

Outlook for the Long Term Contracts in a Globalizing Market *(focus on Europe)*

**Katja Yafimava
Senior Research Fellow
Natural Gas Research Programme, OIES**

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EUROPE: the pricing revolution and its impact on Long Term Supply Contracts



Traditional Long Term Supply Contracts: major clauses (1)

- Seller must deliver gas to agreed delivery points within the pre-agreed volume range over a number of years, taking the price risk (**Po and oil/oil products indexation** where gas price is linked to the price of oil & oil products averaged over 6-9 months with a 3-6 month time lag)
- Buyer must purchase a minimum off-take at a defined price, irrespective of other opportunities that might arise in other markets, taking the market risk (**Take or Pay ~80-90%**)
- 'Price review' clause allows Po and the indexation formula be changed every 3 years
- International arbitration clauses (liquidated damages)



Traditional Long Term Supply Contracts: original logic (2)

- Economic & market fundamentals were based on crude oil (Asia) or oil products (Europe)
- Production and export of gas carried out by (mainly) oil exporters; buyers were replacing oil products by gas
- For several decades these arrangements were reasonably
 - logical (up to 1990)
 - successful (up to 2006) in most countries
- But then the traditional LTSCs have come under pressure – what happened next?



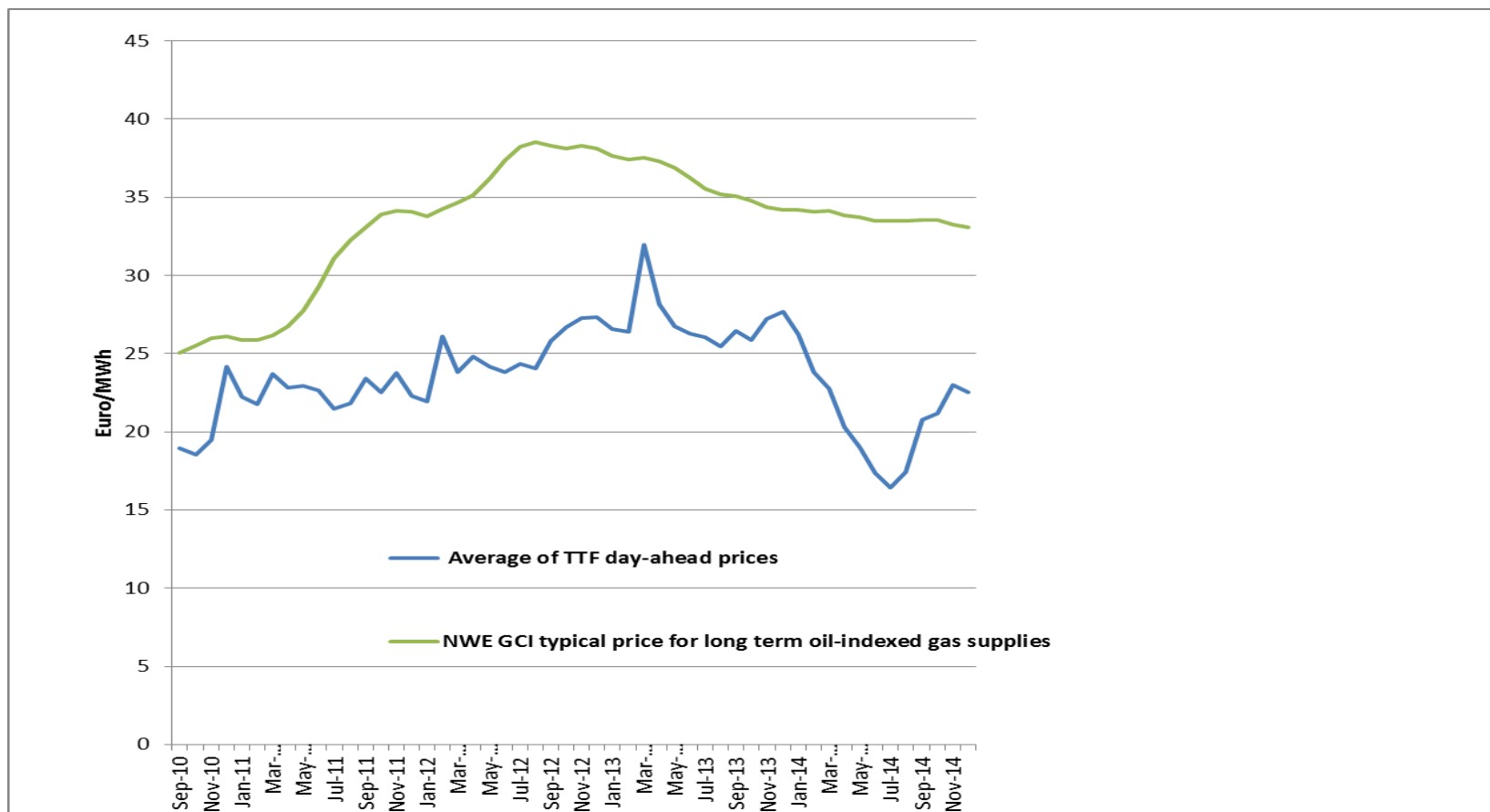
Inability to adjust traditional Long Term Supply Contract prices to supply/demand fundamentals

