

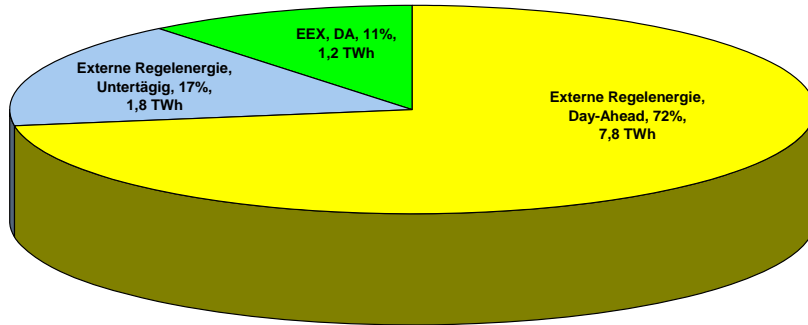
# Roadmap EEX: Balancing Energy Market at EEX

3rd EEX Trader Workshop Gas – System Balancing Energy Market Gas

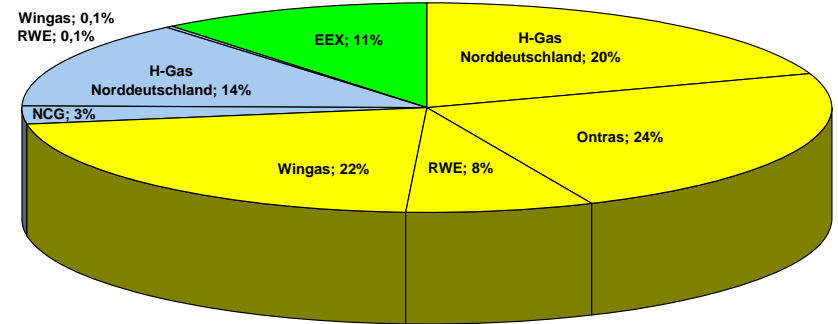
Sirko Beidatsch, EEX AG

# Volumes of the balancing energy market

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

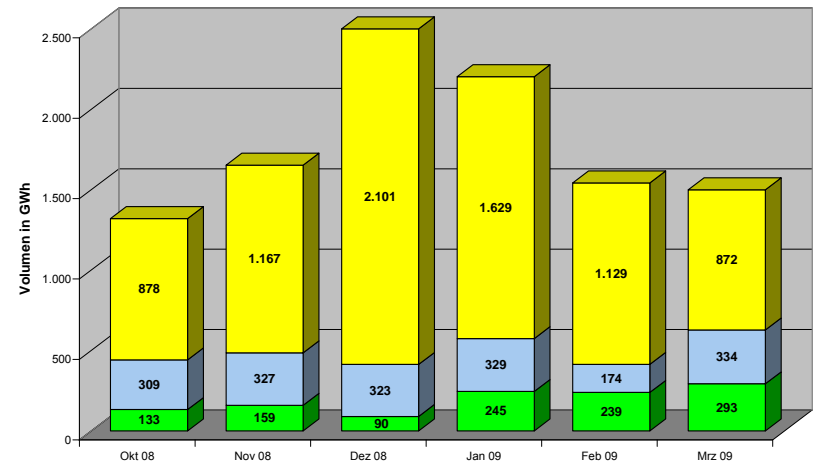


Traded volumes of TSO's in the balancing market vs. EEX in Q4/08 and Q1/09



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)

