

PatrickHeatherConsultancy

Gas Market Integration: How liquid are Europe's hubs?

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Patrick Heather Consultancy Limited

- An Energy Markets consultancy, specialising in the European utility sector, covering gas, electricity, emissions and coal and, in the energy forwards and futures markets.
- Advising on trading, risk-management and portfolio optimisation issues but also on providing marketing and business advice.
- Giving presentations on the utility/traded markets and related topics.
- Providing practical knowledge and experience in trading, managing trading operations, setting up trading desks, contract negotiation and Client representation.
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Patrick Heather is a Senior Research Fellow at the OIES, focusing on the gas markets, in Britain, Continental Europe and Asia.

His published works are available on the Institute's website or by using the DOI links:

"The Evolution and Functioning of the Traded Gas Market in Britain"

<https://doi.org/10.26889/9781907555152>

"Lessons from the February 2012 European gas 'crisis'"

<https://www.oxfordenergy.org/publications/lessons-from-the-february-2012-european-gas-crisis-2/>

"Continental European Gas Hubs: are they fit for purpose?"

<https://doi.org/10.26889/9781907555510>

"The evolution of European traded gas hubs" <https://doi.org/10.26889/9781784670467>

"European traded gas hubs: an updated analysis on liquidity, maturity and barriers to market integration" <https://doi.org/10.26889/ei13.201705>

"The SPIMEX Gas Exchange: Russian Gas Trading Possibilities"

<https://doi.org/10.26889/9781784671013>

"French gas customers face a real risk from a No-Deal Brexit"

<https://www.oxfordenergy.org/wpcms/wp-content/uploads/2019/02/French-gas-customers-face-a-real-risk-from-a-No-Deal-Brexit.pdf>

"A Hub for Europe': the Iberian promise?" <https://doi.org/10.26889/9781784671327>

"European traded gas hubs: a decade of change"

<https://www.oxfordenergy.org/publications/european-traded-gas-hubs-a-decade-of-change/>

"European traded gas hubs: the supremacy of TTF"

<https://www.oxfordenergy.org/publications/european-traded-gas-hubs-the-supremacy-of-ttf/>

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Outline

What makes a successful traded gas hub?

- The path to maturity
- Five main requirements
- How traded hubs help the gas markets to evolve