- As fundamentals changed, contracts did not (or could not) adapt
- For a long time this “did not matter” but **in Europe** the situation changed post 2008 because of recession, liberalisation and competition, LNG supply surplus, hub pricing and the huge increase in oil prices..
- Oil-linked long term contract **prices became increasingly uncompetitive** and..
- Led to European utilities, exposed to competition, losing significant amounts of money for the first time

Systems – and hence the contracts underpinning them – change when big players lose big money!



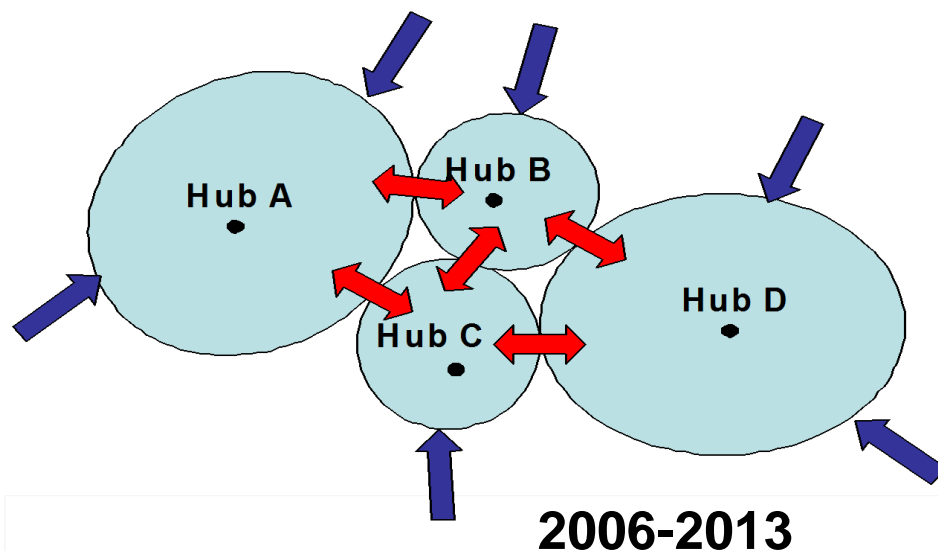
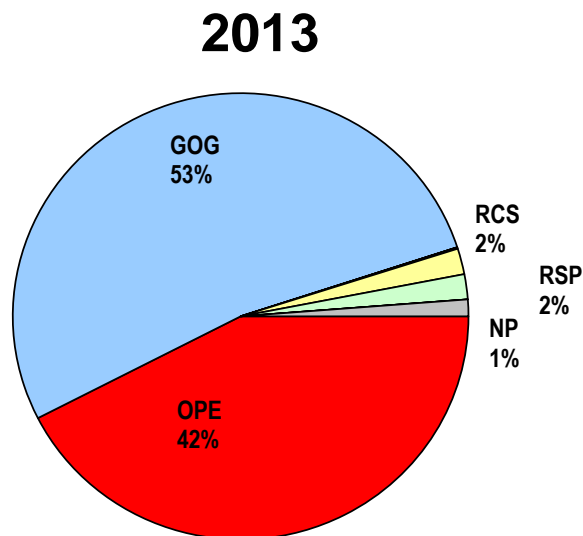
TTF (Hub) and Oil-Linked Contract Gas Prices, August 2010-December 2014 (Eur/MWh)



