

# Natural Gas Trading – Further Developments

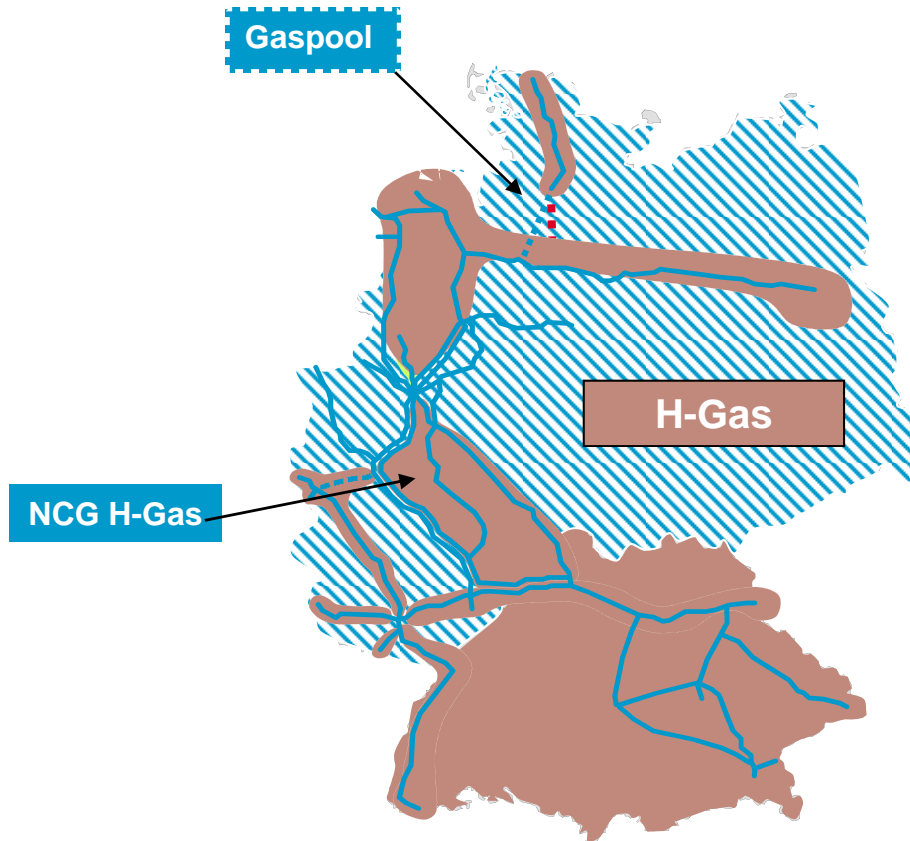
Sirko Beidatsch, Customer Relations

Developments of the German gas market

Product developments at EEX

System balancing energy market for gas at EEX

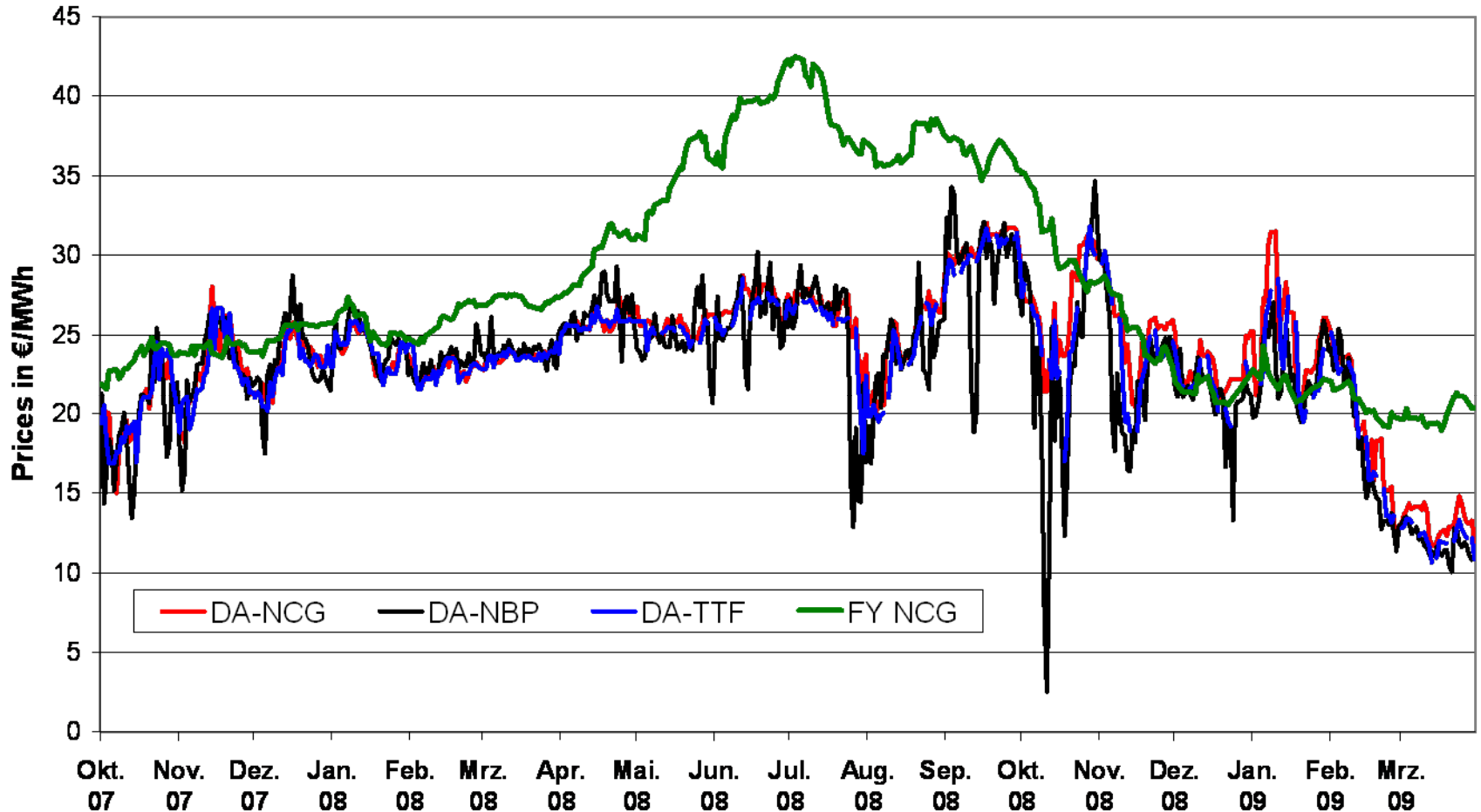
# Extension of market areas in Germany as of the new gas year 2009



