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Gasunie
Creating conditions for a liquid gas market

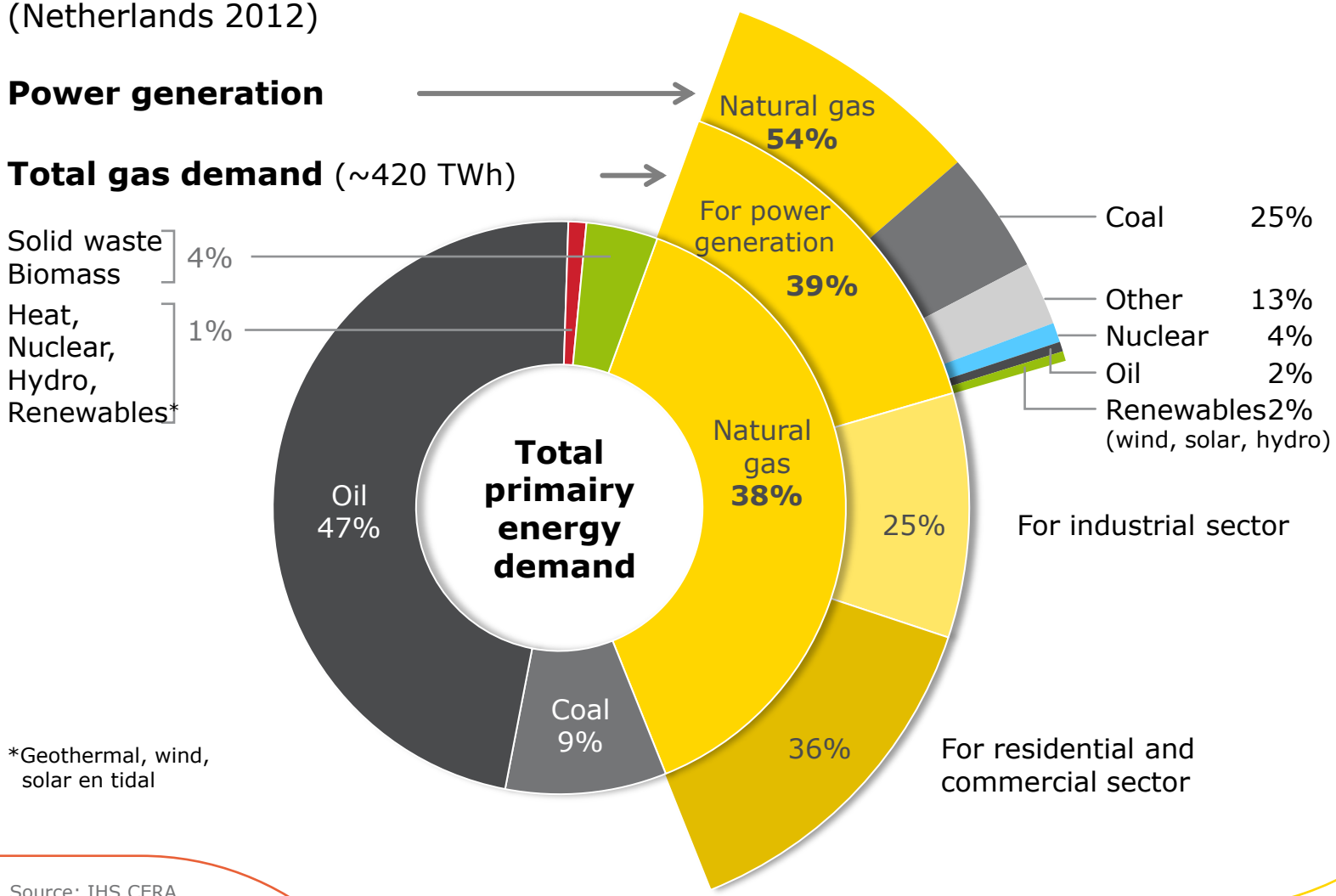
AGN Gathering 2015

Lisbon, 2 December 2015

Britta van Boven

Netherlands: gas country

(Netherlands 2012)



Source: IHS CERA

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European gas infrastructure company

