



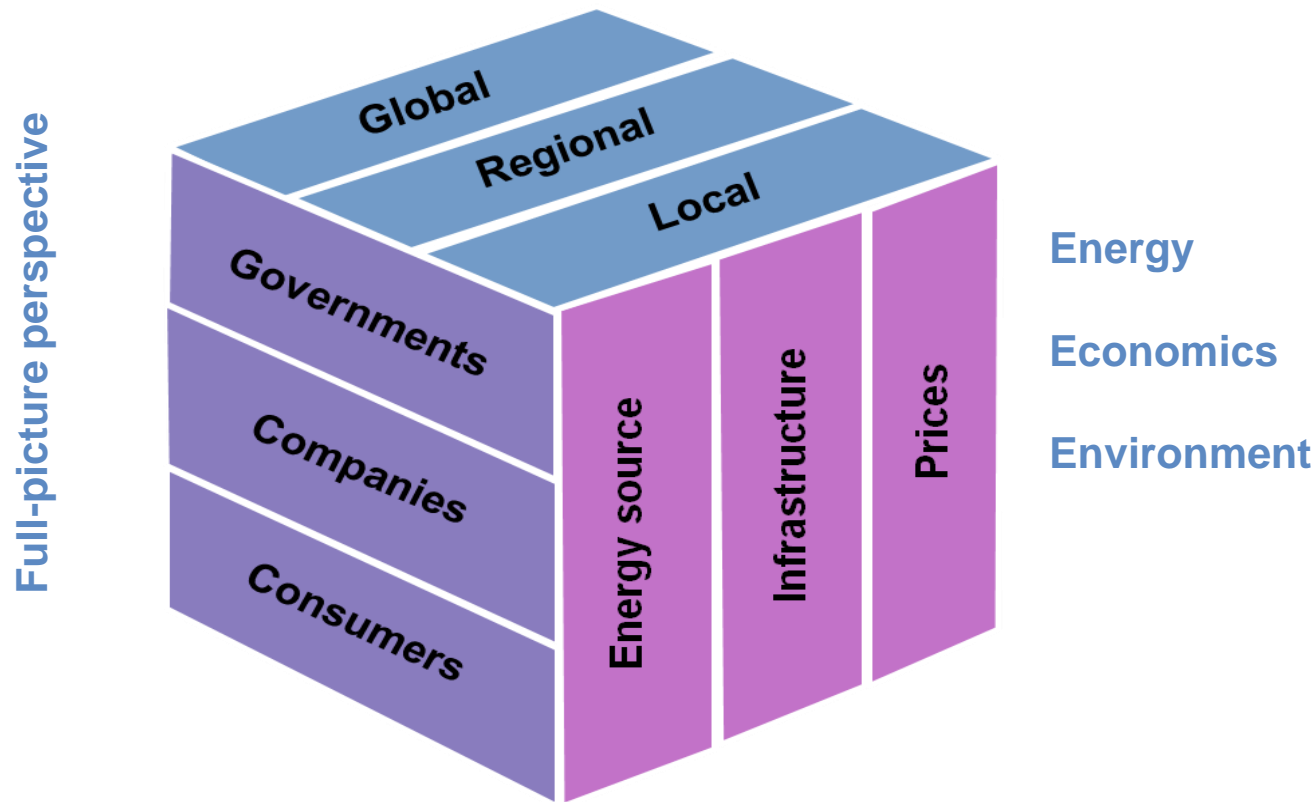
**Strategic choices for gas:
How to live with competition and uncertainty in markets?**

PGC B + C

Oran, November 2012

Karen Sund

Sund Energy helps navigate into the energy future...



Learning between countries, industries,
energies, technologies and more...

...by understanding the full picture of stakeholders

Agenda

The world is more dynamic

- Adapting quicker to fundamentals
- Appreciating dynamic energy supplies, too

The gas markets are very diverse

- By country, segment, players, regulation, price levels, alternatives
- Buyers of gas are adapting to uncertainty and diversity
- Sellers should adapt, too – optionality
- Who pays for over capacity?

Uncertainty is here to stay

- Old truths and growth rates are changing, but new opportunities, too
- Less black & white – more shades of grey

Strategy needs to develop from stiff, long term, to flexible!

Demand: “When will we be back on track”?

**After years of steady growth,
it has been taken for granted**

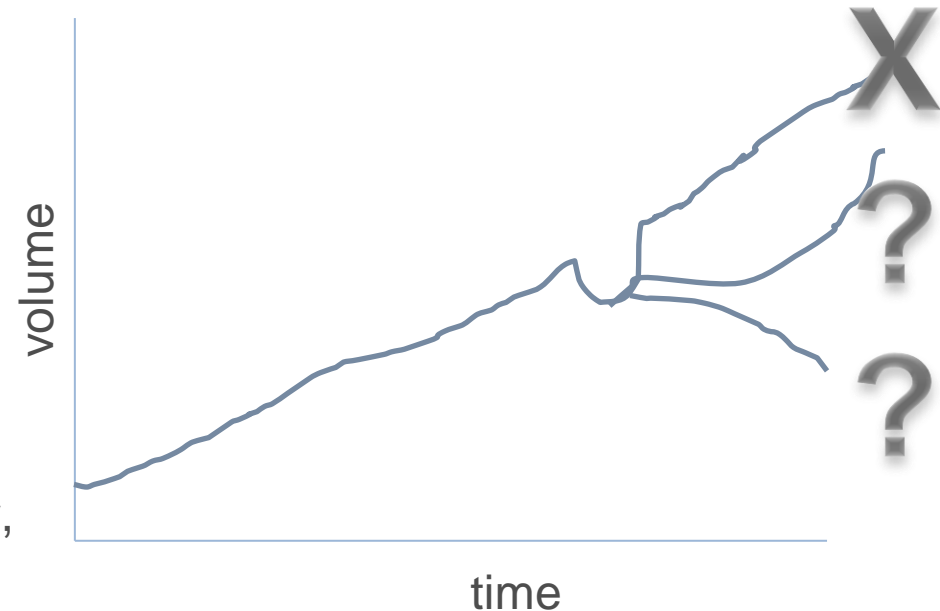
- Gas growth in electricity + emerging markets strong

Recession was a bit of a shock

- Historical fall in demand – especially industry and power generation
- Expected to correct itself and get back to targets

Forecasts need more nuance

- Prices, alternatives, payability, sources, economy, policy+++



Decision makers and portfolios – not countries

Focus traditionally on large producing and consuming countries



- Time to understand decision makers, and their portfolios, on both sides



- This could give very different “best solutions”

TSOs – the responsible adults for gas and electricity

- Not buyers or sellers but important in setting market conditions

Pension funds and other institutional investors

- At times stricter than regulators on emissions ++

Yes, the politics still matter for the role of gas

What is the future energy mix and role of gas in electricity?

