



Opening OCM for competition

Proposals how to mitigate or remove pending risks to open the UK balancing market for competition

0555R – Review of the Market Operator provision (OCM)

How to reduce market liquidity risk? 1/3

R1

R2

Explain openly arguments against liquidity risks with PEGAS

- Status quo NBP – Balancing market is split between broker and ICE Endex
 - In 2014: ca. 24,000,000 ktherms were traded in standardised balancing products for the spot market like WD, DA and WE at the VTP NBP, thereof
 - Ca. 80% with more than 5 broker mainly in the business hours → very competitive market; almost all market participants use Trayport as trading system for the NBP broker market
 - Ca. 20% on the exchange (ICE Endex), mainly in the non-business hours; around 3% of the ICE Endex volumes were triggered by balancing activities of National Grid
- What will happen, if PEGAS is equal trading platform for National Grid?
 - As already proved in several continental European spot markets, PEGAS will:
 - Increase liquidity and activity in Exchange trading of balancing products during business and non-business hours especially in Within-Day products (please use backup slide 14)
 - Increase happiness with TSO's, MAM and regulators due to higher transparency and bundled balancing liquidity on a supervised exchange instead on the broker market
 - Lower the costs for balancing for member inside the OCM down to 50% of current costs
- Inside a competition between exchanges and brokers for balancing liquidity, these liquidity will never disappear but rather move amongst the competitors

These developments will
remove liquidity risks



How to reduce market liquidity risk? 2/3

R1

R2

All remaining market liquidity risks are mitigated or removed, if

- All OCM member have equal access to PEGAS as now to ICE Endex
 - To see and trade balancing products also via PEGAS, because National Grid trades on both trading platforms equally according rules given by EU NC Bal.
 - To see and trade balancing products at NBP also amongst themselves
- PEGAS will enable transparency in own balancing prices for free for
 - All OCM member which become new PEGAS member via technical access for free; in addition no fees for membership or transaction in the first year on NBP
 - All OCM member, which are not yet PEGAS member, by providing a very simple solution for a live view into our NBP order books

These measures will completely remove remaining liquidity risks



How to reduce market liquidity risk? 3/3

R3

Are there cash out price risks with competitive balancing platforms?

- No, because National Grid is obliged, according EU NC Bal., to trade the best price on the approved trading platforms
 - Having more prices, due to a second balancing platform available, will rather improve than worsen the opportunities for National Grid to get the best price
- No, because cash out pricing across 2 Exchanges is already field tested
 - With German MAM NCG, who use equally ICE Endex and PEGAS for balancing
 - NCG trades strictly according Merit Order List (MOL) the best price, which is now even more market reflective due to access to two trading platforms (please see backup slides)
 - NCG obliged both exchanges to supply with price information, so that NCG itself determines the applicable cash out prices → ICE Endex and PEGAS adjusted processes
- No, because both Exchanges have already the processes in use to supply a TSO with needed price information for cash out pricing acc. EU NC Bal.

For OCM UK it is suggested to allocate the responsibility and actions for cash out price calculation to the neutral market operator National Grid, instead using of only Exchange for that.



Are there any risks with frequency of cash out price determination/publication

R4

Will competitive balancing platforms worsen the cash out price frequency?

- No, there is no risk that the cash out price frequency will worsen, because
 - Both exchanges have to provide National Grid with price information according EU NC Bal. and therefore will match the market demand for cash out prices
 - Both exchanges are obliged to provide NCG with price information according EU NC Bal. and therefore match the market demand for cash out prices already today
 - PEGAS delivers already today price information with as shorter frequency as the MAM NCG publish cash out prices according EU NC Bal.
 - This fact indicates that a second balancing exchange is not the bottleneck for cash out price determination/publication

For OCM UK it is suggested to allocate the responsibility and actions for cash out price calculation to the neutral market operator National Grid, instead using of only Exchange for that.

What about trading costs on two balancing platforms to access the same liquidity level?

Will competition force OCM member to sign up to two balancing markets?

- No necessarily, it's up to the member to decide according rationale criteria
 - As cost, services, product portfolio, used trading technology, ... to decide for his best suited trading platform → that's competition
 - If he wants to stay at only one platform, he can completely move to PEGAS, if we offer better conditions for him to access the same liquidity pool or stay with ICE
- To convince existing OCM member and to build up trust and experiences into our services, we will offer a very strong “Welcome package” to the industry
 - More details to the “Welcome package” are available on backup slide 12

For OCM UK it is suggested to support strongly the first-time possible competition between balancing platforms on the OCM with equal treatment of both exchanges and removing of some still existing “grandfather rights” for only one platform due to missing competition in the past.

Level playing field across multiple markets

R6

Is there a risk of “cherry picking” by multiple balancing platforms?