Hub-indexation in global LNG contracts

- Brief history of traded gas hubs
- Global gas benchmarks

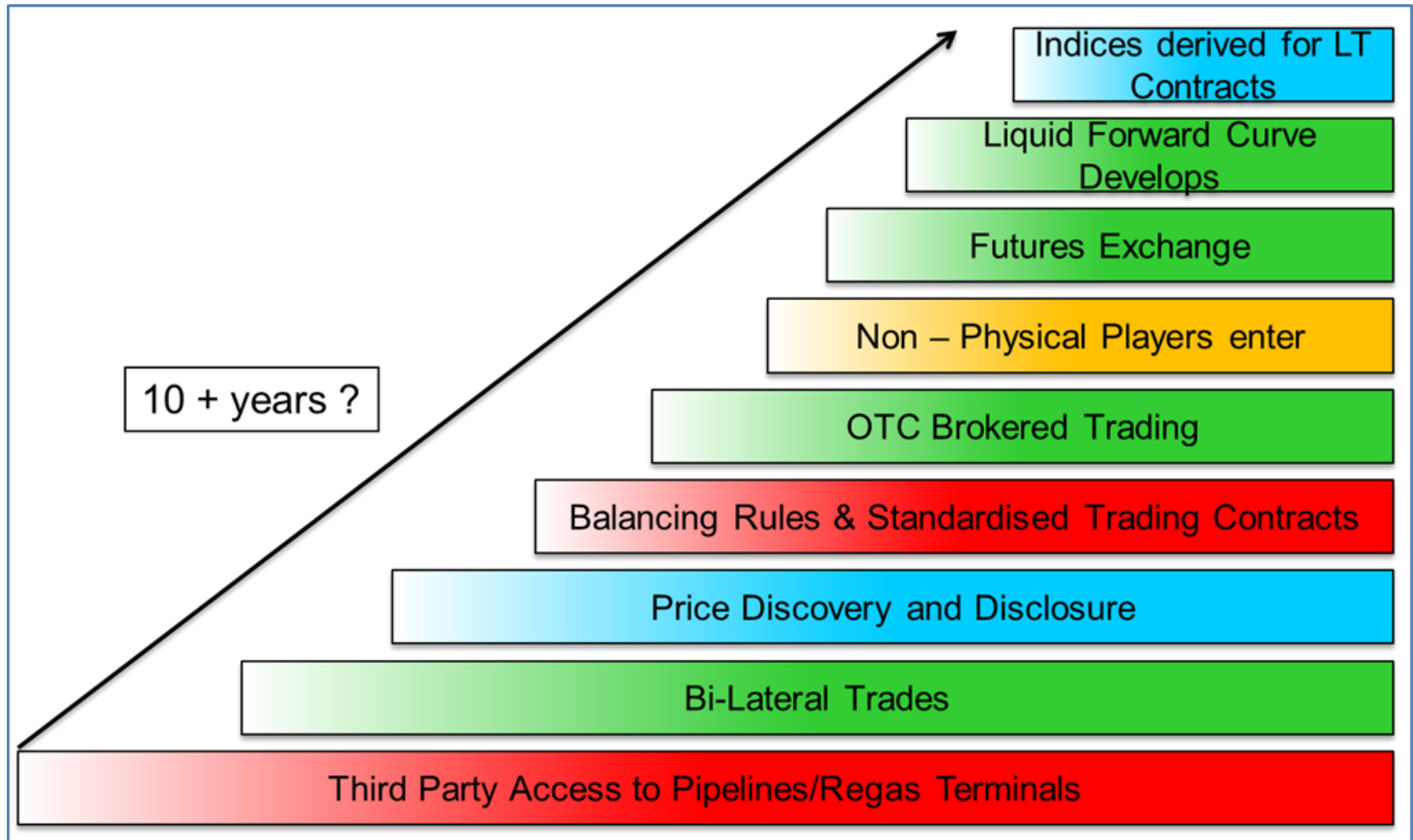
Spotlight on a few European hubs

- TTF and NBP;
- German market merger;
- Benchmark for Southern Europe / SE Europe?

What makes a successful traded gas hub

**The path to maturity
Five main requirements
How traded hubs help the gas markets to
evolve**

What constitutes a 'good' hub?



Source: Heather (2015)

The 'Path to Maturity' starts with Third Party Access and, over a period of time, develops to provide first OTC then financial products, ending with Indices used as reference prices in physical contracts

Five main requirements to successful trading

Liquidity is a measure of how easy it is to trade volume at a given price without 'moving' the market:

Standardisation of traded contract terms and conditions tends to concentrate liquidity.

Volatility is a measure of price movement in relation to market activity:

Historically, financial markets have high liquidity and fairly low and consistent volatility, whereas energy markets are typically very volatile yet may also be very liquid.

They are particularly sensitive to external information.

Anonymity is the 'corner stone' of futures trading:

The Clearing House is the counterparty to all trades and this allows both 'big' and 'small' participants to trade alongside each other.

Market transparency is very important in the development of a successful traded market:

It means that traded volumes and prices are quickly disseminated in the public arena giving traders added confidence in the market in which they are trading.

Traded volumes simply relates to the total actual volume traded in any given market:

this could be the OTC volume or the exchange volume or the split between spot and curve but in all cases refers to the total traded in each category.