- Gas expected to be the elastic band – especially in power generation
- First nuclear, coal and renewables – then the rest can be done by gas
- Electricity demand uncertain in itself – and large geographic shifts

Image and price matter in political choices here

- Cleanest and cheapest energy – the one we don't use
- Competing images of clean coal, renewable value creation, etc
- Emotions around nuclear safety and import dependency/ vulnerability

Price most important

- Perceptions of LNG being expensive and scarce is not helping

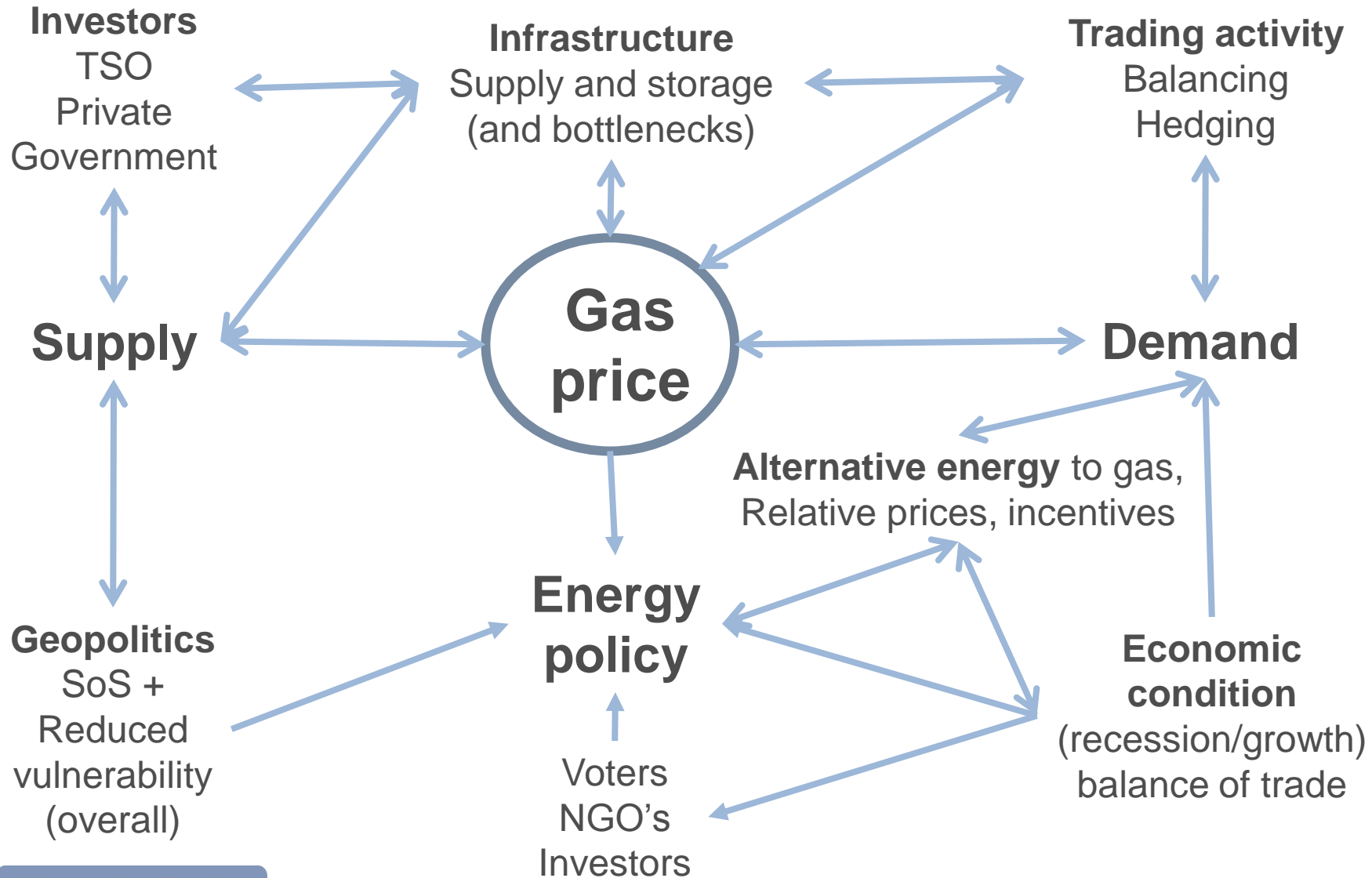
Geopolitics: Alfa countries don't like feeling vulnerable

- Own gas better than imports (own renewables better than LNG)
- Gas could replace imported oil (transportation)

How qualified are governments, regulators, voters?

- How to predict this and translate to opportunities and threats to gas?