- Up to now the legal framework, preconditions and risk assessments for the possibility of multiple trading platforms for National Grid are under review
 - PEGAS is willing to support National Grid with all needed products and processes for smooth market balancing
 - Physical and Locational products will be introduced, once PEGAS received the approval as second balancing platform for the OCM, because NG is the single user of these products
 - PEGAS is keen on to improve with the UK gas industry the existing products, trading and delivery process as we already did with many other European TSO's

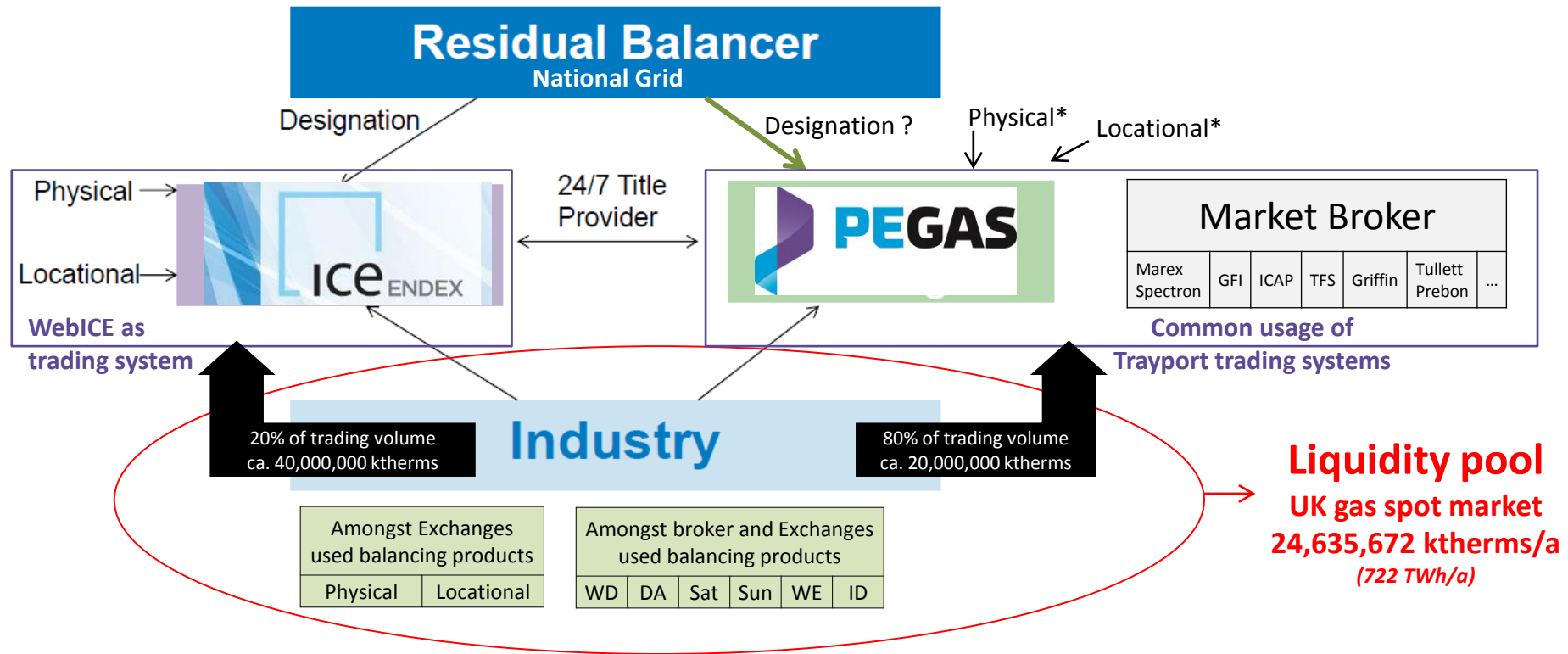
PEGAS can't see any risk of cherry picking, because our understanding of fair competition between trading platforms includes equally obligation and rights for both exchanges.



Backup

More information available under www.pegas-trading.com

PEGAS aims to strengthen the OCM liquidity with competition between trading platforms



- All trading venues (exchanges and brokers) use the same liquidity pool and almost the same balancing products but different technical access

* Source: Presentation given by National Grid inside 0555R meeting regarding OCM provision; extended with comments by PEGAS

Technical access to PEGAS prices

Using PEGAS Gas Direct Screen or Trayport Trading GatewaySM

- PEGAS Gas Direct Screen (GDS)
 - Usage for small and middle-sized member, shift trader as well as back-office user
 - Pro: Very simple web based frontend preconfigured by PEGAS
 - Contra: Only PEGAS prices are visible/tradable and no integration of broker or other exchanges into one order book
 - Costs/user towards PEGAS:
 - ca. 1,300 GBP/a
- Trayport Trading GatewaySM (TGW)
 - Usage for bigger member with many trader and a lot of trading activities across several trading venues and commodities
 - Pro: Integration of prices from other broker and exchanges into one order book per product
 - Contra: Additional charge to Trayport to be paid for using these services, beside PEGAS fee
 - Costs/user towards PEGAS:
 - ca. 1,300 GBP/a