## Market areas as of 1th October 09

- NCG NetConnect Germany
  - E.ON GT
  - Bayernets
  - Eni Gastransport
  - GRTgaz
  - GVS Netz
- Gaspool
  - Gasunie Deutschland
  - Ontras
  - Wingas Transport
- These market areas will cover approx. 95% of the German H-gas market volume
- Remaining H-gas market area of RWE Transportnetz Gas should be sold in the next months

Comparison of the gas market prices

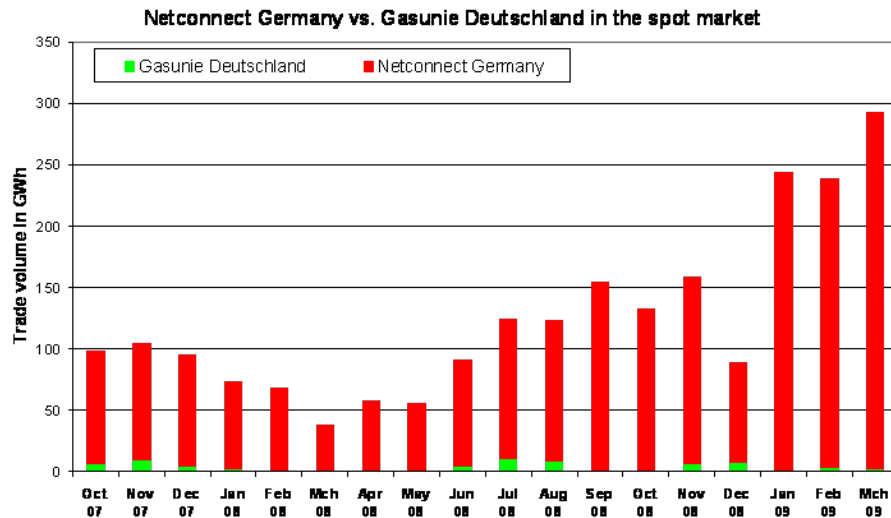


Sources: EEX AG, APX Group

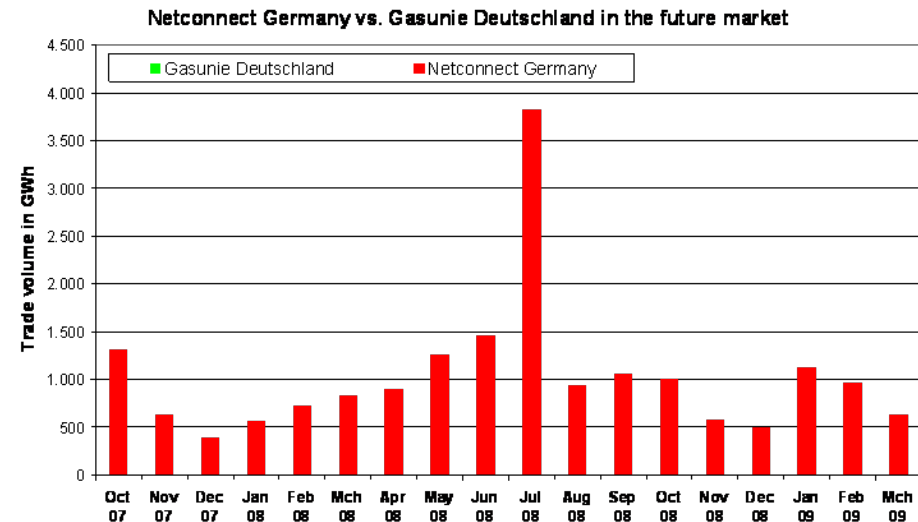
- Positive trend in spot market NCG
- Market area NCG dominates trades volumes
- Underdeveloped volumes at Gasunie Deutschland