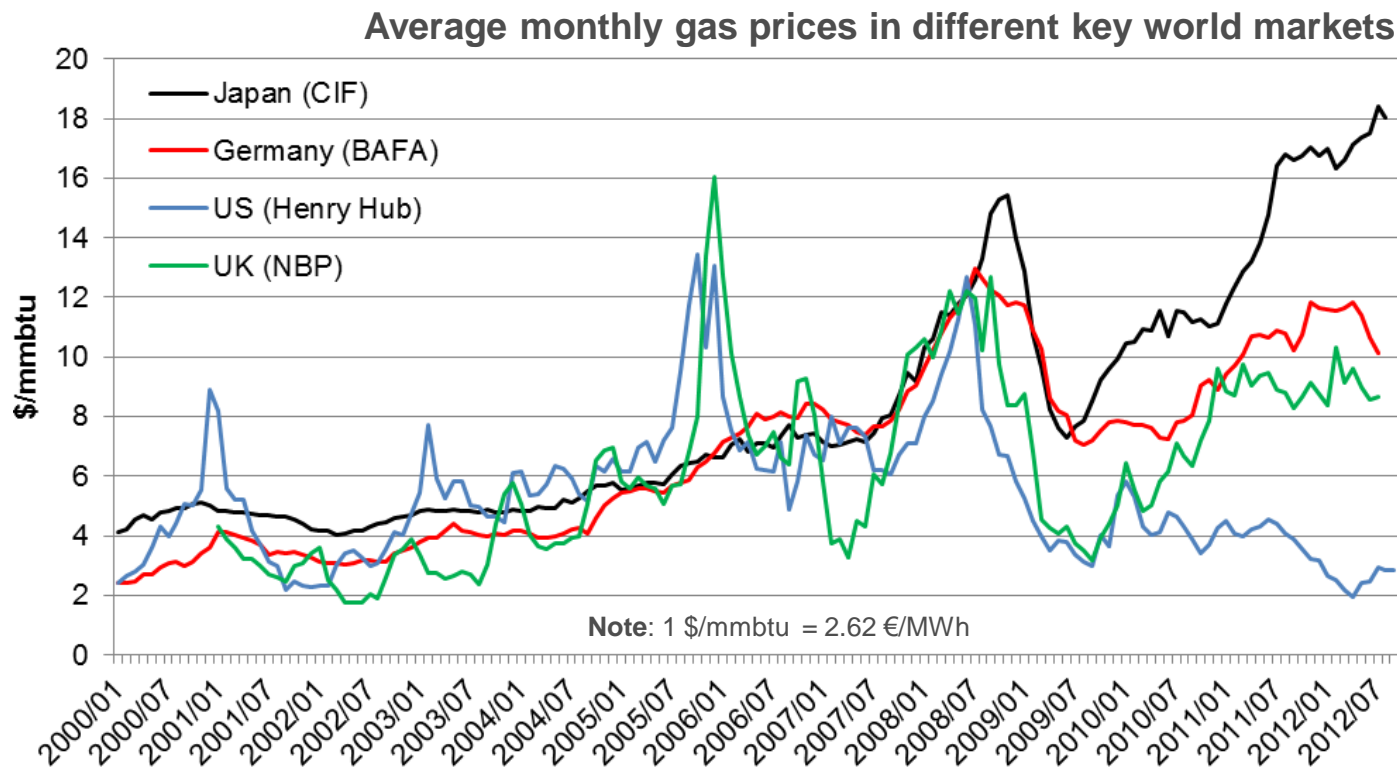
The picture is complex, and drivers change over time



Gas is gradually becoming a commodity, more like oil

Gas is generic at whole sale level – price signalling imbalances

- Even EU will not notice national differences ex storage – only price
- Global imbalances impact LNG availability, but prices set in market



Data: EIA, BAFA, National Grid and Japan Customs Office, October 2012

Supply: Is gas its own worst enemy?

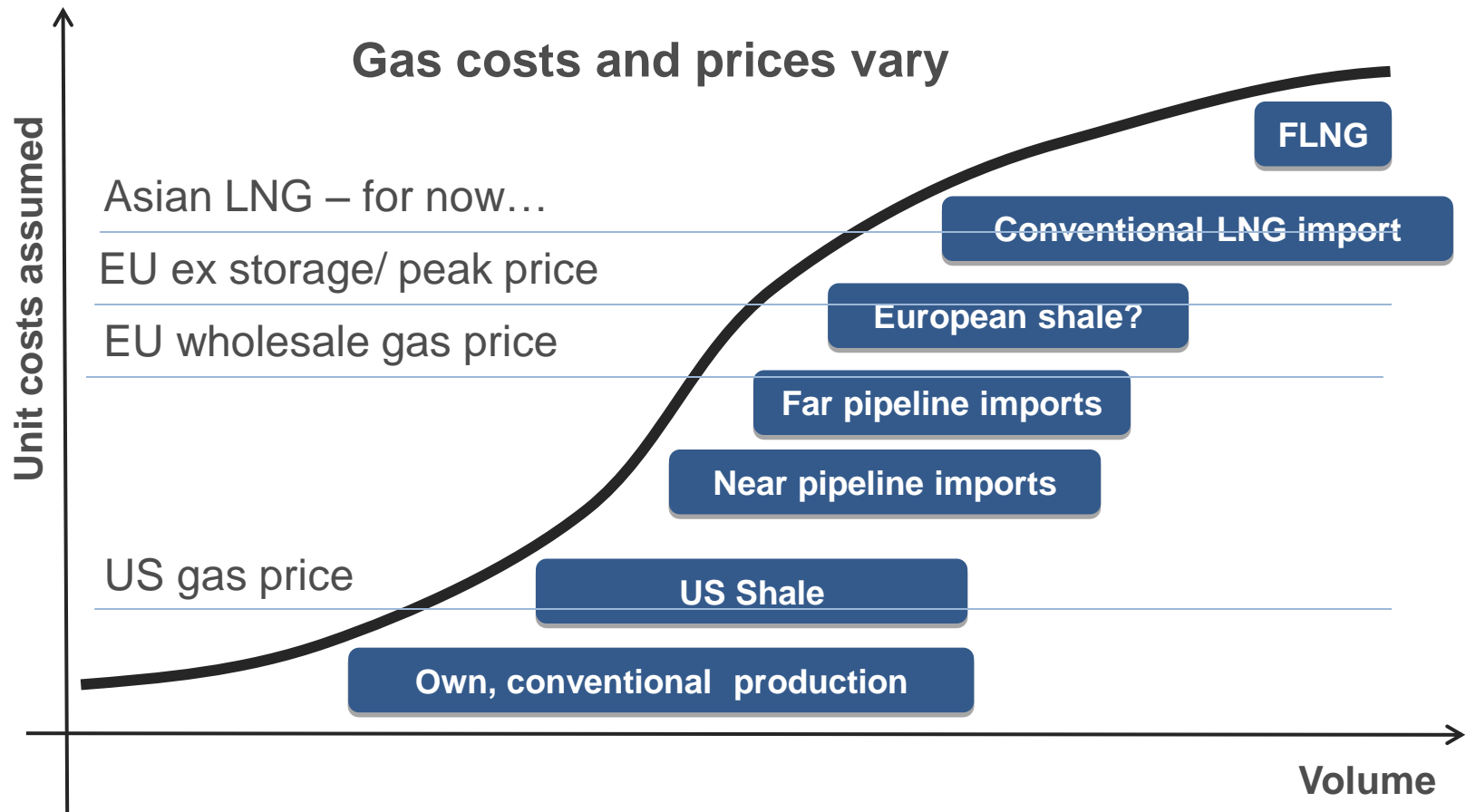
In an under supplied world we had peace and understanding

- Room for all projects and all sellers – agreement on most principles
- Less need to market, understand, differentiate – shortage consensus
- Comfortable, long term contracts – agreed with buyers
 - Linked to alternative fuel of oil (to replace it) and premium for LNG

Now there is too much loose gas – from expensive sources!