[1] GV8://montmartre2.powernext.fr/ - GlobalVision

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Withdraw AllWithdraw Me

Delete AllDelete Me

TTF				
Qty	Bid	Ask	Qty	
102	16.825	17.000	300	
30	16.650	16.675	*40	
		19.000	40	
60	16.000			

NCG / TTF				
Qty	Bid	Ask	Qty	
120	-0.125	0.425	20	
*17	0.300	0.350	*8	
115	-0.150			
		0.200	71	

NCG				
Qty	Bid	Ask	Qty	
120	16.875	17.250	20	
17	16.975	17.000	*8	
		16.675	9	
120	16.800	16.700	20	

Bank Holidays display / hide

PEG Nord / TTF				
Qty	Bid	Ask	Qty	
		0.450	*720	
		0.350	10.320	

PEG Nord/NCG				
Qty	Bid	Ask	Qty	
		0.125	*240	

ZTP/TTF				
Qty	Bid	Ask	Qty	
85	-0.300	0.175	8	
*30	0.000	0.050	120	
120	-0.100			

Bank Holidays display / hide

TTF									
BidCpy	BidQty	B	BidPrc	AskPrc	AskQty	A	AskCpy	LstPrc	TotQty
GFI	120		21.375	21.450	120	GRIF		21.400	
PEG	30		21.375	21.450	120	SPEC		21.400	
GRIF	120		21.350	21.450	60	SPEC		21.400	
PEG	60		21.350	21.450	120			21.400	
	70		21.350	21.550	90	GFI		21.400	

Update: PEGAS at NBP spot market

Following facts characterise the current PEGAS spot market at NBP

- Membership
 - Existing memberships for NBP at PEGAS: 25 member, thereof
 - 9 member are not OCM member; 8 of them uses Trading Gateway; 1 use GDS
 - 16 member are OCM member; 13 of them uses Trading GatewaySM; 3 uses GDS
 - Possible extension of PEGAS membership to NBP for further 19 member
 - which are already OCM and PEGAS member, but are not registered for PEGAS NBP
 - 15 of them will use Trayport Trading GatewaySM and 4 would use Gas Direct Screen
 - Can be easily registered for NBP without paying extra membership fee
 - New membership possible for remaining 26 OCM member
 - 16 of them already use Trayport frontend for broker trading
 - Only 10 of them would be new with Trayport frontend for trading
 - New membership would be supported by a “Welcome package” (please see backup)
- Trading figures for NBP since launch in March 2015 until end of Sep. 15:
 - 2,450 ktherms in 45 trades between 12 active members
- TSO support for gas balancing: currently not given for PEGAS

“Welcome package” for current OCM member and regular PEGAS pricing as from 2016 at NBP

New pricing scheme valid as from 2016

PEGAS – Membership fees		
Number of countries	Countries	Spot & Futures
Two countries	D+NL or D+F or D+B or UK+B or UK+D or UK+NL or	9,000 €/a, ca. 6,500 GBP
All countries	D, NL, F, B, UK, I, ..	15,000 €/a, ca. 11,000 GBP

PEGAS – Technical fees	
User type	Spot & Futures
PEGAS trader	1,800 €/a, ca. 1,300 GBP
Shift trader	750 €/a, ca. 540 GBP
Downstream	1,800 €/a, ca. 1,300 GBP

PEGAS – Regular transaction fees for NBP*			
Market	Trading	Clearing + delivery	Total
Spot	0.0015 p/therm	0.0025 p/therm	0.0040 p/therm
Futures	0.0007 p/therm	0.0008 p/therm	0.0015 p/therm

“Welcome package “ for OCM member

OCM member becomes PEGAS member			ICE Index
Fee type	First 12 months as new NBP only PEGAS member	After 12 months	Regular pricing OCM member
Membership	0	ca. 6,500 GBP	15,000 GBP/a
Technical	0	ca. 3,100 GBP	0
Transaction for Spot market	0	0.004 p/therm	Business hours 0.003 p/therm Non-business hours 0.009 p/therm

OCM member will not become a PEGAS member	
Fee type	With approval of PEGAS as trading platform for National Grid
Read-only access to balancing prices	For free

Estimated costs* for using Trayport Trading Gateway	
Depends on company size, # of user, trading potential...	0... 50,000 GBP/a
<ul style="list-style-type: none"> Costs are bilateral negotiated with and were charged by Trayport; estimation is not binding and relies only on feedback given voluntary by some market participants 	

* Assumption: Average new member needs 2 normal and 1 shift trader licenses; existing member only 1 normal license extra