Trading volume cumulated:  
(start of trading - 31 March 2009)

2.434.300 MWh Spot market  
23.552.880 MWh Future market



Source: EEX AG



Source: EEX AG

## Netconnect Germany

24/7 Trading GmbH  
 Actogas GmbH  
 advanced energy trading GmbH  
 BG International Limited  
 BKW FMB Energie AG  
 Danske Commodities A/S  
 DB Energie GmbH  
 Deutsche Bank AG  
 DONG Naturgas A/S  
 DREWAG Stadtwerke Dresden GmbH  
 E.ON Energy Trading AG  
 EconGas GmbH  
 EDF Trading Limited  
 Electrabel S.A.  
 EnBW Trading GmbH  
 EnergieFinanz GmbH  
 Energiehandelsgesellschaft West mbH  
 ENLOGS Energy Logistics & Services GmbH  
 ENOI S.p.A.  
 Gaselys S.A.  
 Gazprom Marketing & Trading Limited  
 Getec Energie AG  
 ICAP Energy A/S  
 KOM Solution GmbH  
 KOM-Strom AG  
 Lumius spol s.r.o.  
 Mercuria Energy Trading S.A.  
 Morgan Stanley & Co. International Limited  
 Nexen Energy Marketing London Limited  
 Nuon Energy & Wholesale N.V.  
 Österreichische Elektrizitätswirtschafts-AG  
 PCC Energie GmbH  
 RWE Supply & Trading GmbH  
 Saar Ferngas AG  
 Salzburg AG für Energie, Verkehr & Telekommunikation  
 Spectron Energy Services Limited  
 Shell Energy Trading Limited  
 Stadtwerke Flensburg GmbH  
 Stadtwerke Hannover AG  
 Stadtwerke Karlsruhe GmbH  
 Stadtwerke Leipzig GmbH  
 Stadtwerke München GmbH  
 Stadtwerke Viernheim GmbH  
 Statkraft Energi AS  
 Statkraft Markets GmbH  
 Südwestdeutsche Stromhandels GmbH  
 SYNECO Trading GmbH  
 Technische Werke Ludwigshafen am Rhein AG  
 The Royal Bank of Scotland plc.  
 Total Gas & Power Limited  
 Trianel European Energy Trading GmbH  
 UBS AG  
 UBS AG - London Branch  
 Vattenfall Trading Services GmbH  
 Vitol S.A.  
 VNG Verbundnetz Gas AG  
 WINGAS GmbH

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## Gaspool

24/7 Trading GmbH  
 Actogas GmbH  
 Becomac GmbH  
 BKW FMB Energie AG  
 Danske Commodities A/S  
 Deutsche Bank AG  
 DONG Naturgas A/S  
 E.ON Energy Trading AG  
 EDF Trading Limited  
 EHA Energie-Handelsgesellschaft mbH & Co. KG  
 Electrabel S.A.  
 EnBW Trading GmbH  
 EnergieFinanz GmbH  
 Energieunion AG  
 Energy & More Energiebroker GmbH & Co. KG  
 ENLOGS Energy Logistics & Services GmbH  
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 Stadtwerke Hannover AG  
 Stadtwerke Leipzig GmbH  
 Statkraft Energi AS  
 Statkraft Markets GmbH  
 SWB Vertrieb Bremen GmbH  
 SYNECO Trading GmbH  
 The Royal Bank of Scotland plc.  
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 UBS AG  
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 VNG Verbundnetz Gas AG  
 WINGAS GmbH

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Developments of the German gas market

Product developments at EEX

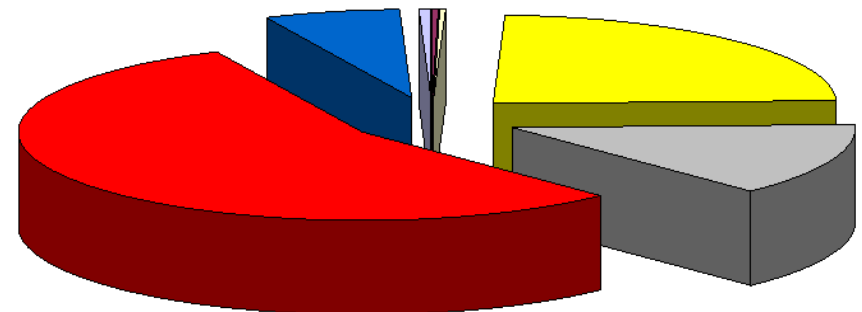
System balancing energy market for gas at EEX