- Assumptions of higher prices and continued growth: Much new gas
 - Shale looked attractive to US at prices above \$8/mmbtu
 - LNG looked attractive to Australia, Russia, East Africa at \$18/mmbtu
- When price expectations are not fulfilled: Production continues
 - So credibility of “needing” high prices falls
- Best way to increase prices: Turn down production and cancel projects
 - Large and diverse group of producers - who will blink first?
 - Demand will fall and permanent destruction possible

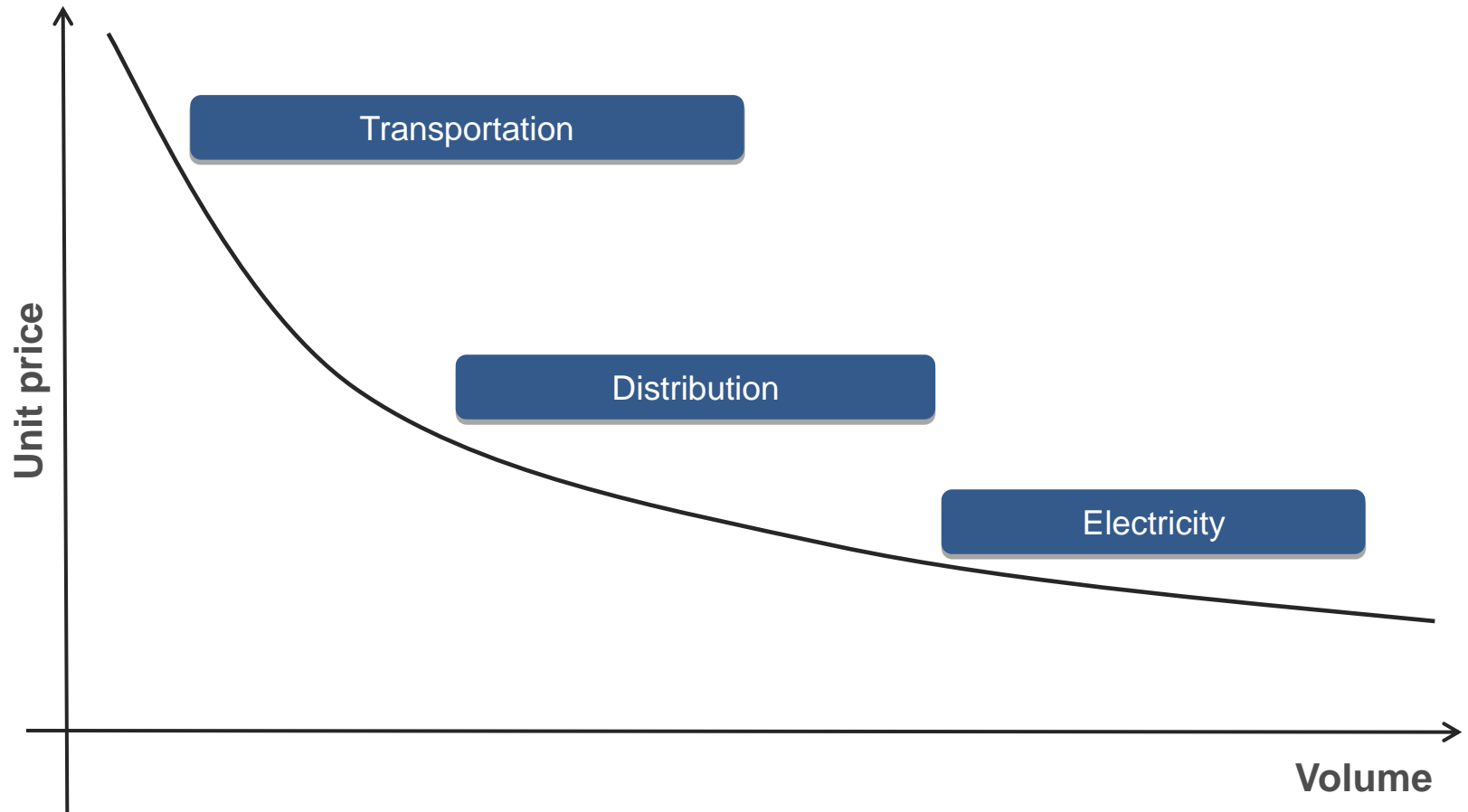
Do we really believe in the supply-cost curve?



Too much expensive gas has made the price fall!

Or should we focus more on payability of segments?

Assumed demand curve – generic retail



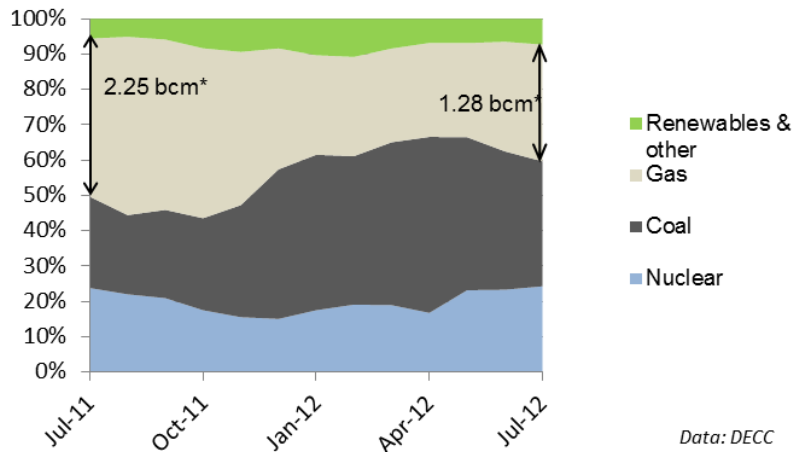
Some segments could pay more but have less volume

The segments are very different!