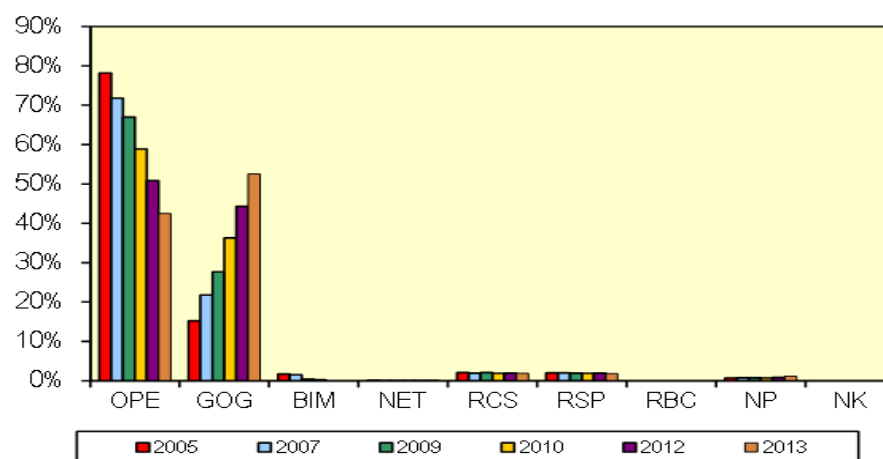
Source: Platts European Gas Daily, Monthly Averages

In 2014, monthly hub prices varied from 50-70% of oil-linked contract prices

European Wholesale Gas Pricing



Region & % of demand	OPE,%	GOG,%	RCS,%	RSP,%
NW Europe	20	80		
Central Europe	35	50		15
Medit. Europe	85	15		
SE Europe	41	47		12



Source: IGU Wholesale Gas Price Survey 2014, May 2014.

The share of Gas to Gas (hub-based market) prices increased rapidly from 15-53% in the period 2006-13

European hub development

2007-2012

- Very strong price correlation
- NWE hubs move closely together, TTF leads
- In 2012, CEGH and PSV increasingly aligned to other hubs

2012-2013

- Decline in correlation of PEG Sud (20%) and PEG Nord (a few %) with other hubs
- PSV correlation with NW hubs fell significantly and CEGH correlation with NW hubs also declined (10-30%) whereas its correlation with PSV strengthened - might be explained by physical factors

Most correlations strengthened year on year, no sign of “manipulation”, hubs represent market prices at least in NW Europe. Interpretation of hub price trends over short term periods must be done with caution

Existing Long Term Supply Contracts: what is happening to pricing and other clauses?

- **Russia (Gazprom) and Algeria (Sonatrach): the only sellers of gas to Europe which continue to speak against hub-based prices, hence ongoing renegotiations and arbitrations with European buyers**
- **The Netherlands, Norway and most other sellers of gas to Europe: adaptation to hub pricing in north west European markets**
- **Buyers are seeking to create hubs and transition to hub prices everywhere**

Publicly available arbitral decisions over the past few years have been in favour of buyers, with the spot price judged to be at least part of the market price

Norway and the Netherlands: swift adaptation of traditional LTSCs in countries with competitive markets and operating hubs

- Reduction of Long Term Contracts length to max 10 years
- Gas price is indexed to hub(s)
- Reduction of Take or Pay clauses + “flat” gas delivery ie buyer has to pay for flexibility

Swift adaptation of existing contractual structures to the changing market and regulatory environment

Algeria: Sonatrach's unwillingness (inability?) to adjust its LTSCs

- **Sonatrach is resisting the transition to a hub-based pricing index and has many arbitrations with European buyers running concurrently as**
 - **Algeria is short of gas for domestic demand and therefore unlikely to compromise and hence is...**
 - **happy to reduce volumes rather than price and**
 - **has options to export LNG to non-European markets**