Possible savings for the whole OCM if all OCM trading volumes goes to PEGAS

Whole OCM could benefit from savings of more than **700,000 GBP/a**

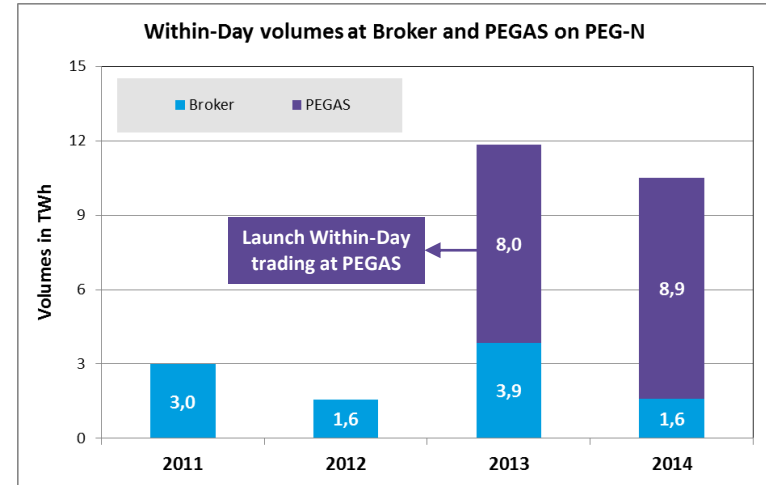
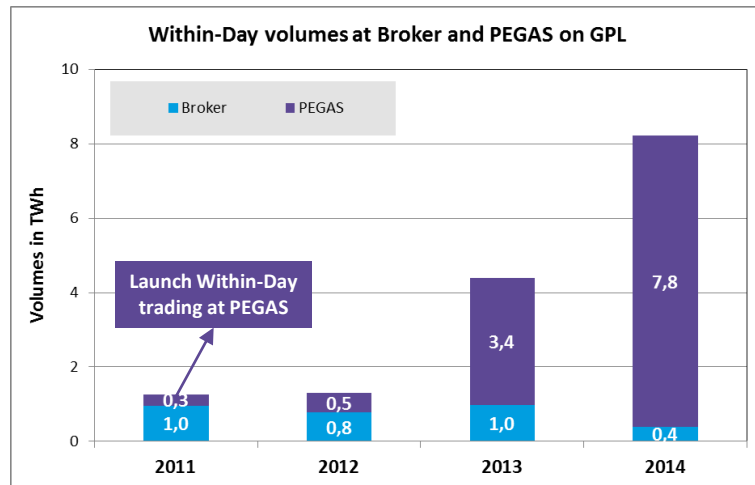
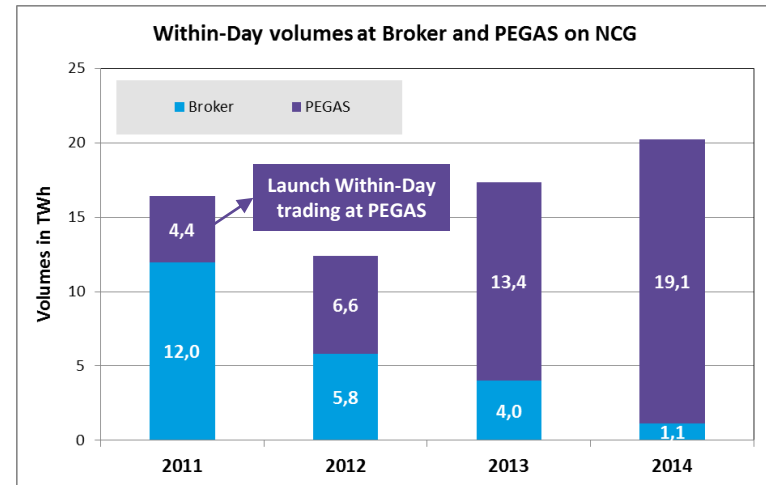
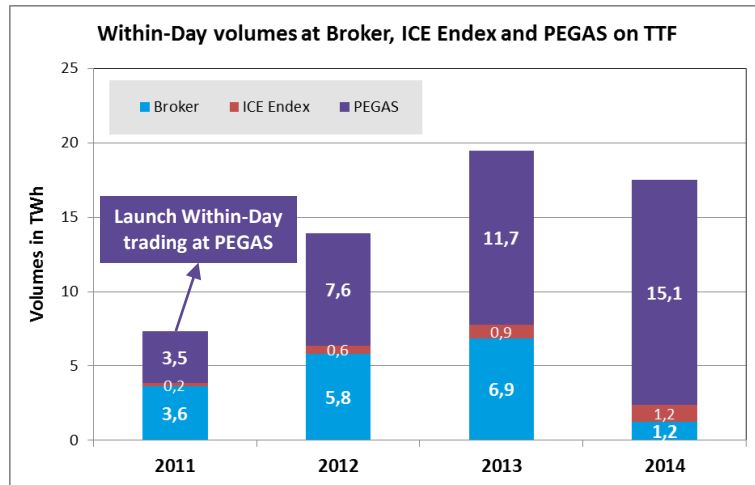
OCM trading at		ICE Exenx	PEGAS		Possible savings	
Fees in GBP		70 member	39 existing member	31 new member	- savings; + expenses	Savings in %
Membership fee		1,050,000	-	201,500	- 848,500	- 81%
Technical fee*		-	50,700	97,340	+ 148,040	
Transaction fee (ratio between business hours : non business hours)	70:30	424,446	353,705		- 70,741	- 17%
	40:60	583,613	353,705		- 229,908	- 39%
	10:90	742,781	353,705		- 389,076	- 52%
Total		1,474,446 ... 1,792,781	703,245		- 771,201 ... - 1,089,536	-52% ... - 61%