## Spot Market

Within-Day
Day-Ahead
2-Day-Ahead
Weekend

## Derivatives market

WDNW
BOM
Month
Quarter
Seasons
CY



- Seasons tradable since 04th of May 2009
- OTC-Clearing for 1 MW allowed

Market Overview - EEX GAS EGT

Exch: XEUR Product: Exp/+:

Phase	Contract	CBidQty	CBid	CAsk	CAskQty
TRAD	GOBM JUN09				
TRAD	GOBM JUL09	30	10.50	10.80	60
TRAD	GOBM AUG09	30	11.00	11.30	30
TRAD	GOBM SEP09				
TRAD	GOBM OCT09				
TRAD	GOBM NOV09				
TRAD	GOBM DEC09				
	GOBM JUN09				
	GOBM JUN09				
	GOBM JUL09	30	-0.80	-0.20	30
TRAD	GOBQ JUL09	30	10.80	11.25	30
TRAD	GOBQ OCT09	30	17.60	18.40	40
TRAD	GOBQ JAN10				
TRAD	GOBQ APR10				
TRAD	GOBQ JUL10				
TRAD	GOBQ OCT10				
TRAD	GOBQ JAN11				
	GOBQ JUL09	30	-7.60	-6.35	30
	GOBQ JUL09				
	GOBQ OCT09				
TRAD	GOBS OCT09	30	19.60	20.40	30
TRAD	GOBS APR10	30	18.90	19.90	30
TRAD	GOBS OCT10				
TRAD	GOBS APR11				
	GOBS OCT09	30	-0.30	1.50	30
	GOBS OCT09				
	GOBS APR10				
TRAD	GOBY JAN10	10	20.90	21.65	10
TRAD	GOBY JAN11	10	24.05	25.05	10
TRAD	GOBY JAN12				
TRAD	GOBY JAN13				
TRAD	GOBY JAN14				
TRAD	GOBY JAN15				
	GOBY JAN10	10	-4.15	-2.40	10
	GOBY JAN10				
	GOBY JAN11				

[1] Gas - GlobalVision

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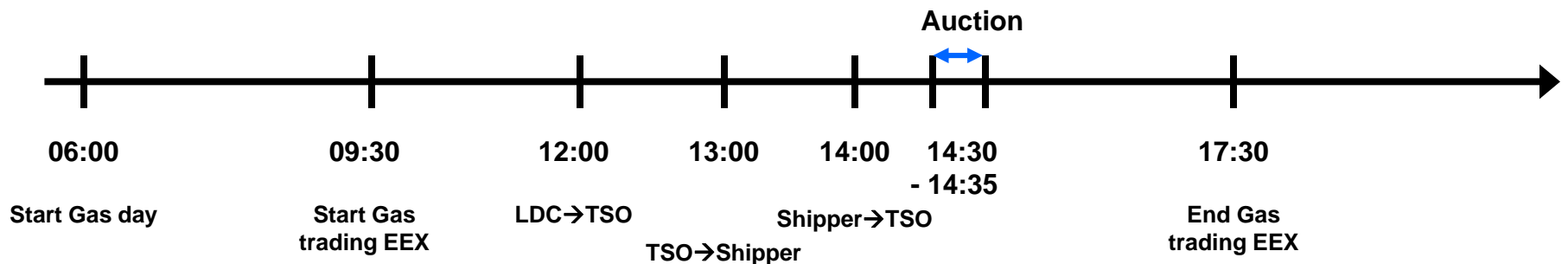
### Preconditions:

- Connection via Miss to EEX (not Webaccess)
- Own trayport server in company installed

# 1 MW Auction for natural gas

## Benefits for trading participants

- Improved structuring for purchase and sales portfolio
- Optimised usage of storage capacities on the market
- Avoiding transport penalties through imbalances
- Structure product 1 MW required separate market price mechanism
  - Cost for structuring could be implemented in the price
  - Fees for costly handling could be implemented in the price
- Concentration of trading activities/liquidity for 1 MW through
  - Pooling of traders interest for only 5 Minutes per day
  - Pooling of traders quantities for only 5 Minutes per day