Refusal to adjust existing pricing structures to the changing market and regulatory environment may make sense

Russia: Gazprom's ability to adjust its LTSCs

- Russia has huge shut-in supply and pipeline export capacity through which it could export much more gas to Europe; therefore its price/volume decisions are complex
- Gazprom has continued to speak against hub based prices but has demonstrated its ability to adjust so that the price level remains competitive (although sometimes following arbitration)
- Long Term Supply Contracts (LTSCs): 20-30 years, 80% ToP, oil-indexation BUT re-negotiations, arbitrations & DG COMP inquiry

Ability to adjust existing contractual structures to the changing environment

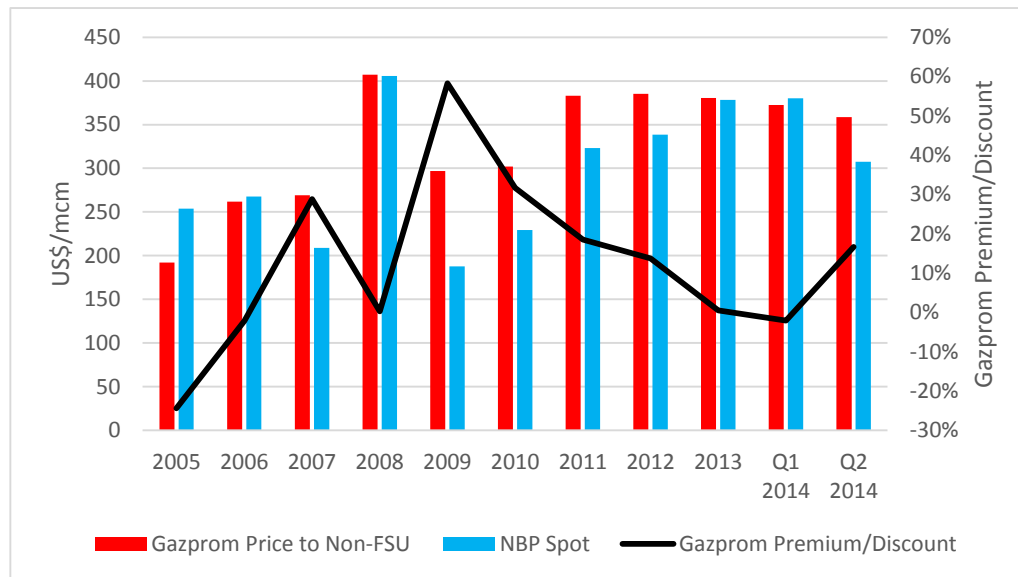
Gazprom's European Long Term Supply Contracts: need for managed transition

- For as long as existing Long Term Supply Contracts remain in operation, Russian sales to Europe of at least 100 Bcm are secure at least up to the mid-2020s
- Even if the Long Term Supply Contracts disappear, there are limited options – even by 2030 – to reduce Russian gas imports below 100 Bcm/year, unless the global LNG market expands very rapidly and Asian demand does not take an increasing share of the expansion
- Overall European dependence on Russian gas will not decline substantially at least until the end of 2020s and possibly beyond

Neither European buyers nor Gazprom want to terminate the existing LTSCs

Gazprom's Long Term Supply Contract Re-negotiations 2010-14

- 2010-12: minimum ToP volumes at contract price, volumes above minimum ToP at hub prices, to recognise recession impact
- 2012-14 (differences in individual contracts): base price reduction (7-13%?) and ToP reduction (70%?), rebate mechanism whereby if the contract price exceeds the hub price by 5-15%(?), Gazprom refunds the difference at end of period



Source: OIES

Gazprom's Long Term Contract Price Arbitrations

- Big European customers maintain pressure for hub-based prices in LTSCs:
 - Edison (2010 and 2014), E.ON Ruhrgas (2011), PGNiG (2011) - settled with price adjustment; RWE Transgas tribunal award to RWE (€1.6bn?) and share of hub pricing in the contract price in July 2013; Erdgas Salzburg (2011) settled,
 - E.ON. Ruhrgas (2014) decision pending; Lithuania (2012) decision pending