- Comparison with ICE Exenx based on following assumptions
 - Number of registered member at OCM: 70; thereof 39 already PEGAS member
 - OCM volume in 2014: 4,421,314 ktherms, thereof ca. 3% by National Grid
 - Membership fee: ICE Exenx 15,000 GBP/a; PEGAS 6,500 GBP/a
 - Technical fee: ICE Exenx for free; PEGAS 1,300 GBP/standard user, 540 GBP/shift trader
- Transaction fees
 - ICE Exenx for business hours: 0.003 p/therm; for non-business hours: 0.009 p/therm
 - PEGAS: 0.004 p/therm (no distinction between business and non business hours)

* Assumption: Average new member needs 2 normal and 1 shift trader licenses; existing member only 1 normal license extra



Increasing exchange share inside important Continental European Within-Day markets*



- PEGAS is the solely balancing platform for Within-Day trading in the gas markets of NCG, GPL and PEG-N

PEGAS – Balancing platform for Europe

PEGAS in figures		Balancing markets of PEGAS							
Numbers for GY 14/15		All	TTF	NCG	GASPOOL	PEG’S	NBP	ZEE	ZTP
# Trades		374,625	77,157	138,196	92,509	63,546	45	8	3,164
Volumes in MWh (‘000 Therms)		353,293,822 (12,054,890)	106,282,314 (3,626,504)	117,604,512 (4,012,834)	65,207,539 (2,224,975)	60,483,000 (2,063,766)	71,803 (2,450)	12,654 (432)	3,632,000 (123,929)
Active member		142	77	125	111	55	12	6	21
Registered member		162	92	137	124	60	23	22	31
Market share Within-Day			> 80%	> 90%	> 90%	> 80%	< 1%	< 1%	> 40%
Balancing products (WD, DA, WE, Ind. Days)	VTP	✓	✓	✓	✓	✓	✓	✓	✓
	Physical		✗			✓*	✓	✗	
	Locational		✗			✓	✓*	✗	✗
	Hours		✓	✓	✓	✗	✓*	✗	✗
Trayport® ETS SM as Trading system	Spot	✓	✓	✓	✓	✓	✓	✓	✓
	Futures	✓	✓	✓	✓	✓	✓	✓	✓
24/7 trading			✓	✓	✓	✓	✓	✗	✓
Balancing platform acc. EU NC Bal.			✓	✓	✓	✓	✗	✗	✗
Real-time cash out pricing support for TSO/MAM acc. EU NC Bal.			✓	✓	✓	✓	✓*	✗	✗
Single-sided-nomination		✓	✓	✓	✓	✓	✓	✓	✓
Order alert		✓	✓	✓	✓	✓	✓	✓	✓
Trade alert		✓	✓	✓	✓	✓	✓	✓	✓
Trading agent functionality		✓	✓	✓	✓	✓	✓	✓	✓

* Once National Grid /Ofgem supports competition in the UK gas balancing market and will use PEGAS equal to ICE Endex