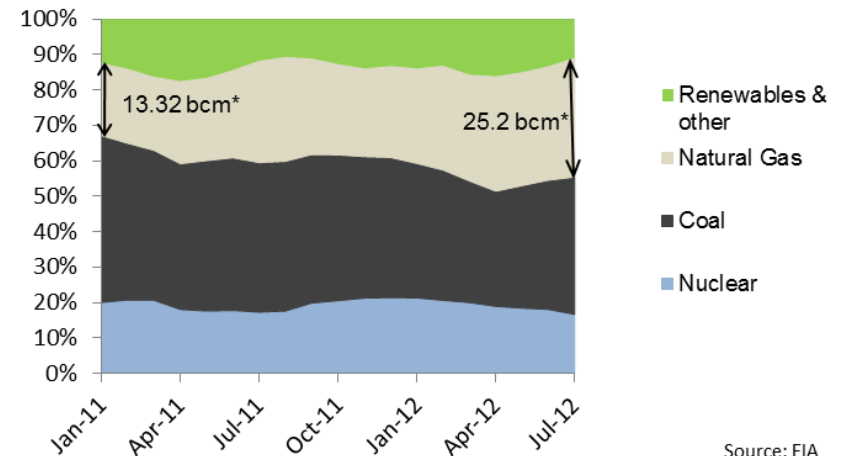
Electricity generation: Baseload competes with coal

- In the US, gas wins this competition now – reducing global coal price
- In the rest of the world, coal is winning on price
- Policies of green overrun by cheap now
- From most promising to fastest fall!
- Peak has limited volume/payability

Electricity generation in UK (in %)

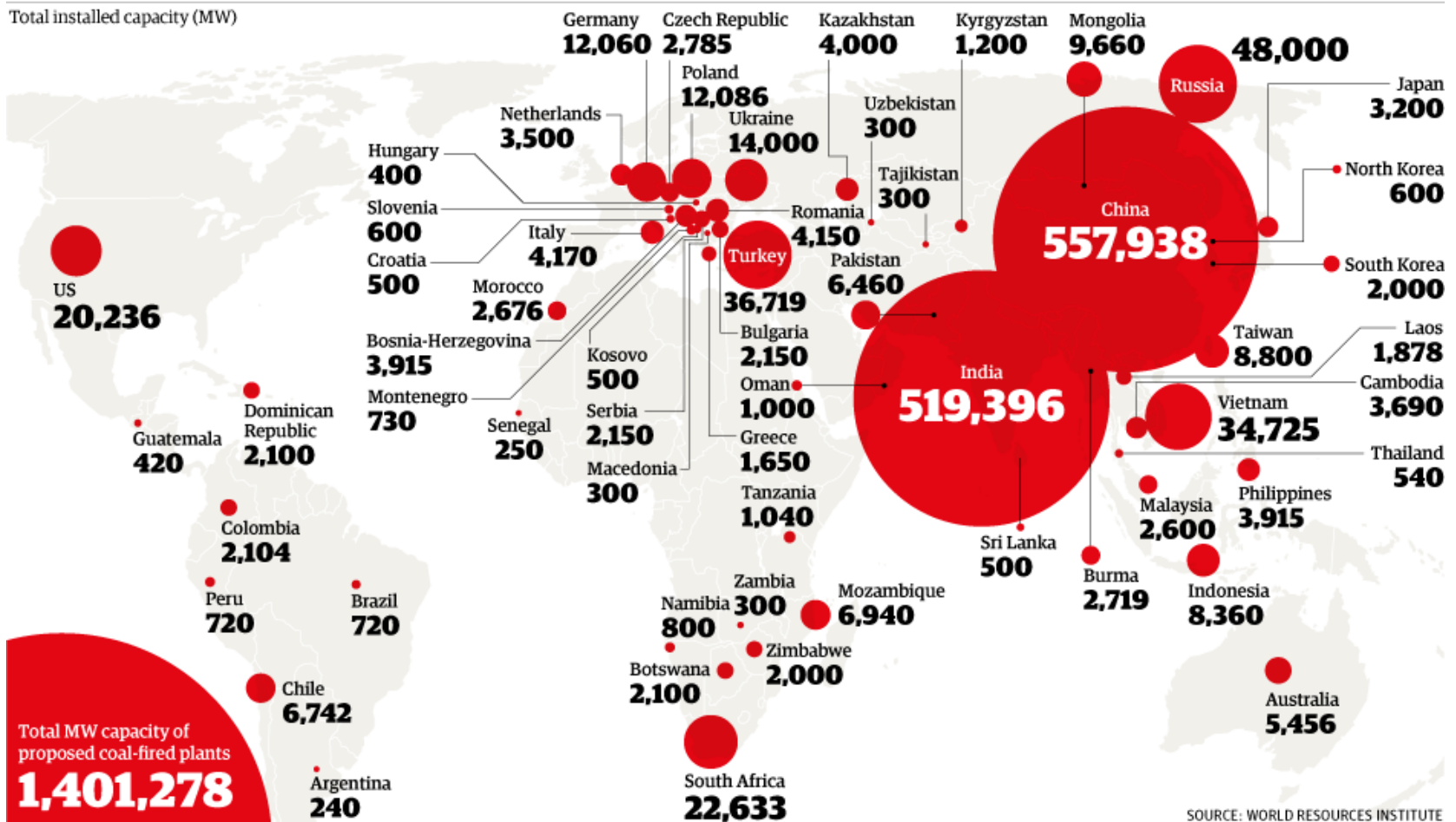


Electricity Generation in US (in %)