In all cases where decisions have been made public, arbitrators decided in favour of buyers, and that the spot price should be considered at least part of the market price;

Gazprom tended to settle its arbitrations with negotiated solutions

DG COMP Proceedings Against Gazprom

- September 2012, DG COMP announces proceedings against Gazprom Affiliates in 8 EU countries : Poland, Czech Republic, Austria, Bulgaria, Hungary, Latvia, Estonia, Lithuania
- Issues (apparently) resolved:
 - hindering free flow of gas across EU member states
 - preventing diversification of gas supply
- Issues not resolved (and further politicized in 2014)
 - imposing unfair prices on customers by linking the price of gas to oil prices (sticking points: economic fundamentals and comparison with prices charged to “Russia’s neighbours”)

Since October 2013, Gazprom has been negotiating with DG COMP on contractual remedies but negotiations stopped in 2014 and it is not clear whether/when they will re-start. In any event “Statement of Objections” has been delayed several times.

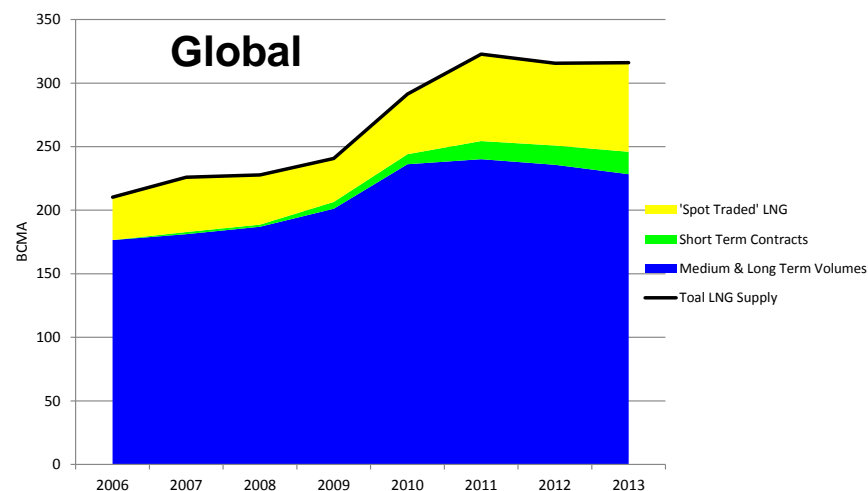
ASIA Pacific LNG trade: is the pricing revolution spreading to Asia?

Asian Long Term LNG Contracts

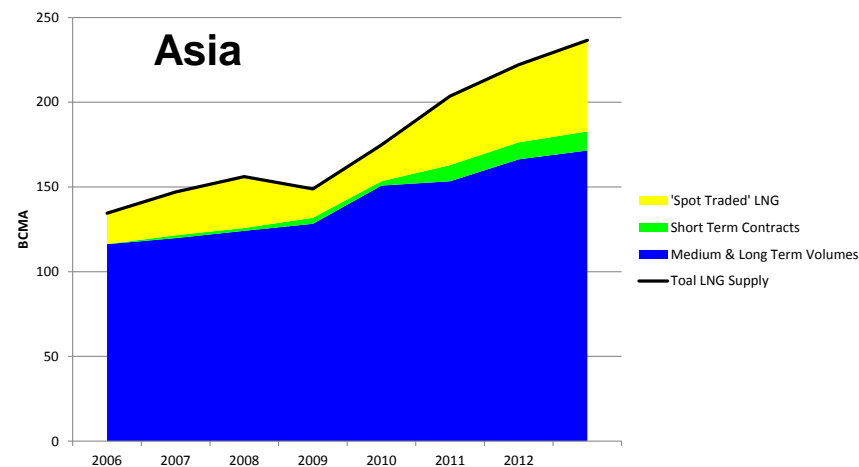
- Since the 1980s the base price has been set on the basis of the average of Japanese customs cleared crude oil prices (aka 'Japan Crude Cocktail' or JCC)
- Traditionally, negotiations are about:
 - the "slope" - how gas prices change in response to crude oil price changes; the "S-curve" – whether there is protection for the buyer at high oil prices and for the seller at low oil prices
- Prices reflect the era in which they were signed; by early 2010s, price range was very wide
- Price review clauses appear to be vague and provide fewer possibilities for price revision compared to European LTSCs