15,500 km pipeline network

TTF biggest HUB

Groningen

Transport 1,233 TWh/ 126 bn. m³ volume

Profit €603 m

Brisbane

Sales €1,651 m

Figures of 31 December 2014

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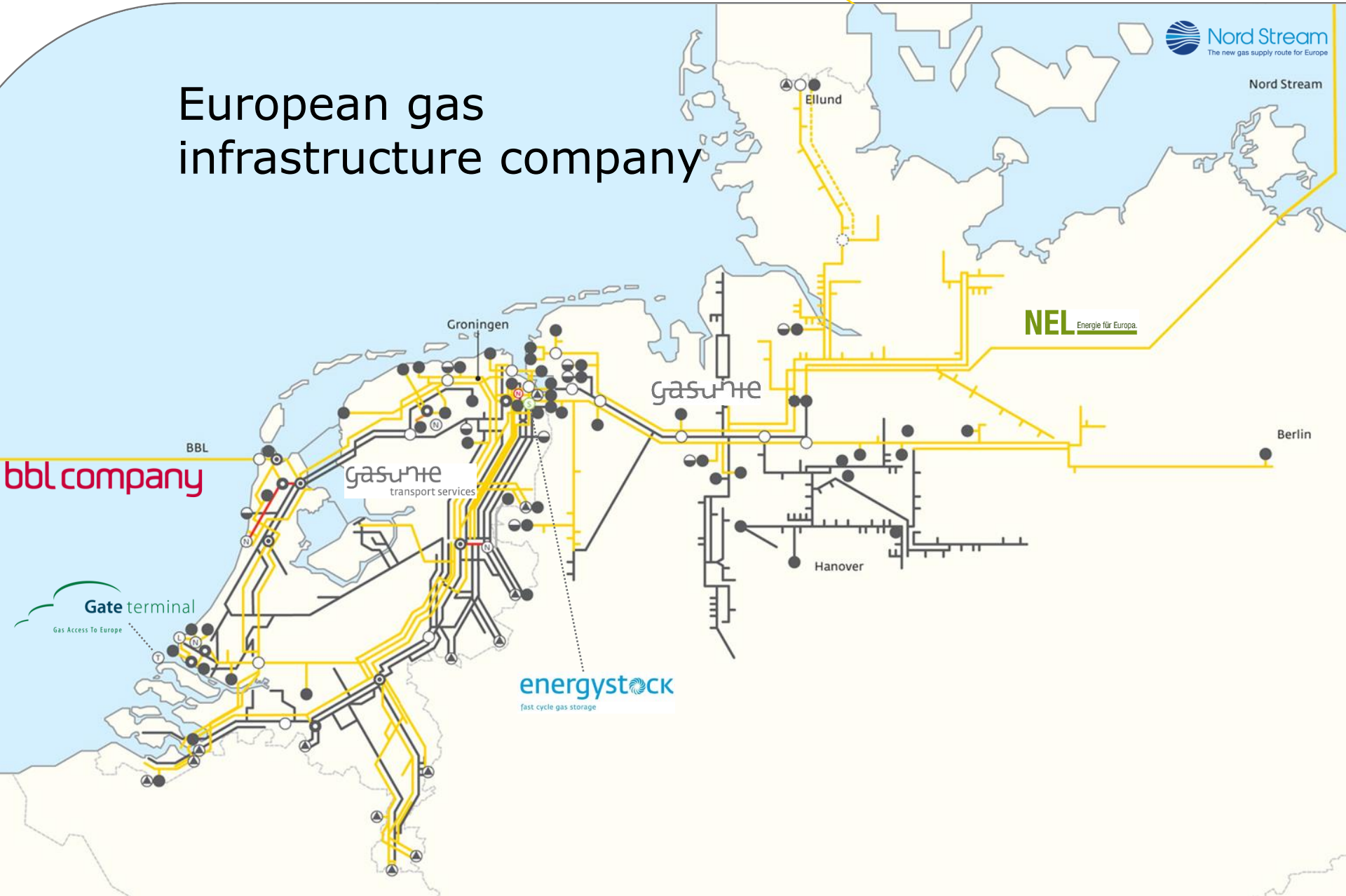
European gas infrastructure company