Developments of the German gas market

Product developments at EEX

System balancing energy market for gas at EEX

An easy and transparent balancing regime, which

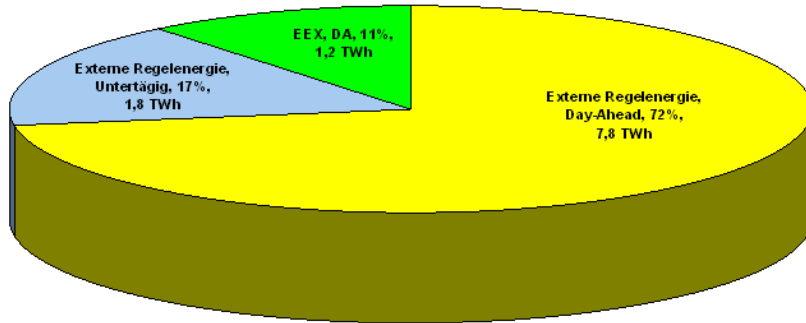
1. considers the abilities of the German gas infrastructure in favor of the transportation clients (shippers)
2. in which the cost for balancing energy oriented on the market prices
3. without a creation of a separate balancing market
4. which is compatible to the European gas markets,

is the basis of the further positive development of the German gas market.

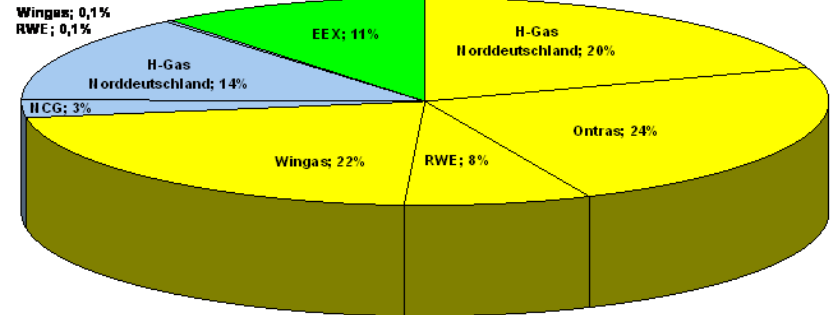
**→ Increase of liquidity at the EEX**

# Volumes of the balancing energy market

Traded volumes in the balancing market vs. EEX in Q4/08 and Q1/09

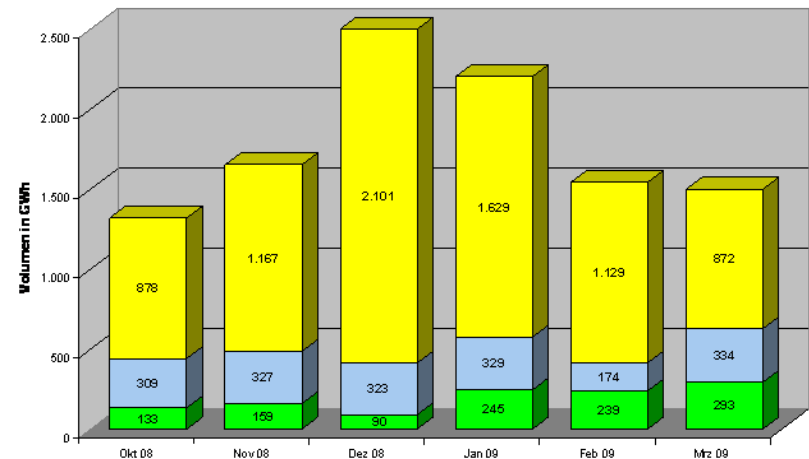


Traded volumes of TSO's in the balancing market vs. EEX in Q4/08 and Q1/09



Volumes in GWh	DA-BKN	Intraday-BKN	DA-EEX
NCG	0	288	
H-Gas Norddeutschland	2.103	1.486	
Ontras	2.534	0	
RWE	828	14	
Wingas	2.314	8	
GVS/ENI	0	0	
GdF	0	0	
<b>Sum</b>	<b>7.778</b>	<b>1.796</b>	<b>1.158</b>