Possible Futures for Asian LNG Contracts and Prices

- North America: Henry Hub based pricing
- Spot/Futures pricing: JKM or similar
- Evolving Hubs: **Singapore, Shanghai, Tokyo**



**In 2013, Spot LNG Cargoes
Represented 22% of Global LNG
Volumes**



**In 2013, Spot LNG Cargoes
Represented 23% of Asian LNG
Volumes**

**Long-term (15-25 year) contracts are still the norm but
spot cargoes and 1-5 year 'strips' are becoming more
common**

A Singapore Hub?

Advantages

- First mover – current location of 24 companies operating in the Asian LNG space
- Sufficiently neutral politically that others may accept it as an index

Disadvantages

- A market of 6mt – although with plans to expand significantly – may not be large enough to set prices for Asia
- Location may be too far from the major Asian LNG markets to provide a compelling price reference; but close enough to SE Asian countries

Unlikely to develop enough size and liquidity to be a reference for the big Asian markets, but could for emerging South East Asian gas/LNG markets

A Shanghai Hub?

Advantages

- The location where domestic and international (LNG and pipeline) gas supplies come together in Asia's biggest (and most rapidly expanding) gas market
- Result of a price reform with a compelling market logic (the only one in Asia?)

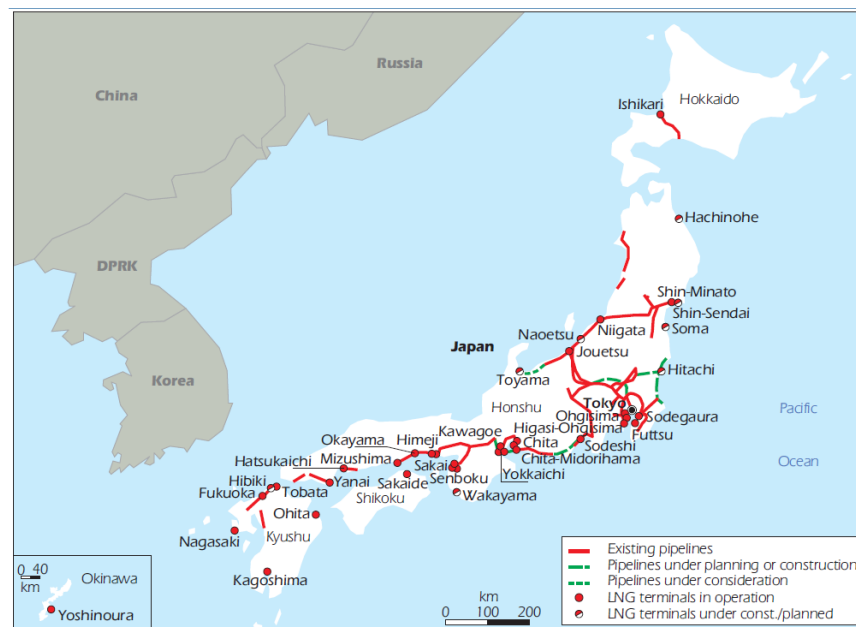
Disadvantages

- Lack of transparency of supply and demand ie not genuinely "market-driven"
- Overly dominated by three Chinese state-owned companies (and hence the Chinese government)

Shanghai is currently a "city gate benchmark" rather than a hub price, but nevertheless it could evolve into the dominant price reference for Asia. China has no stake in the traditional LNG status quo

A Tokyo Hub: what needs to be done?