Mature OTC gas markets: their function

- Open and Transparent markets:
 - Foster trading, competition and, ultimately, the ‘best’ or ‘right’ price at any given time
 - Attract many participants of different types who bring liquidity
- Liquid markets allow for the ability to:
 - Physically adjust portfolio volumes over time
 - Financially risk manage gas portfolios
- Mature gas markets can help provide:
 - Security of supply and security of demand
 - Providing a market place for the buying and selling of, usually, marginal quantities of physical gas

Most of all, mature, open, transparent and liquid markets provide secure Risk Management tools

Gas exchanges: their role and function

- **Price Discovery & Transparency**
 - The ability to know the price of gas now and in the future (up to twelve years ahead on Nymex Henry Hub, six years on ICE NBP and five years for ICE-Endex TTF)
 - Publicly and easily accessible
- **Supply/Pricing flexibility**
 - The ability to separate price function from supply function
- **Physical balancing**
 - Providing a market place for the buying and selling of, usually, marginal quantities of physical gas
- **Risk Management**
 - Providing a facility for managing price risk through a **secure and regulated market** – hedging and trading

Exchanges are complementary to the OTC markets and assist in the development of traded gas hubs in a secure, regulated environment

Hub-indexation in global LNG contracts

Brief history of traded gas hubs
Global gas benchmarks

Brief history of traded gas hubs

US gas markets started liberalisation **in the 1980's** but took nearly **20 years** to become a '**regulated competitive market**', only truly liberalised at the wholesale level

Britain's gas markets liberalised **in the mid-1990's** and reached '**maturity**' within **10 years**, albeit at a high cost

European gas markets really started **in the mid-2000's** but are far from being fully liberalised across all countries

Asian gas markets have just started **in the mid-2010's** to move away from oil indexation towards market pricing

Henry Hub is the benchmark for Nth American gas and some LNG supplies
NBP is the benchmark for gas in British Isles and some LNG supplies
TTF is the benchmark for North West European gas and some LNG supplies
Further down the line another European hub is feasible
and there will almost certainly be at least one Asian hub
However, it must be remembered how long the process of change takes!

Global gas market churn rates

Representative churn rates 2019 (HH, TTF, NBP: trading/consumption; JKM: trading/LNG imports)			
	Country/Region	Hub	Churn
VERY LIQUID	United States	HH	45.5
	Netherlands	TTF	97.1
LIQUID	FR-DE-AT-CZ-Benelux	TTF	17.9
MATURE	Britain	NBP	14.3
	UK-IE	NBP	13.4
ILLIQUID	Asia	No hubs yet but increasing spot trading	
	CN-JP-KR-TW	JKM	0.54

Methodology: Dark Green/Very Liquid:>=/40; Mid Green/Liquid:15<40; Light Green/Mature:10<15; Amber/Poor: 5<10 Red/Illiquid:<5
Sources: JODI, Platts, CME, LEBA, ICIS, ICE, ICE-Endex, PEGAS; P.Heather

On a global scale, there are three successful, mature, benchmark hubs today: Henry Hub, TTF and NBP are benchmark hubs for their regions and for LNG

Spotlight on a few European hubs

TTF and NBP

German market merger

Benchmark for S Europe / SE Europe?

Spotlight on a few European hubs

NBP and TTF

NBP has been losing ground to TTF but is still a mature Sterling reference hub for the British Isles and some LNG
TTF has seen incredible growth and is now *the* European gas benchmark, the reference price for pipeline and some LNG

German Market Merger

NCG/GPL: both disappointing performance over past 5 years
Hub merger: **THE: Trading Hub Europe**
A grandiose name change will not create liquidity
Doubtful that THE will live up to its title!

Benchmark for Southern and South-eastern Europe?

PSV has seen very strong growth, now ranked 5th
Could possibly be a SE market price, especially with TAP?
Maybe more likely that a **SEE regional marker** will emerge, as the regional market differs from those in NW Europe

Regardless of the German hubs merger any potential third reference point, TTF is will remain the physical pricing and risk management benchmark hub

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