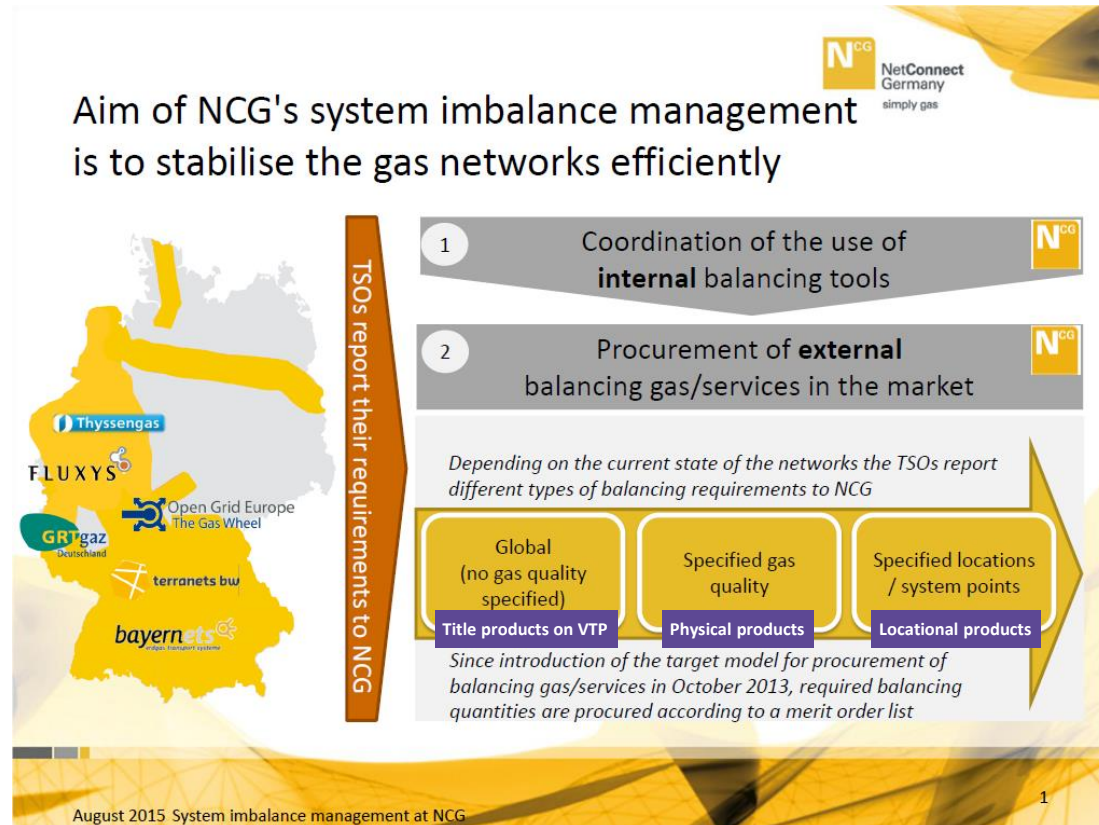
Product description for NBP trading

NBP Spot

Subject of the contract	Delivery of natural gas with a constant output of 1,000 therms/day (≈ 29.3071 MWh/day) from 07:00 am CET (06:00 am UK time) on each delivery day of the delivery period until 07:00 am CET (06:00 am UK time) of the following calendar day
Trading platform	24/7 trading within the trading system Trayport® ETS SM
Tradable contracts	Within-Day, Day-Ahead, Weekend, Saturday, Sunday, Individual Days
Minimum volume tick	1 contract or multiples thereof → ICE Endex for OCM: Min. 4 contracts
Pricing	GBP pence per therm with three decimal digits
Minimum price tick	GBP pence 0.005/therm, multiplied by the contract volume → ICE Endex : 0.01 GBp/therm
Location spread	ZEE/NBP → simplifies balancing for member across two well connected markets