- Improve Internal Pipeline Connectivity
- Unbundle Pipeline Ownership
- Establish TPA/UIOLI/Secondary Capacity Market for Regas Capacity
- Create Virtual Hub



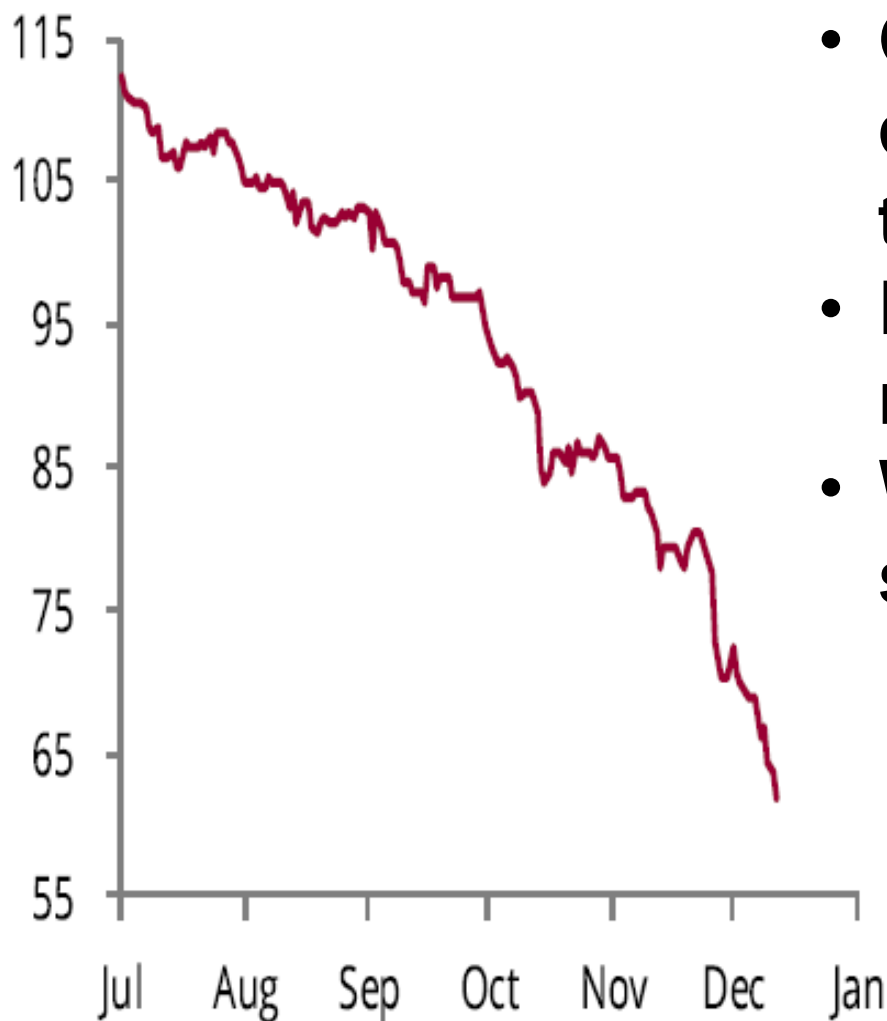
This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Source: The Asian Quest for LNG in a Globalising Market, IEA, 2014



Has the 2014/15 Oil Price Collapse “Solved” the LTC Price Problem?