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Primary conditions for a functioning virtual hub

In line with EU 3rd package and related Network Codes:

- Unbundling of integrated companies
- Decoupled entry-exit system
- Market based capacity allocation
- Market based balancing
- Firm entry and exit capacity – infrastructure (incl. storage) is a necessary condition for a well-functioning gas market

Facilitate the market

Entry exit system

Virtual Trading Point (TTF)

Gas quality

Capacity auctions (day, month, quarter, year)

Balancing by the shippers

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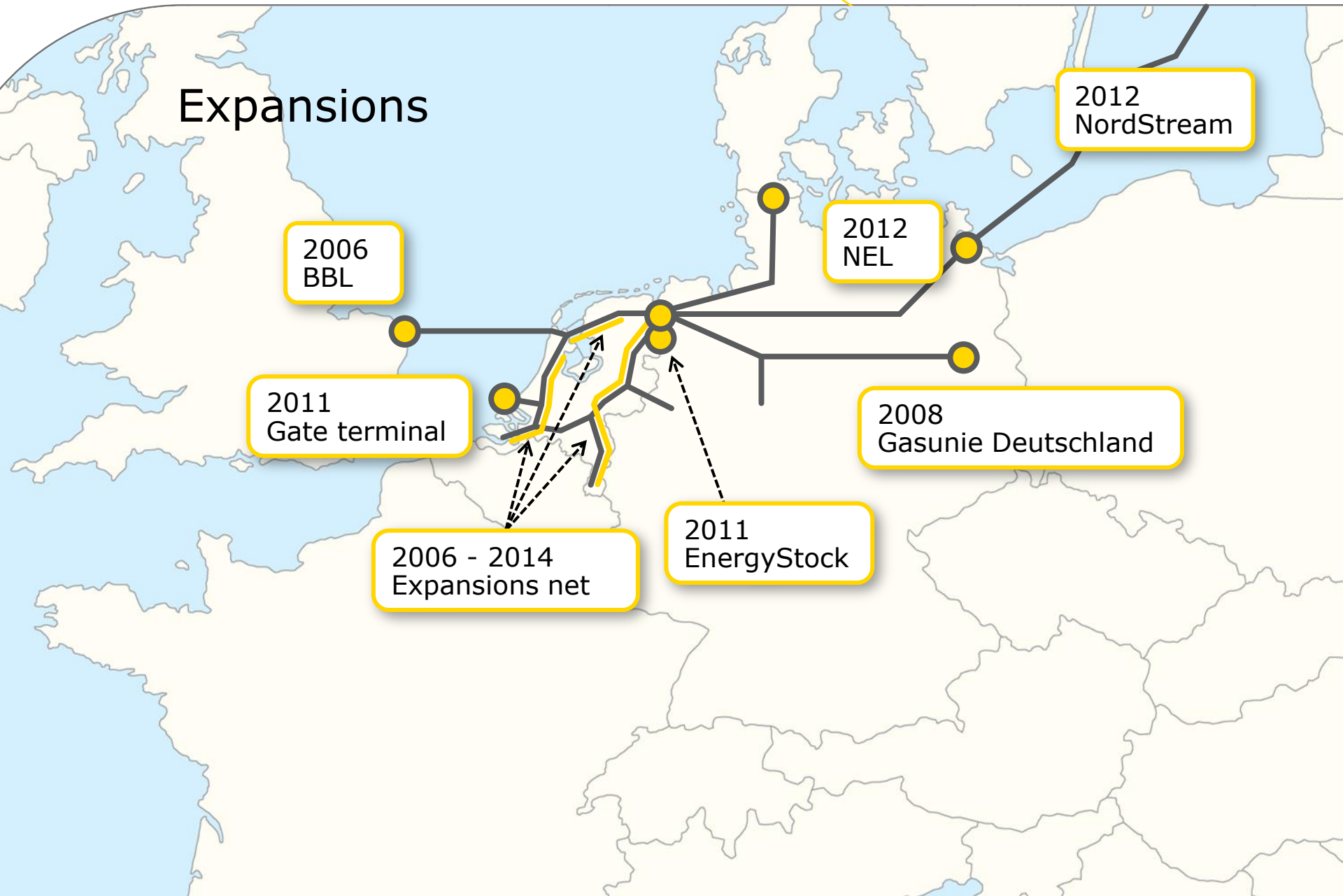
Expansions