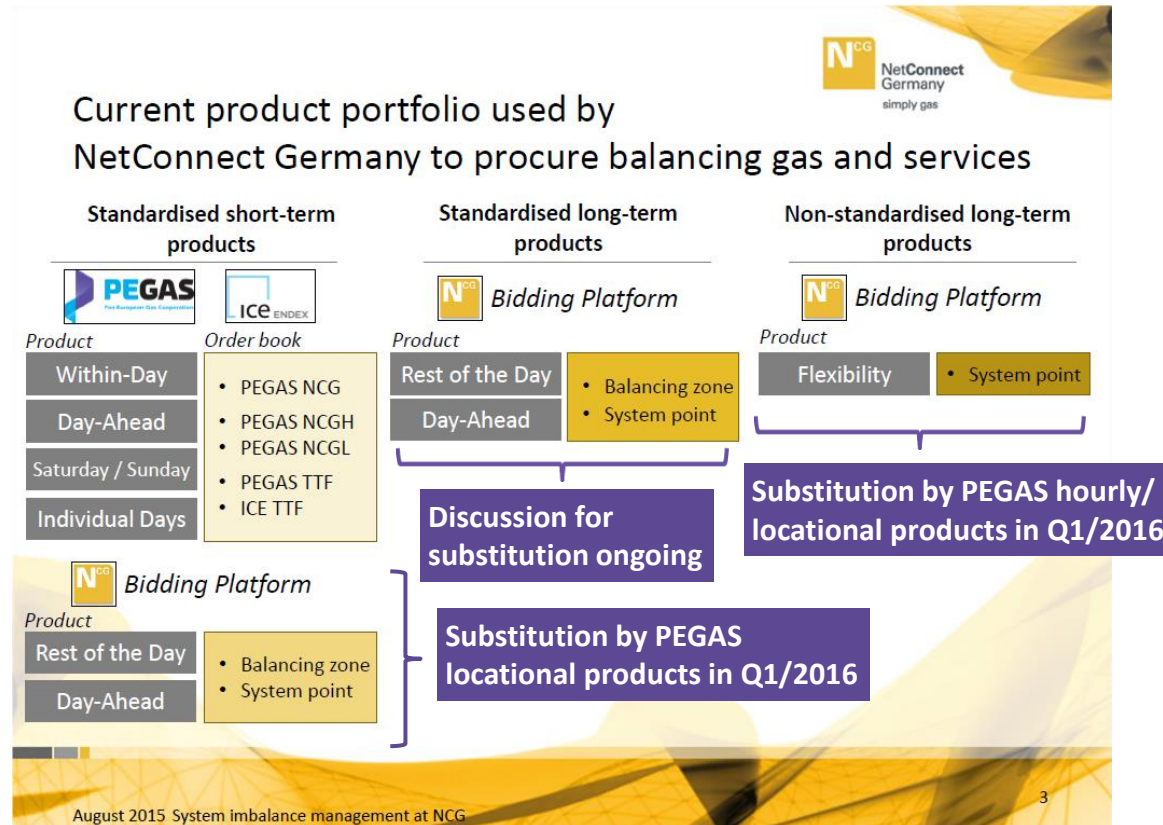
NBP Futures

Subject of the contract	Delivery of natural gas with a constant output of 1,000 therms/day from 07:00 am CET (06:00 am UK time) on each delivery day of the delivery period until 07:00 am CET (06:00 am UK time) of the following calendar day
Trading platform	Continuous trading within the trading system Trayport® ETS SM from 08:30 am to 06:00 pm CET
Tradable delivery periods	At maximum, the following delivery periods can be traded <ul style="list-style-type: none"> the respective next 4 months the respective next 4 full quarters the respective next 4 full seasons the respective next 3 full calendar years
Minimum volume tick	5 contracts or multiples thereof → ICE Endex : Min. 5 contracts
Pricing	GBP pence per therm with three decimal digits
Minimum price tick	GBP pence 0.005/therm, multiplied by the contract volume → ICE Endex : 0.01 GBp/therm
Location spread	ZEE/NBP → simplifies trading for member across two well connected markets



- NCG as MAM balance the market area by order of many German TSO'S
- Balancing products corresponds to EU NC Bal. and OCM UK products

* Source: Presentation given by NCG inside a meeting with foreign TSO and PEGAS, extended with comments by PEGAS



- NCG is using standardised balancing products according best price criteria given by EU NC Bal. on PEGAS and ICE for TTF market area
- Inside NCG market only PEGAS and own balancing platform is used

* Source: Presentation given by NCG inside a meeting with foreign TSO and PEGAS, extended with comments by PEGAS

Procurement of low cal balancing gas at TTF

NetConnect Germany simply gas

Procurement in own market area

- Primarily balancing gas is procured in PEGAS NCG spot market without obligation for counterpart to cause a physical effect

Gas quality-specific procurement in own market area

- Since October 2013 NCG also uses the gas quality-specific order books on PEGAS for quality-specific requirements

Balancing gas procurement in adjacent market area:

- For quality-specific low cal gas requirements NCG also uses the possibility to procure balancing gas at TTF gas hub. Capacities need to be booked for the transport.