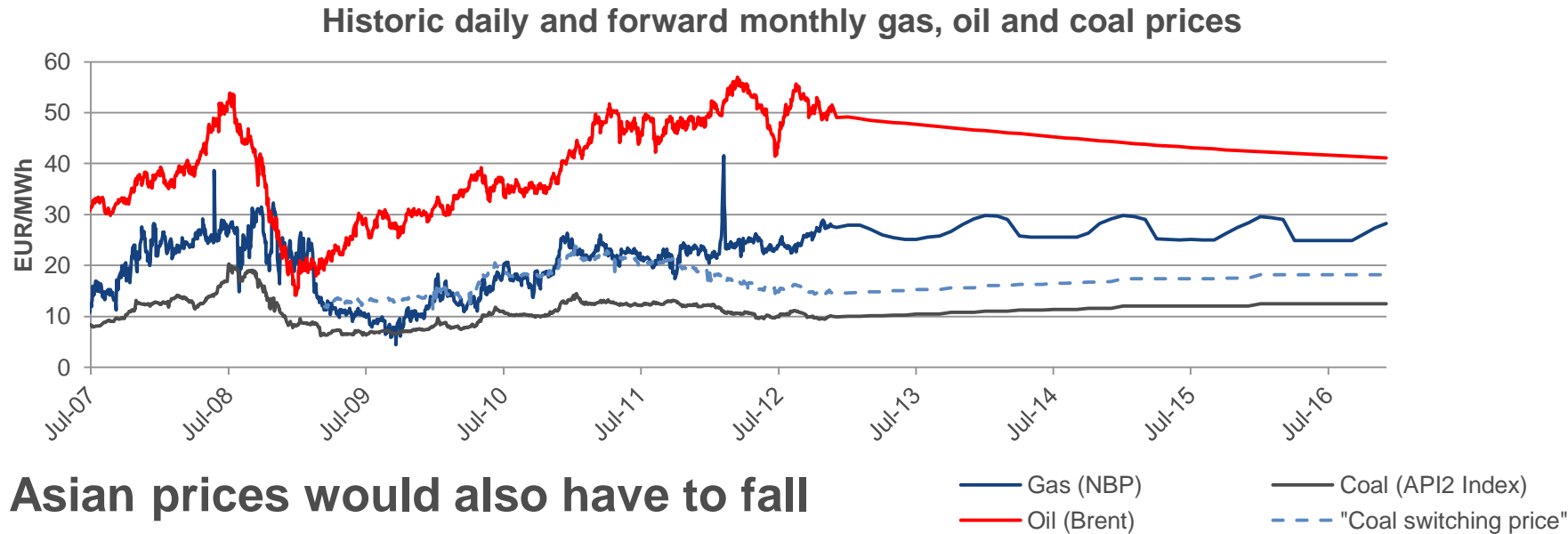
Coal generation is exceeding expectations

Proposed coal-fired plants



Competing with coal would increase volume

European prices would have to fall



Asian prices would also have to fall

- Several reasons to replace coal there
- Renewables should not be underestimated!

Historic prices until 19.11.2012

Source: Sund Energy, Montel, EIA, ECB

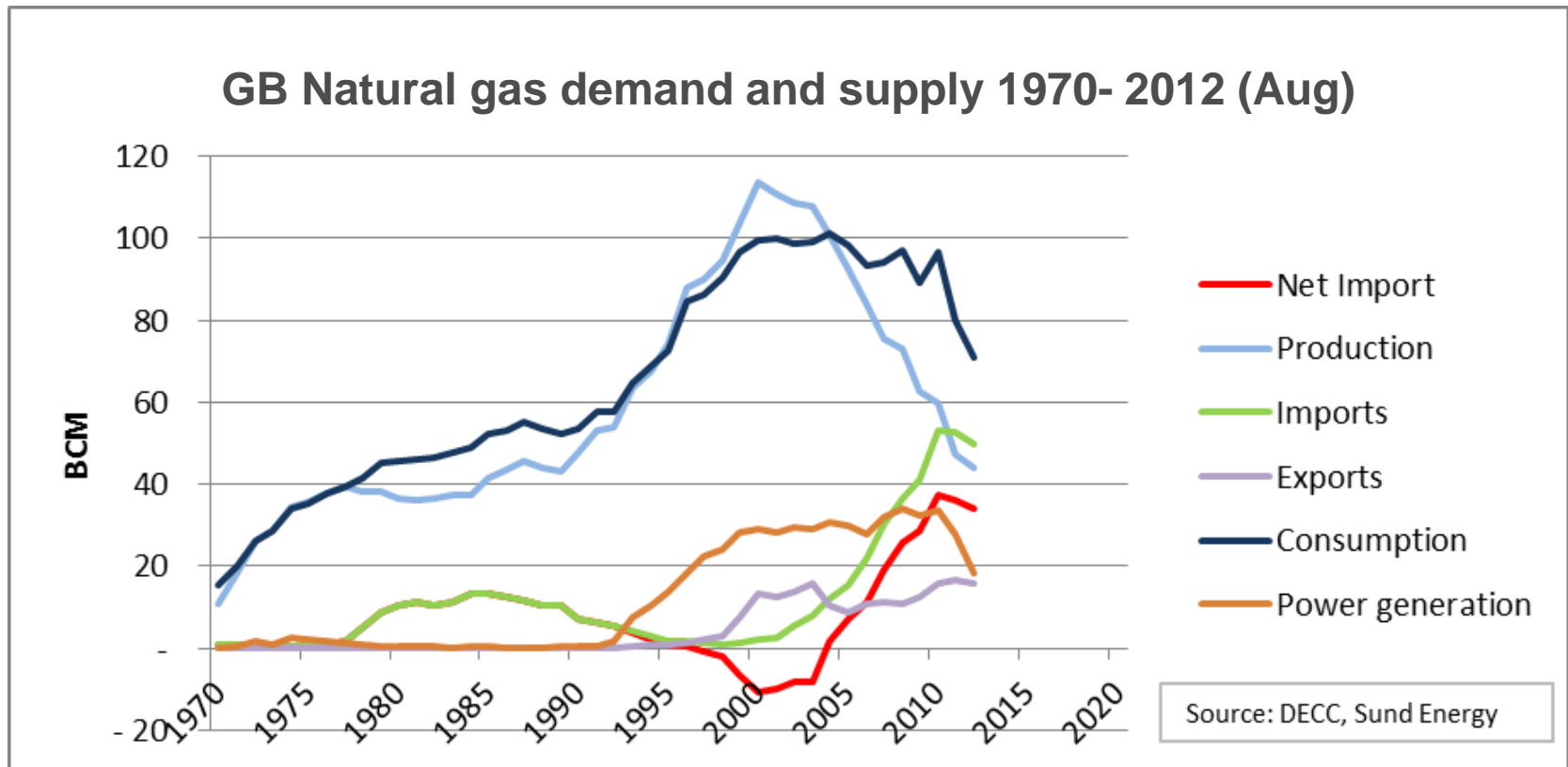
US prices could gain slightly (and they probably will)