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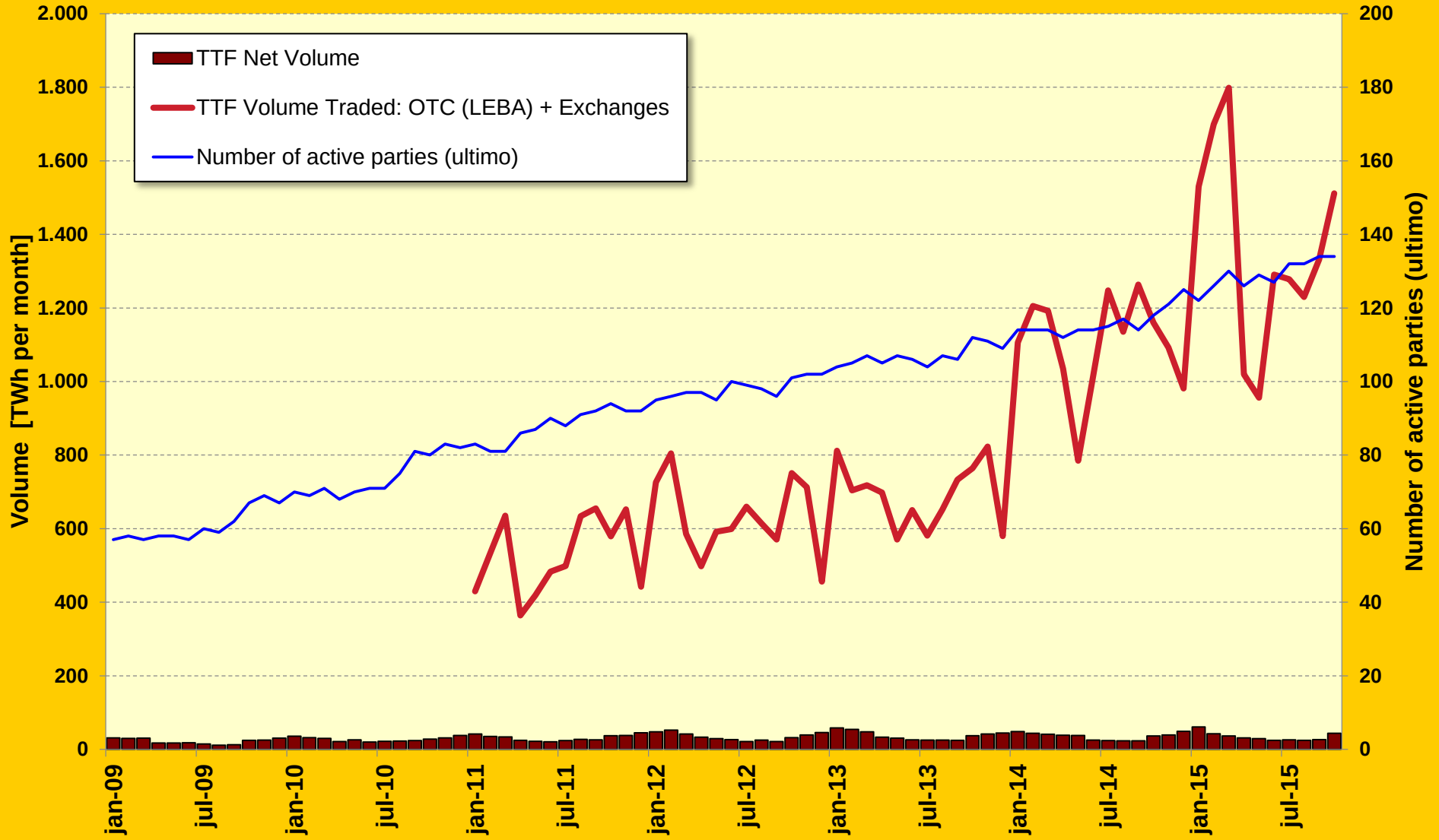
Monthly volumes at the Dutch TTF
January 2009 - October 2015

gasunie transport services



TTF versus NBP: Does TTF overtake NBP?