Traded volumes in intraday and Day-Ahead-products

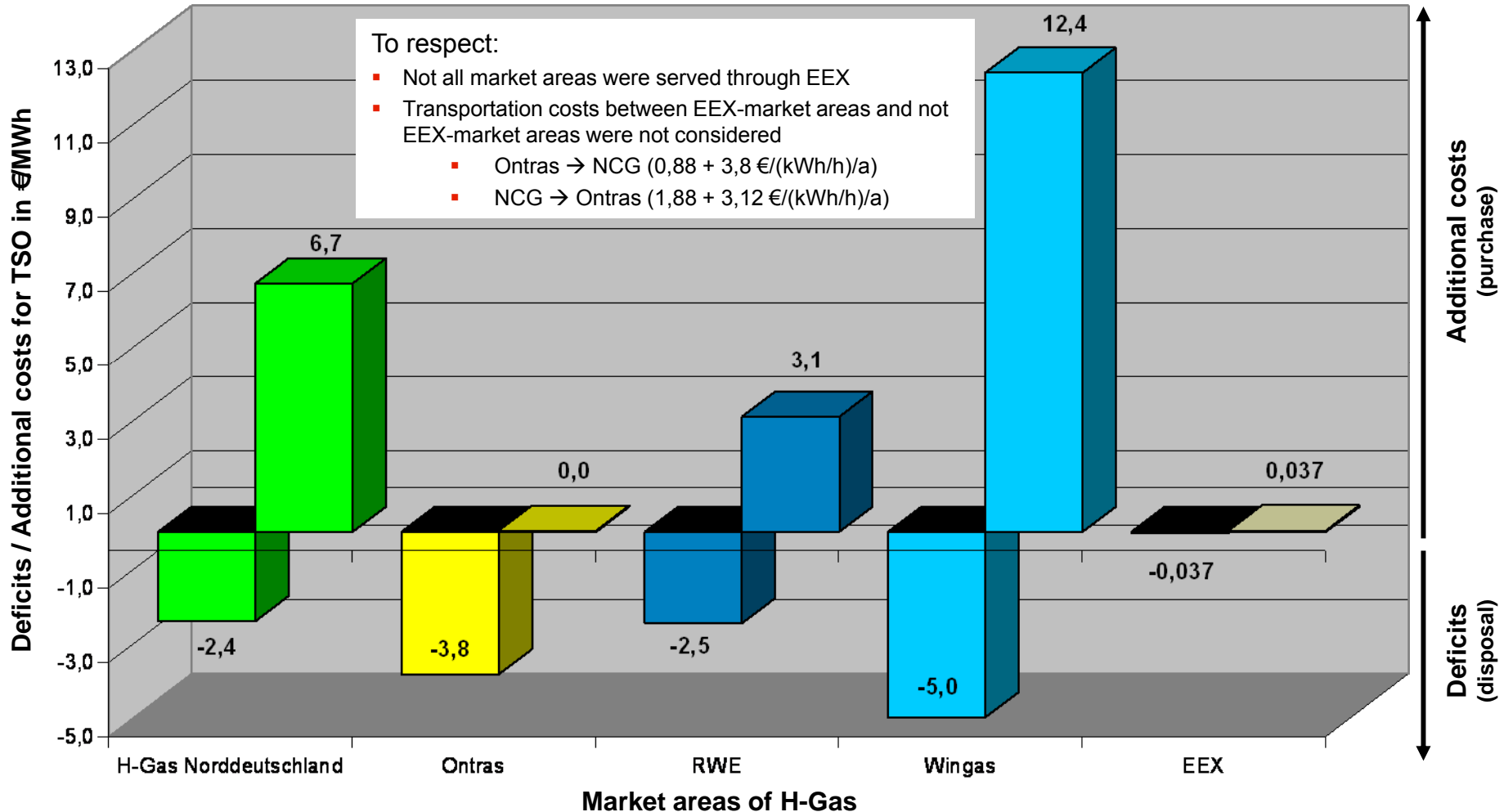


- Evaluation based on released data of 5 TSO's
- All Volumes of TSO's have been traded Over-the-counter (OTC)



# Bilateral balancing energy market vs. EEX

Variations of OTC-Day-Ahead trades from the EEX market prices in Q4/08 and Q1/09



## Needed products from the physical market and TSO's

- Usage of external system balancing energy for TSO's in terms of GABi Gas
  - BNetzA favours Day-Ahead
  - TSO favours for practical reasons intraday-products

## Ensure a basis liquidity for EEX in the spot market

- Overcoming Chicken-Egg-principle
  - TSO trades for physical reasons, mostly independent from the market price
  - Costs of system balancing energy with markups or discounts are socialized on the shippers
- TSO increase the trading volumes as initiator → best liquidity-provider

## Role model APX-UK OCM

- Ofgem advised TSO to trade system balancing energy at APX-UK OCM
  - Traded volumes increase by 700 % up to Ø 10,5 TWh/month
- Approval for EEX as „explicit“ market place for system balancing energy in Germany through BMWi and BNetzA preferred

## Spot Market

<b>Within-Day</b>
<b>Day-Ahead</b>
<b>2-Day-Ahead</b>
<b>Weekend</b>

## Derivatives Market

<b>WDNW</b>
<b>BOM</b>
<b>Month</b>
<b>Quarter</b>
<b>Seasons</b>
<b>CY</b>

### Benefits for customer through Within-day

- All needed products for the balancing market could be traded → Increase of counterparts for TSO's
- More transparency on the balancing market for all members through trades to actual market prices
- Intraday optimisation of own gas portfolios
- Revitalisation of smaller storage capacities for commercial usage