- Also EPA regulations restricting coal plant emissions

Great Britain – long a favourite market for sellers

Island laboratory: Good learning on balancing and prices

- Different from expectations – clear impact of perceptions and price
- Balancing production, demand, imports with exports



What next? Two simulations for illustration

Gas prices considered high

- Not competitive with coal
- Expensive for population
 - Much higher focus on alternatives + efficiency

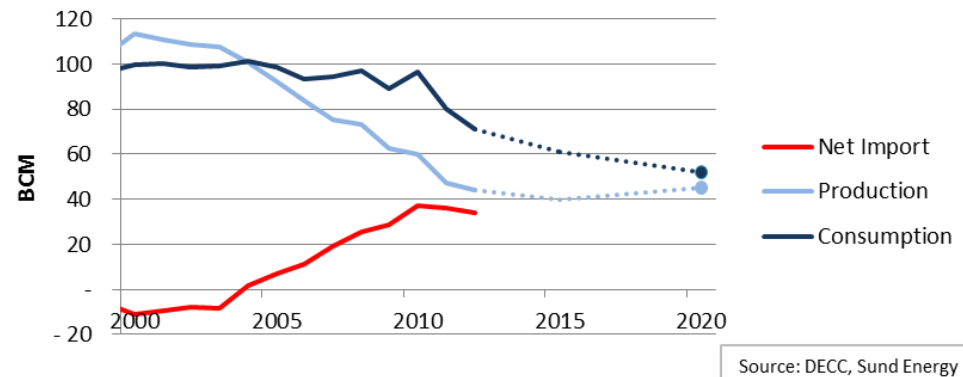
Higher prices in the future?

- Comfortable for new suppliers: LNG and shale
- However, demand would fall and perhaps no imports needed

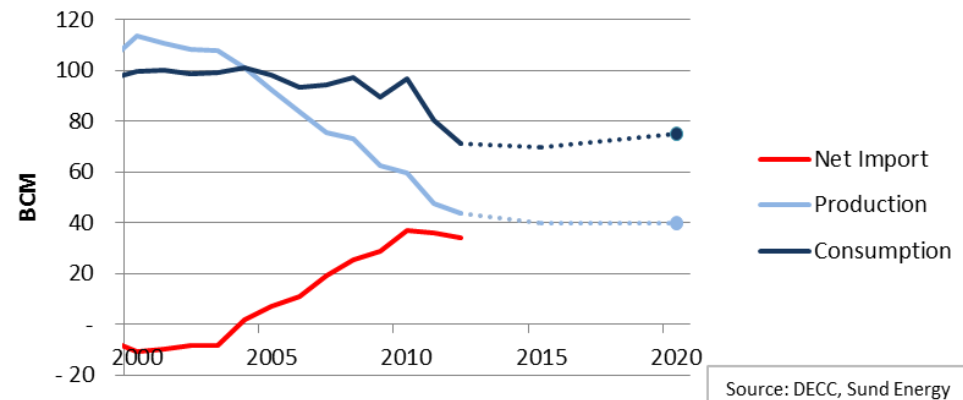
Lower prices in the future?

- Comfortable for new demand: Electricity
- How attractive for new supplies: LNG/shale?

UK Natural gas supplies - high prices



UK Natural gas supplies - low prices



Hub pricing is here to stay!

US Henry Hub well established

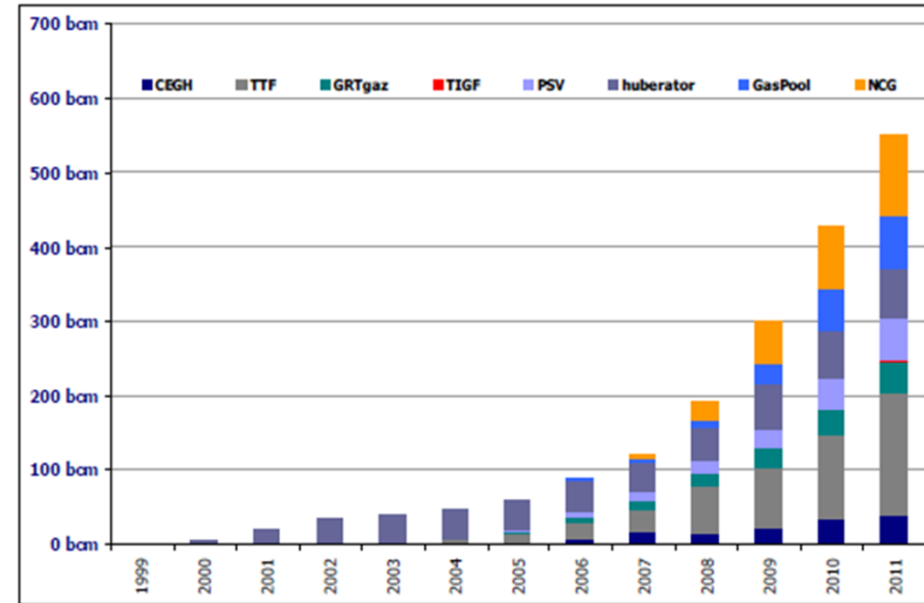
EU growing hub liquidity

- Old contracts changing to gas index
- New deals on gas index

Asian hubs developing

- New deals on gas index

Figure 18: Continental European hubs OTC volumes: 2000 – 2011



Source: Oxford Institute for Energy Studies, 2012

Statistics still reflect long, old contracts

- But new deals are gradually changing average import prices
- Also, oil linked contracts are being discounted – lower P0

New products will develop – also for LNG

- Spot, futures, options, swaps
- Better for the new market conditions and needed flexibility of all!