TTF biggest hub according to ICIS Heren

Dutch TTF overtakes NBP as most liquid European gas hub

» Continued from page 1

exchange platform for both NBP and TTF trading. Volumes are also dealt via the pan-European PEGAS platform. The TTF's August liquidity lead will likely increase when PEGAS releases its monthly volume data, as trade of TTF contracts far exceeds the NBP at the bourse. The CME offers OTC clearing services for NBP and TTF products.

OTC

In the OTC market, trade data collated by ICIS showed a 7% drop in liquidity at the TTF to 991TWh and a 7% drop to 586TWh at the NBP, compared with July.

At the TTF, traded volumes were lower on most contracts, but monthly products, the front season and front calendar year posted the biggest month-on-month losses. Liquidity on the Dutch prompt also fell as supply to the Netherlands was constrained by planned Nord Stream and Norwegian outages during the month and domestic consumption slid lower.

In contrast, volumes on NBP prompt contracts all rose due to unseasonably high consumption in Britain in August. Like the TTF however, curve volumes were mostly lower compared to July.

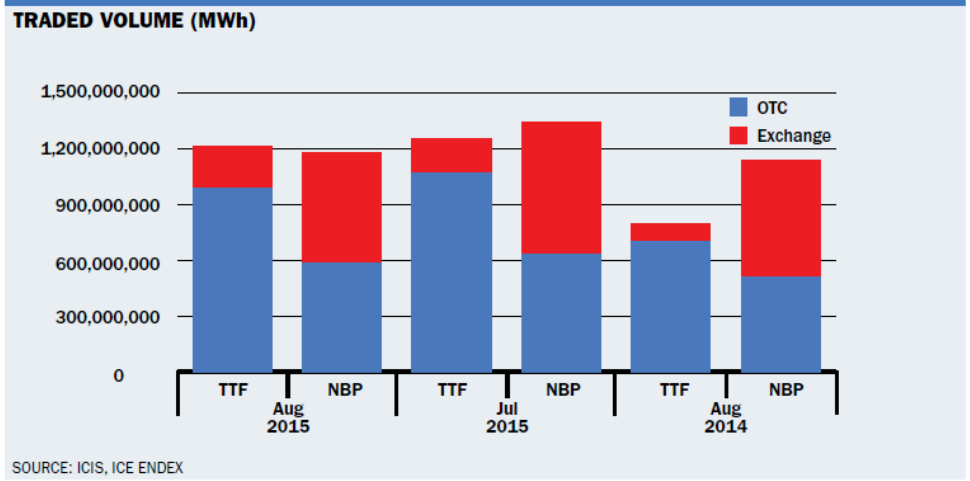
Market participants polled by ICIS believe the TTF will consolidate its position as Europe's most liquid trading venue in the coming months. The key advantage of trading at the TTF for many shippers is its euro-denomination.

The majority of gas trading in Europe is conducted in euros, but the NBP deals in pound sterling. For shippers in mainland European markets, trading and hedging at the NBP introduces additional currency risk exposure which can be avoided by trading at the TTF.

One source also highlighted the potential growth for TTF exchange trade – on the ICE platform it continues to lag well behind the NBP – as a factor that could help the hub establish itself firmly as the most liquid point in Europe. jake.horslen@icis.com

Click here for more detailed analysis of the Dutch gas market, or here for analysis of the British gas market