## Tradable delivery periods

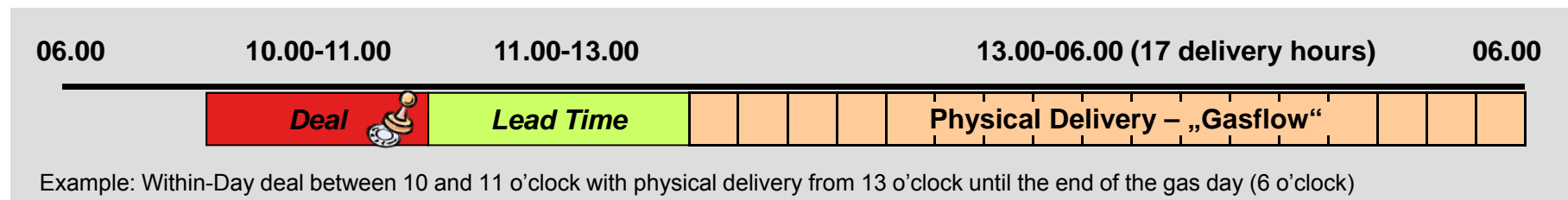
- Remaining delivery hours of the actual gas day, which are tradable at the EEX with 2 hours lead time for TSO's and traders

## Rolling reduction of contract volume (delivery volume)

- Bundled with the deal time stamp, hourly measured and transacted

## Delivery volume

- In relation to the deal time
- Maximum volume: 180 MWh, if deal is closed until 10 a.m. (18 h)
- Minimum volume: 100 MWh, if deal is closed between 17 and 17:30 a.m (10h)



Sirko Gas Spot - Trading Board - GAS WEDNESDAY - Order Market Overview

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Date: Thu, 14 May 2009 TSO: AccountID:

GAS WEDNESDAY - Order Market Overview

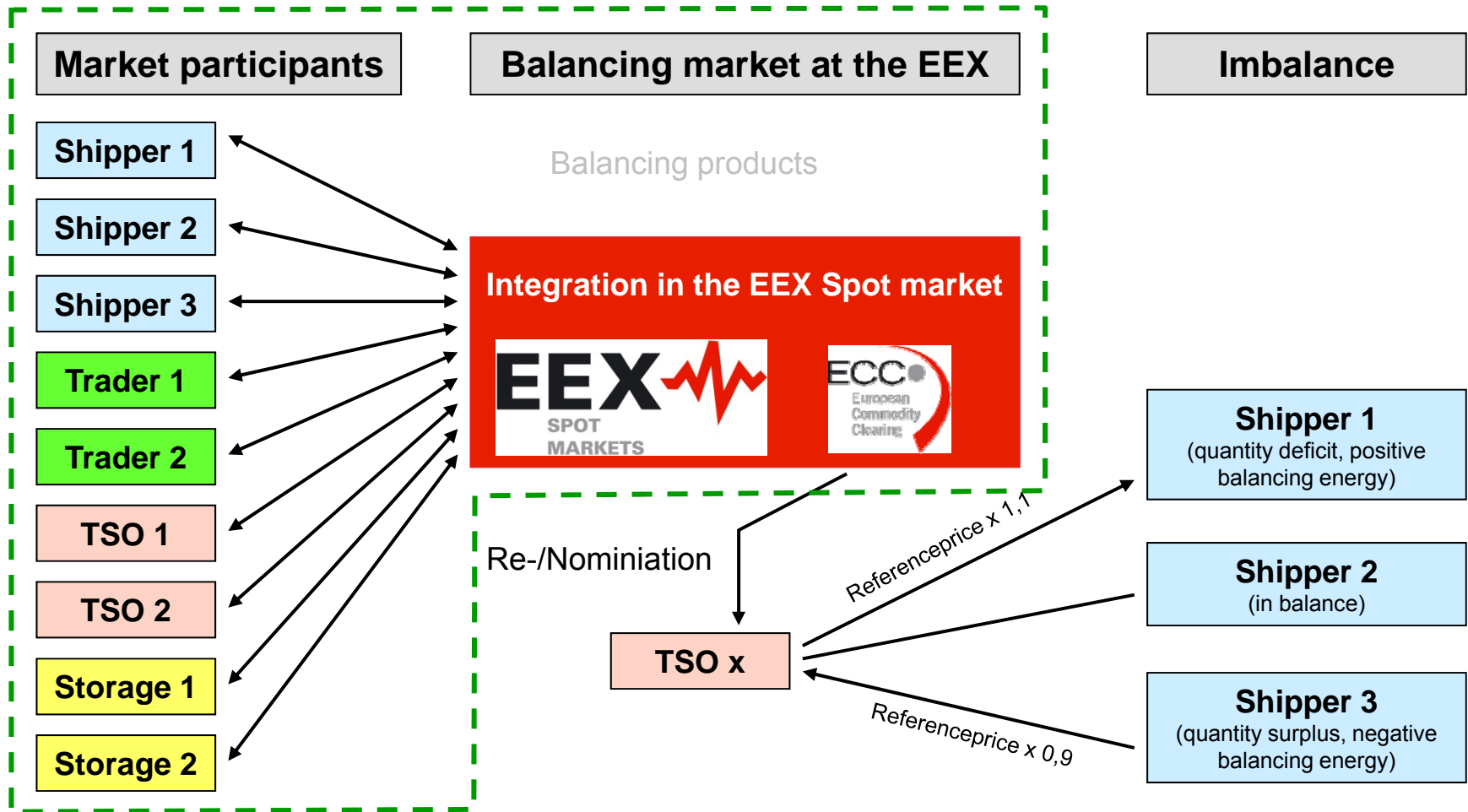
Exch: EEX Profile Instr InstrGrp AS WEDNESDAY