Competition at many levels + more competent buyers

Producers prefer oil more than ever before

- Even utilities who originally wanted SoS gas



Industrial energy consumption – price arbitrage where possible

- Cost of energy important in locating new manufacturing

Other energy consumption – cheaper, cleaner, safer

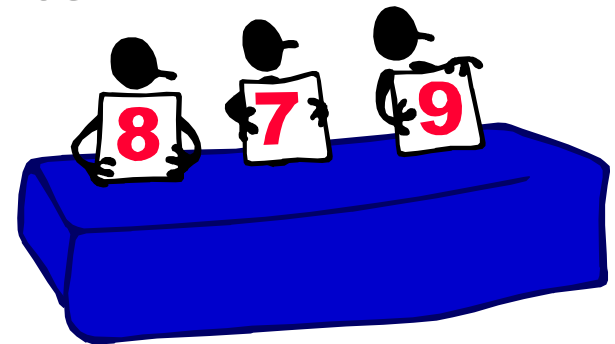
- Preferences vary greatly – no guarantees of winning

Other gas sellers – with innovative approaches

- Pricing structure, flexibility, attentiveness

Sourcing responsible in each company

- Tougher negotiations with more options!
- The high cost of gas justifies people



Could the gas price globalise more? YES!

Current regional difference strong – partly due to bottlenecks

- USA artificially low – will increase with more demand and exports
- Asia artificially high – will fall with new import pricing and hubs
- Europe in the middle – partly old contracts, partly lack of LNG

These differences will lead to more portfolio optimisation

- Sellers going to best markets – more flexible with new contracts
- Buyers going to best sellers – more flexible with more alternatives

A global price could develop to meet the electricity market

- As the coal price is global, this will set the level, with some nuance
- This will be the wholesale price of gas
 - Could package for value to transportation, balancing, etc

Alternatively, go for a high price - and suffer the consequences...

It is not impossible to get high prices – but difficult...

It is possible, even popular in oil

- Less elastic demand (with less alternatives in transportation)
- Elastic supply with over capacity better than price volatility?
- OPEC countries long experience in cooperating and agreeing on this

Gas is different

- More elastic demand (especially electricity)
 - Turns off quickly!
- More diverse production, especially unconventional sources
- Risk: Holding back for even more uncertain future!



Gas Exporting Countries' Forum, summer 2012

What is the best strategy for gas now?

Consider customers and payability – what is the image of gas?

- More negative sides to image of gas now:
 - Expensive, dangerous, political, not green enough, imported...
- Exceptions where unconventional gas is growing
 - Local, good for economy/trade balance, plentiful
 - But not quite green/clean enough for all...

Focus on portfolio optimisation – not “evacuation”

- How to get highest value customers – packaging and flexibility
- How to have alternatives if one customer/segment is lost
- How to have several sources if some are too expensive

Follow fundamentals of own as well as competing fuels

- Everything is relative – so movements in others

Risk management is an important skill – much in mind

Understand the markets – and be ready for new opportunities

- Transportation, distributed production, welcoming biogas
- Be honest when interpreting statistics and regarding competition!

Understand own biases – and adjust before too late

- All energies, technologies, companies and projects have it:
 - “We are the best to meet the future” – if many want it, we will win

Get used to transparency and openness – even embrace it!

- Much information available globally – being secretive gives suspicion

Consider lead times – from idea to delivery could take 10 years!

- Accepted in the past, parties were patient and stuck with each other
 - Some learning now, especially LNG aiming for US, UK, Japan, then?
- Build flexible portfolio and expect others to see the same shining lights!
 - This could mean more cooperation in logistics – to expand optionality

Conclusion: A new mindset could improve profits!

Learn to live with uncertainty and shades of grey

- Less black & white – not all good or all bad, not all gas or no gas

Yes, it's more difficult than the comfortable old ways

- But we fear that insisting on old ways will give lower profitability
- Key advice: Improve or sell out before too late

Find pockets of attractiveness and win them!

- Electricity if near variable production could still be attractive
 - Or consider more volume at lower prices
- Transportation – especially LNG for bunkering – large volume!
 - Very professional buyers with little patience for the “old ways” of gas
 - Need standard products available easily in all major ports – soon
- Global industry – petrochemicals, marine sector and others
 - Flexibility, standard terms, they need risk management, too...
- Other aspects will develop in dialogue with market

Meet with decision makers outside own club!

We are happy to discuss further!

We offer strategic and commercial advice + partner selection

- Producers, TSOs, large buyers, governments
- Gas, electricity, environment and more

Selected recent work

- Scenarios for European gas 2020 prices and flows in full energy picture
- Robust strategy and business models
- LNG deals

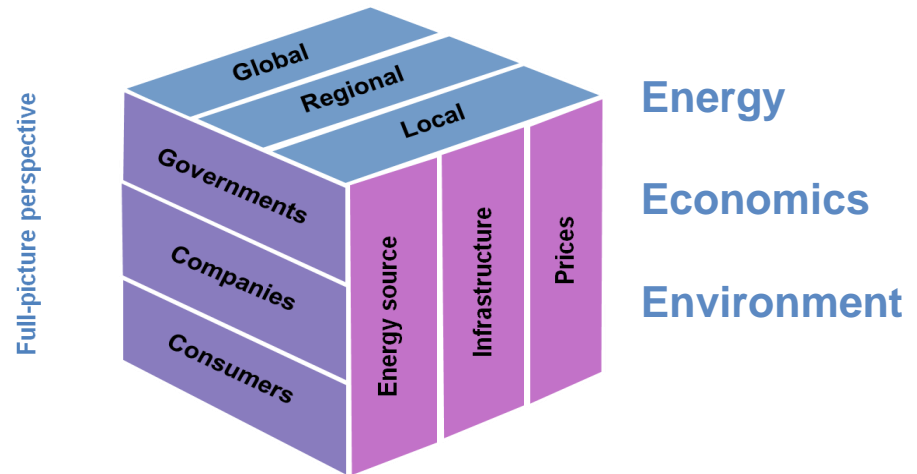
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