DUTCH AND BRITISH NATURAL GAS LIQUIDITY - OTC AND EXCHANGE



SOURCE: ICIS, ICE ENDEX

Source: ICIS Heren

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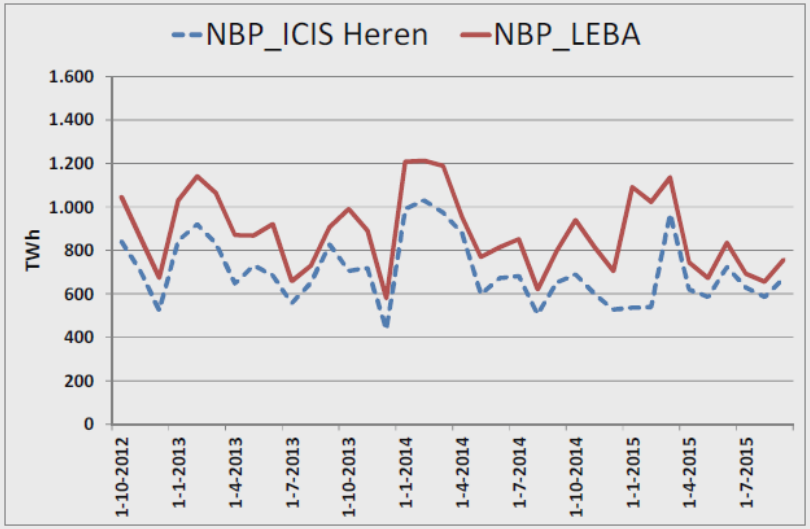
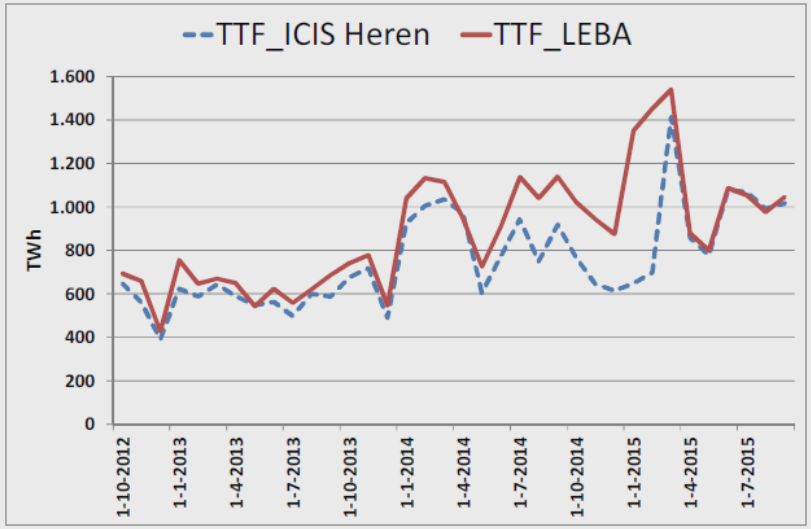
OTC trade at NBP and TTF
NBP biggest hub according to LEBA data

	NBP (LEBA + exchanges)	TTF (LEBA + exchanges)
GY12/13	15.542	7.768
GY13/14	18.267	12.150
GY14/15	18.642	15.075

OTC trade at NBP and TTF: **LEBA reports structurally more OTC at NBP than ICIS**