	Phase	Instr	Name	BidCnt	BidQty	Bid	Ask	AskQty	AskCnt	LstPrc	LstQty	LstTime	Volume	Trades
<input type="checkbox"/>	TRADE	H3B4	W1THUBEBBASE 20090514							11,10		00:00:00		
<input checked="" type="checkbox"/>	TRADE	H3BD	W1WEDBEBWITH 20090513	2	120	13,00	13,40	90	1	13,20	150	09:45:23	270	5
<input type="checkbox"/>	TRADE	H3B5	W1FRIBEBBASE 20090515							11,10		00:00:00		
<input type="checkbox"/>	TRADE	H3E4	W1THUEGTBASE 20090514	1	30	11,30	11,60	30	1	11,30		00:00:00		
<input type="checkbox"/>				1	30	11,25	11,65	30	1					
<input checked="" type="checkbox"/>	TRADE	H3ED	W1WEDEGTWITH 20090513	2	90	12,20	12,60	60	1	12,40	100	10:30:45	400	9
<input type="checkbox"/>	TRADE	H3E5	W1FRIEGTBASE 20090515							11,30		00:00:00		

EEX

Xetra

- Example for Xetra-instruments regarding Within-Day: H3ED for NCG und H3BD for Gaspool



The balancing prices for Imbalances are based on “Day-Ahead” reference prices:

Reference prices result from the second highest and -lowest market price of the markets NBP, Zeebrugge, TTF and VTP EGT

## Higher transparency in system balancing energy market

- Transparency of market price formation for balancing energy
- Supervised institutional trade of balancing energy
  - Market surveillance, Exchange supervisory, Exchange Council
  - Federal cartel office, Federal Net Agency, ...

## U-turn from bilateral OTC to the anonymous exchange trade

- Higher liquidity through **standardised** trades in only 2 products (DA, WD)
- Ability for wholesale business
- Higher number of participants for balancing energy market
  - Pooling of volumes
  - Participation of members with smaller volumes possible
- Existing balancing providers are almost EEX-member

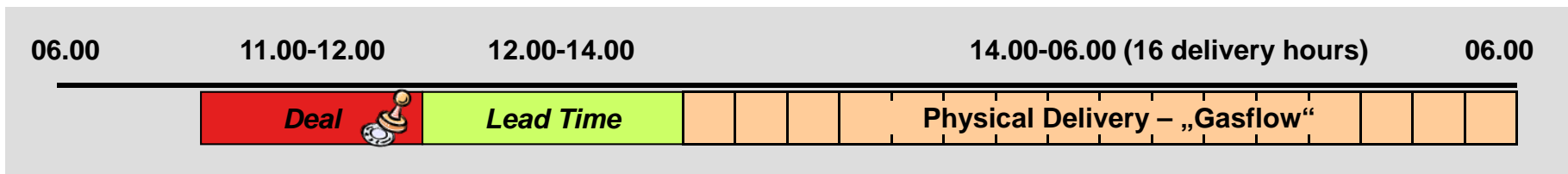
## EEX-Member

- Able to see and trade (balancing) gas quantities to market prices
- Trades at EEX are financially and physically safe

**Thank you for attention!**

## A, Rest-of-the-day trade

1. Buy 10 MW Within-Day between 11 and 12 a.m.
2. ECC nominates physical quantities for seller and buyer at TSO for the delivery from 2 p.m. to 6 a.m.
3. Buyer get the gas from the trade with an hourly quantity of 10 MW and a delivery volume of 160 MWh over 16 delivery hours.



## B, Trade of several hours

1. Buy 10 MW Within-Day between 11 und 12 a.m.
2. Sell 10 MW Within-Day between 1 p.m. and 2 p.m.
3. ECC nominates physical quantities for seller and buyer at TSO for the delivery from 2 p.m. to 6 a.m. and the delivery from 4 p.m. to 6 a.m.
4. Based on opposed delivery for 14 delivery hours, get the buyer only gas from 2 to 4 p.m. with an hourly quantity of 10 MW and a delivery volume of 20 MWh over 2 delivery hours.

