transportation of gas is only reasonable under long-term contracts with off-take obligations (no one would construct a costly pipeline without firm guarantees that it will be filled with gas) 2. A fair gas price

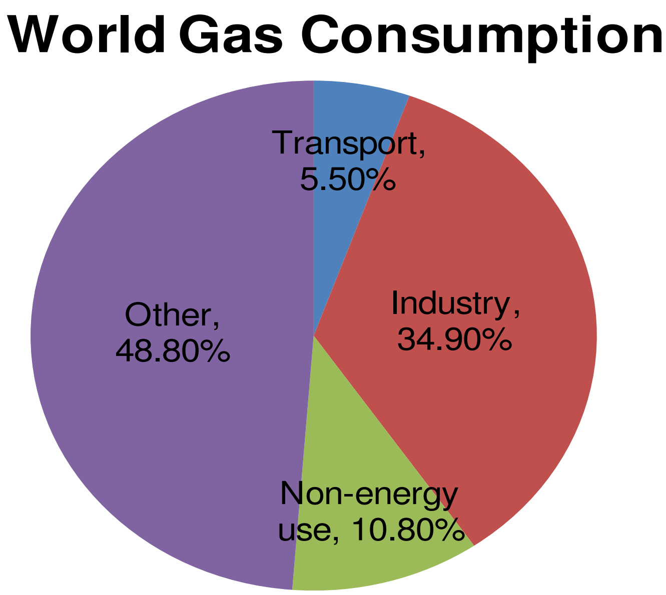
SECURITY OF SUPPLY

SECURITY OF DEMAND

Rational behind oil-indexation

- Oil and gas continue to share many commonalities; price indexation is a natural extension of this:
  - Similar exploration and drilling technologies
  - Similar cost structures
  - Increasing convergence in end-use markets

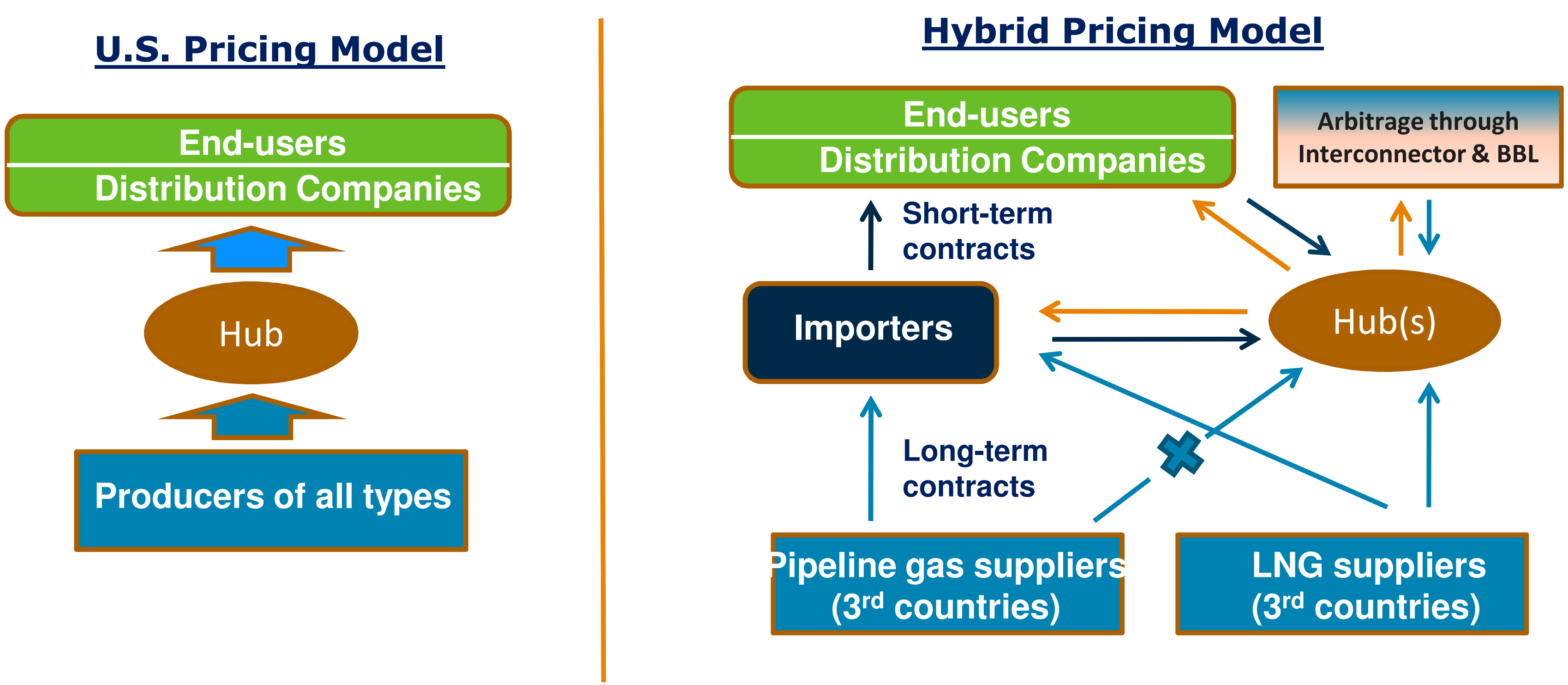




The specificities of Continental Europe
Fundamental differences between US & Continental Europe Pricing Models

1	USA	Hub price is a function of total demand and supply
	Continental Europe	Hub prices are a function of multiple examples of arbitrage
2	USA	One price at a level determined by Henry Hub
	Continental Europe	Multiplicity of prices Company supply managers determine the price of gas portfolio
3	USA	Majority of gas is sold on hubs Majority of LT export contracts incorporate diversion clause
	Continental Europe	Small volumes of physical trade on hubs represent primary sales The remaining volumes of gas traded come from LT contracts for pipeline gas
4	USA	High churn ratios
	Continental Europe	Churn ratio below 4 (low, but sufficient for balancing market)

Hybrid pricing model: how does it work ?



A hybrid pricing model in Europe's gas market

1. Long-term contracts and oil-indexation: leading role, secured supplies
2. Spot-market: balancing role, arbitrage for companies at the margin

→Closely interconnected, healthy balance between its two components

Summary: gas price models & contracts

(1) Be aware that except in the UK & US, the oil index reference dominates the natural gas business:

- 90% of LNG contracts are oil indexed;
- Asia, Africa & South America business - purely oil indexed;
- In Europe, nearly all producersare mostly or entirely working with oil-indexed contracts.

(2) Bear in mind that the recent appetite of EU regulators and some EU utilities for « spot » gas indexed reference is due to the low level of spot prices.

- However, very few European end-customers are ready to sign spot market indexed contracts: balancing gas delivered at day ahead price reference ? Flexibility no more included in the contract but delivered at spot market price value ?
- There is large confusion between « price level » (spot price level versus LT contractual price level), « contractual model » (long term contract with TOP principle, availability guarantee & large flexibility included versus short term contracts with no flexiblity and no guaranty of delivery) and « price indexation principle » (oil versus gas index).

(**3) The relevance of the hybrid pricing model has to be assessed with regards to the European market's own characteristics and should take into consideration concerns over energy security:**

- The European market is far from becoming liquid – and it will take a long time to build up the infrastructure necessary to change the historical design of the European gas industry;
- Increasingly dependent on imports.

(4) Cooperation with external historical suppliers & partners is the best way to build up supply security in EU (instead of unilateral ukase), and there is no supply security without demand security

Thank you for your attention!

Paris, 30 November 2012