Source: ICIS Heren, LEBA

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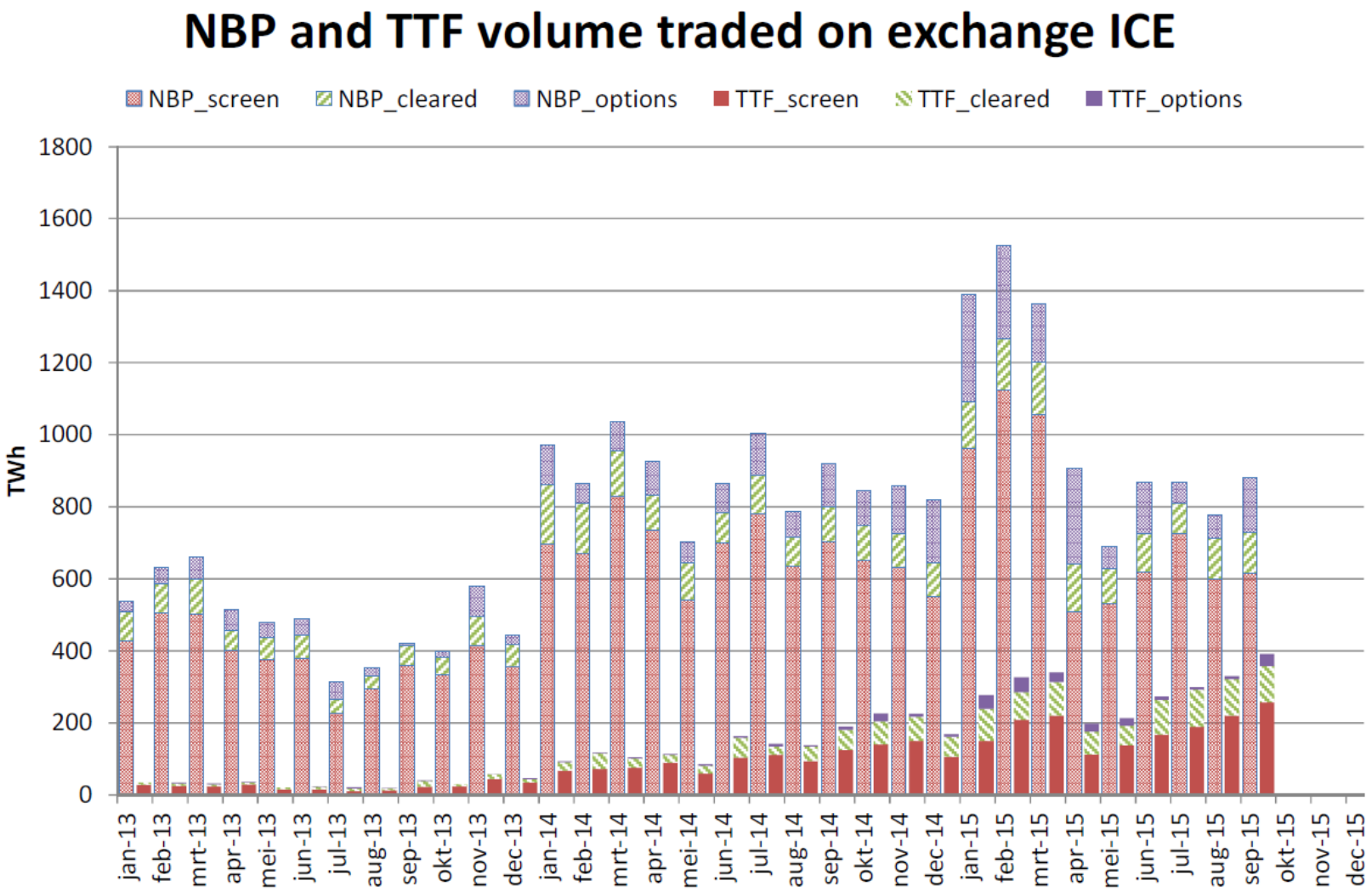
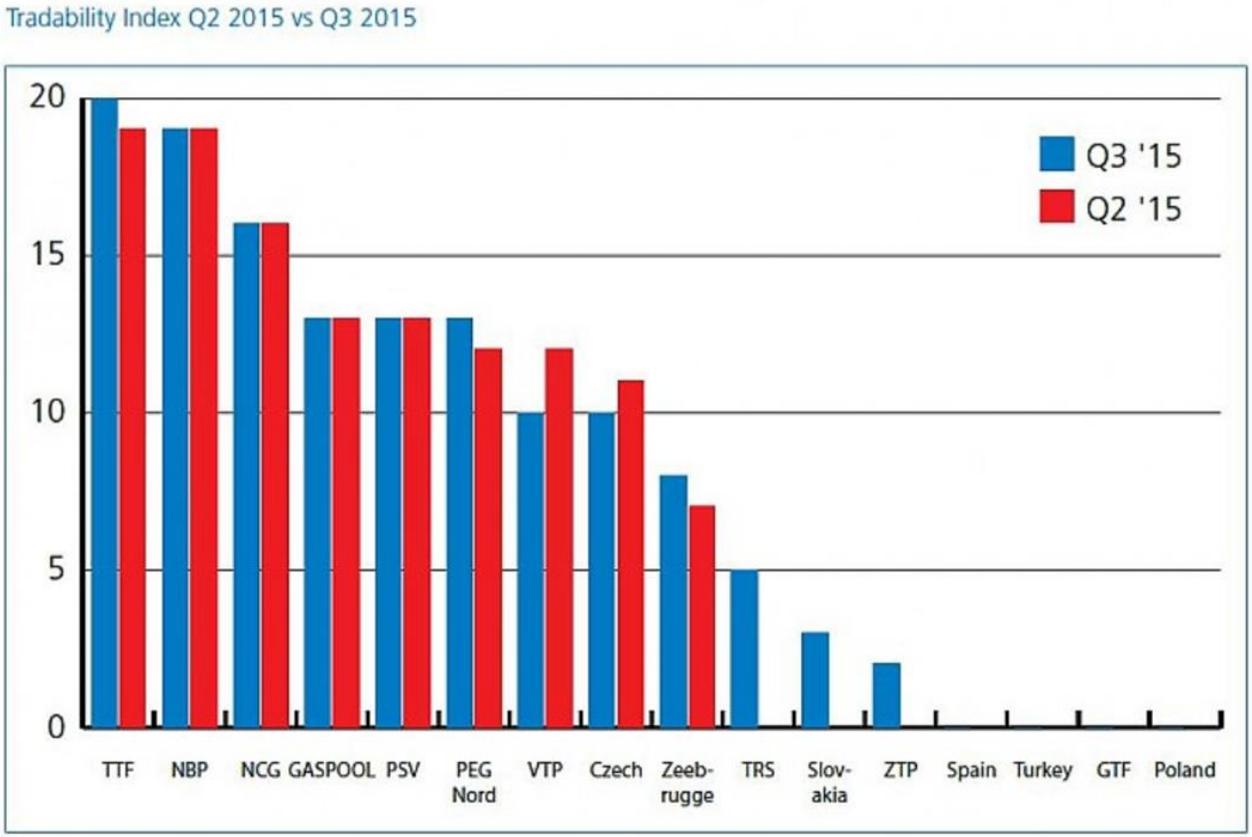
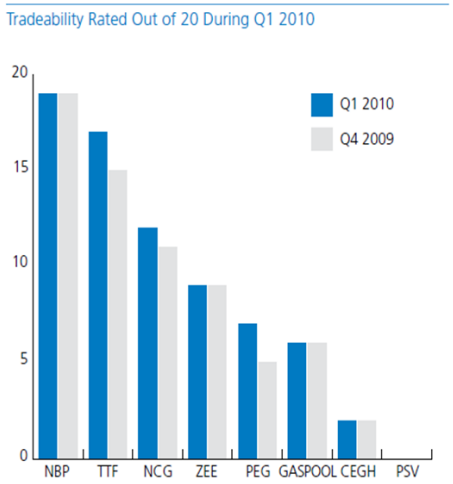
Exchanges more dominant at NBP than at TTF



TTF is front-runner due to far-curve products (seasonal and annual)



The majority of hubs show a positive development



Source: ICIS Heren

Churn rate definitions

	Volume 2014/15	TWh		Churn rate
	Traded volume	**14750**		
Definition 1	Net volume	430	14750÷430	34.3
Definition 2	**Local consumption**	**420**	14750÷420	**35.1**
Definition 3	System throughput	980	14750÷980	15.1

Gas hub	Churn rate
NBP	20.8
TTF	35.1
NCG	2.2
Gaspool	1.3
Zeebrugge	8.0
PEG's	0.9

Source: GTS analysis, ICIS Heren, LEBA, EuroStat

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Vision for Northwest-European gas hubs
TTF will overtake NBP as a leading hub

- Conditions for a successful gas hub:
  - Interconnectivity to other gas markets
  - Diversification of supply: domestic, pipeline and LNG
  - Availability of storage
- Further growth of continental gas hubs
- Further diversion of the role of gas hubs
  - Trading hubs: NBP and TTF
  - Balancing hubs: Zeebrugge, NCG, Gaspool, PEG, CEGH
- Less dominance by NBP
  - Influence of TTF increases
  - Currency risk: NBP (p/therm) and TTF (€/MW)