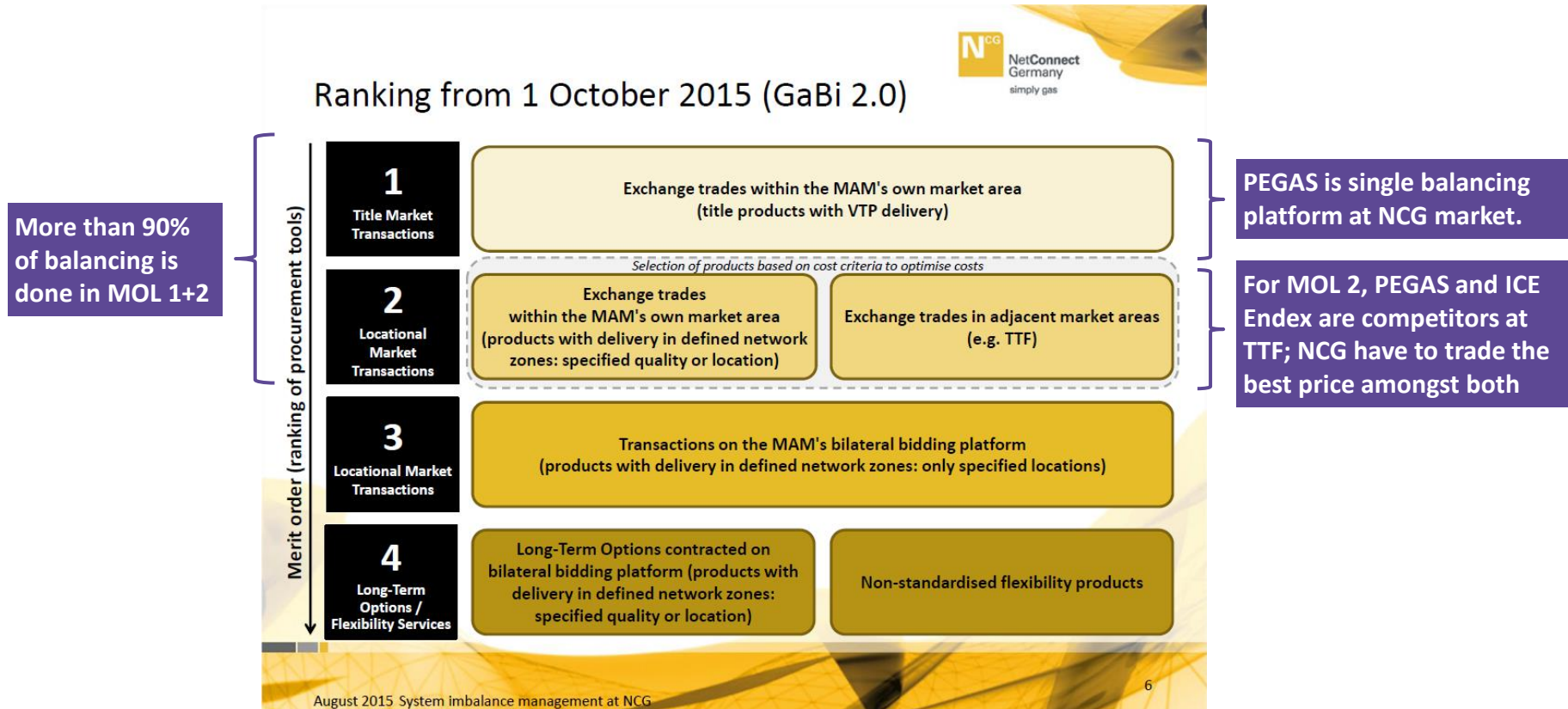
Only at TTF are PEGAS and ICE Endex competitive balancing platforms for NCG

Transport fees are considered in the Merit order list for best price execution

August 2015 System imbalance management at NCG

- To get the best balancing price for L-gas, NCG is allowed to trade in the adjacent market area TTF with PEGAS and ICE Endex and transport gas
- Sometimes TTF price + transport fee is better than NCG-L price

* Source: Presentation given by NCG inside a meeting with foreign TSO and PEGAS, extended with comments by PEGAS



- Ranking for usage of balancing products inside MOL given by EU NC Bal.
- As long as MOL 1 satisfy balancing demand of NCG, each traded price is accepted and can be used for determining cash out prices

* Source: Presentation given by NCG inside a meeting with foreign TSO and PEGAS, extended with comments by PEGAS

Transparency regarding balancing gas requirements in the market area NetConnect Germany

- 1) Current requirements for balancing gas are published indicative on www.net-connect-germany.com

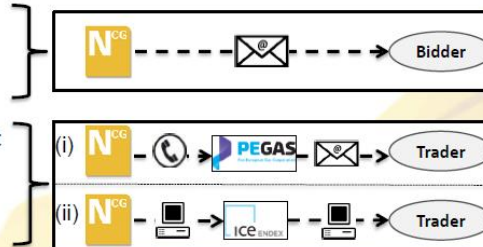


In case of high demand:
automatic mail to registered
market participants
(free of charge)

Push Service
If you would like to be notified automatically about the publication of new indications, please feel free to subscribe to our push service anytime. Unsubscribing from the service is possible at any time. Please send a mail to balancing-gas@net-connect-germany.com.
Registration to the NCG Push Service

- 2) Mails to Bidders on Bidding Platform provide information about high demand for balancing gas
- 3) Furthermore requests for quantities can be sent via exchange by NCG:
 - (i) PEGAS: Market Alert
 - (ii) ICE: Request for Quantity

Better known as Order Alert



Example of Order Alert e-mail

Dear Trading participants,
Please be aware that the following order has been placed on PEGAS:

Market area: GPL Locational

Product: Within-Day

Bid/Ask: 25.000 EUR/MWh

Quantity: 100 MW

Kind Regards,

Simple call triggers the Order Alert on 24/7 base

- PEGAS Order Alert is distributed anonymously to all trader who registered for the order alert service via E-Mail latest 15 minutes after the call
- Requesting an Order Alert is possible without registration

* Source: Presentation given by NCG inside a meeting with foreign TSO and PEGAS, extended with comments by PEGAS