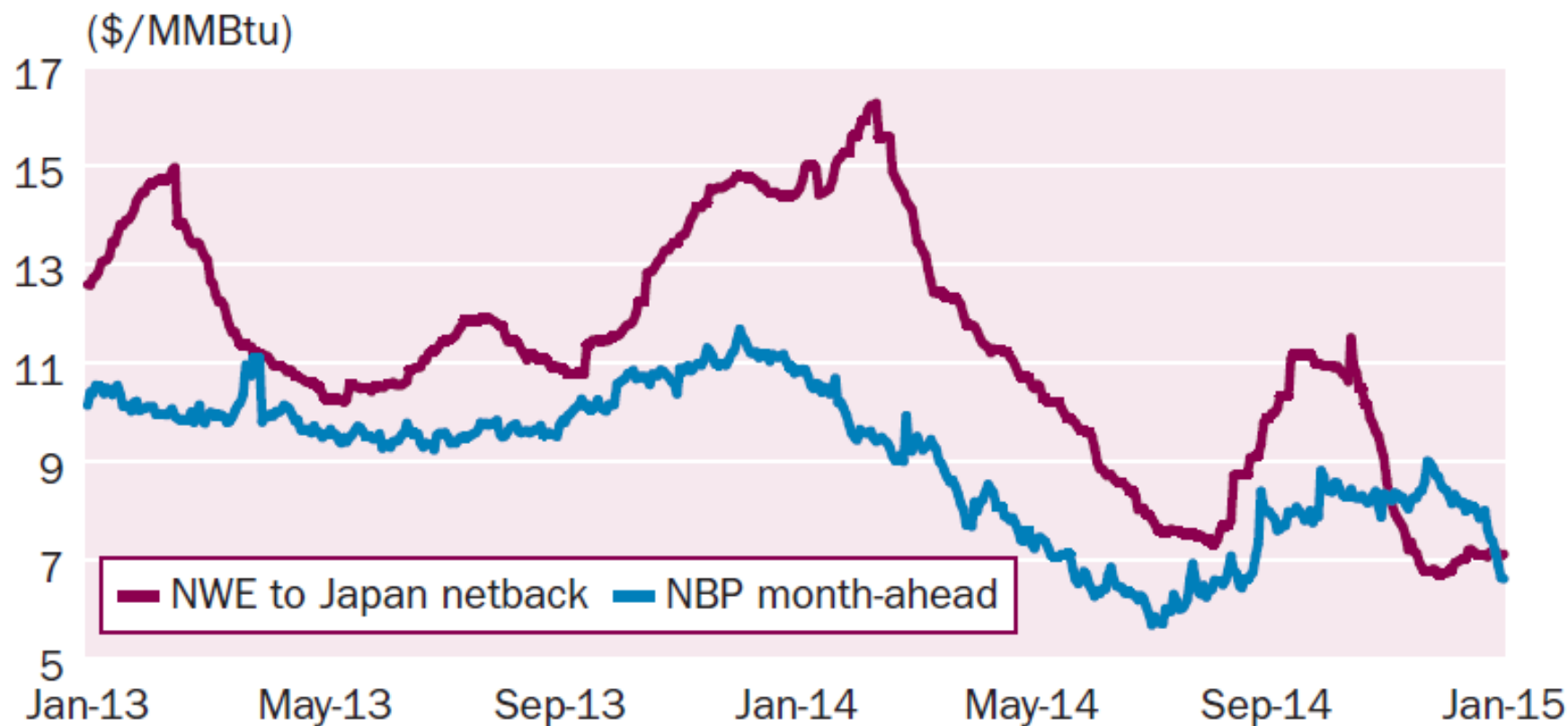
ICE Brent Price, \$/barrel



- Oil-linked long term gas contracts will fall closer to hub-based prices
- But how long will prices remain below \$100/bbl?
- Will lower prices create significant new demand?



NBP Price compared with North West Europe (NWE) netback price from Japan



Source: Platts

By the end of 2014, the NWE netback was below NBP for the first time since early 2011 ie its more profitable to sell spot LNG in Europe than Japan

CONCLUSIONS

EUROPE: in transition from oil linked to hub-based pricing

A secular trend is under way BUT:

- in some regions (eg South East) this process may not get under way for several years
- this does not mean that oil prices are no longer relevant to gas price formation only that a contractual link to oil prices is no longer logical
- hub-based pricing does not mean that gas prices will automatically and always be lower than oil-linked prices

The future of existing long term contracts is problematic; new long term contracts will probably be shorter, and volumes will be smaller

ASIA: at the start of a 10-year (or longer?) transition

- JCC pricing is being resisted by all buyers (and this will probably continue even in an era of lower oil prices)
- Henry hub/NBP pricing does not represent Asian supply/demand fundamentals
- JKM and other spot prices still immature
- Singapore hub is a good start BUT..
- Shanghai currently looks favourite to develop into an Asian LNG reference price

Long term contracts remain essential for new green-field LNG projects (e.g. East Africa); but what about extensions of existing contracts?

Does the 2014/15 Oil Price Collapse Change the Picture for Oil-Indexed LTCs?

- How long will \$50/bbl oil last?
- Lower price level does not change the fundamental problem that gas prices should no longer be contractually linked to oil prices

BUT....

- To the extent that oil-indexed LTC prices fall closer to market prices this reduces the financial pain for buyers and the pressure for rapid change
- So change may be slower but will still happen



THANK YOU

KATJA.YAFIMAVA@OXFORDENERGY.ORG