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

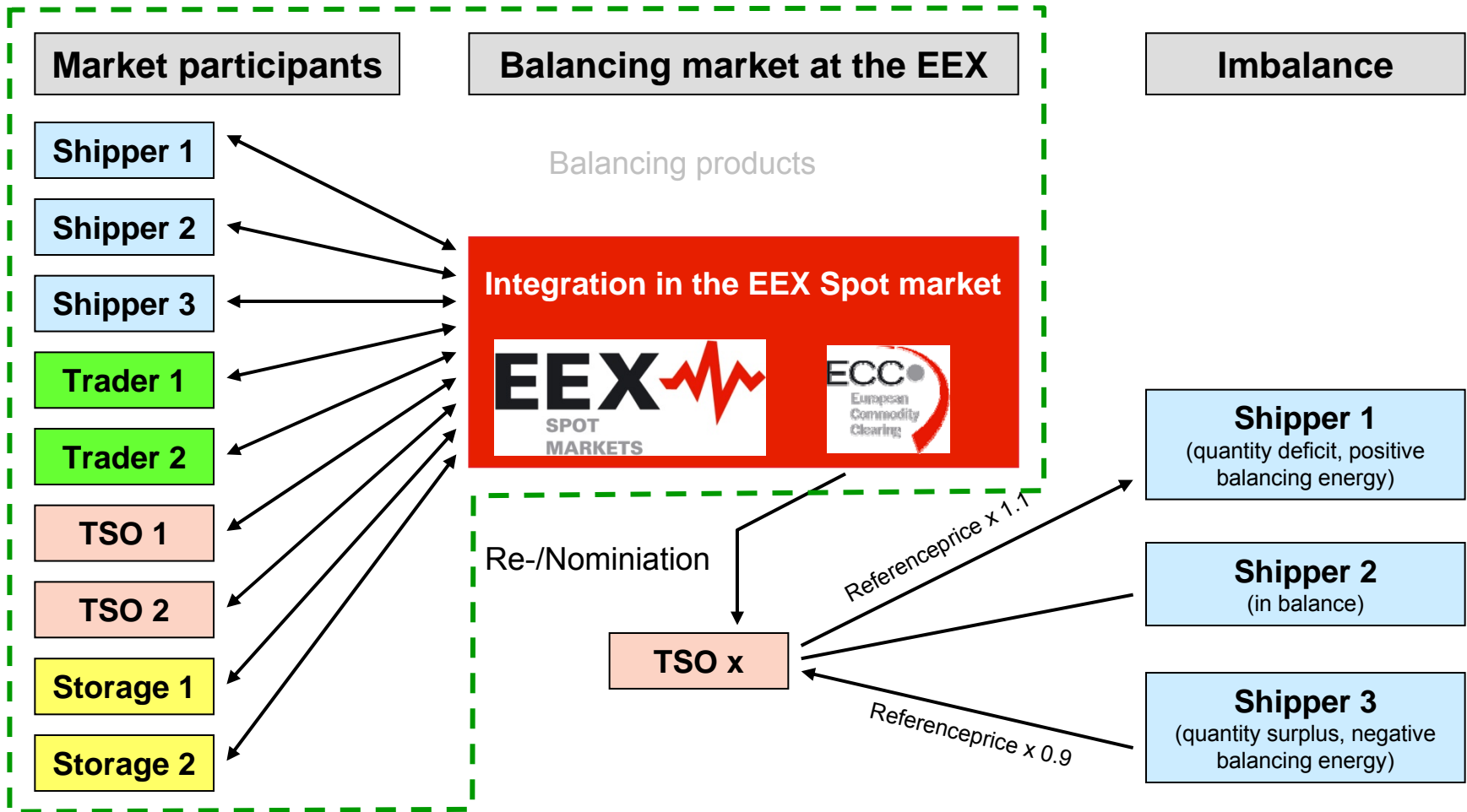
- Usage of external system balancing energy for TSO's in terms of GABi Gas
  - BNetzA favours Day-Ahead
  - TSO favours for practical reasons intraday-products

## 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



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

## 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

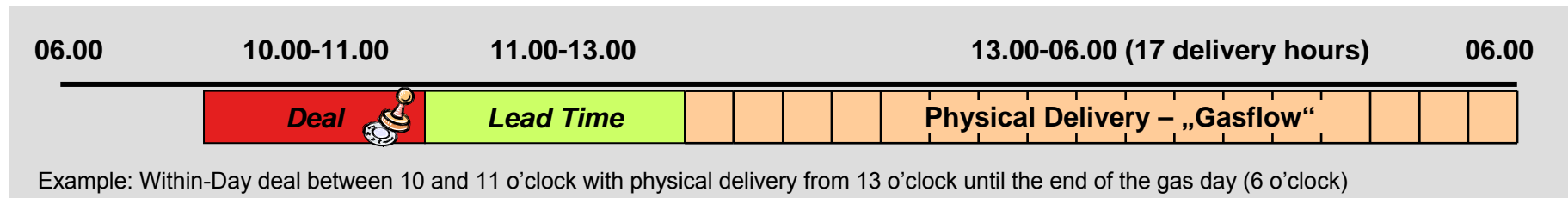
- Remaining delivery hours of the actual gas day, which are tradable at the EEX with 2 hours lead time for TSO's and traders

## 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

Window Trading Select Columns Help

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
TRADE	H3B4	W1THUBEBBASE 20090514							11,10		00:00:00		
TRADE	H3BD	W1WEDBEBWITH 20090513	2	120	13,00	13,40	90	1	13,20	150	09:45:23	270	5
TRADE	H3B5	W1FRIBEBBASE 20090515							11,10		00:00:00		
TRADE	H3E4	W1THUEGTBASE 20090514	1	30	11,30	11,60	30	1	11,30		00:00:00		
TRADE	H3E4	W1THUEGTBASE 20090514	1	30	11,25	11,65	30	1					
TRADE	H3ED	W1WEDEGTWITH 20090513	2	90	12,20	12,60	60	1	12,40	100	10:30:45	400	9
TRADE	H3E5	W1FRIEGTBASE 20090515							11,30		00:00:00		

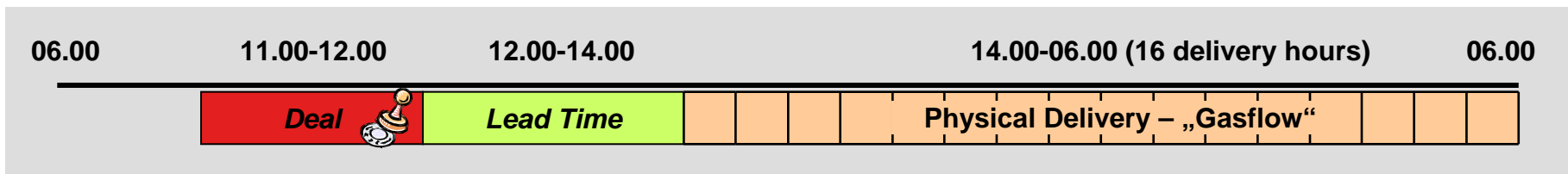
EEX

Xetra

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

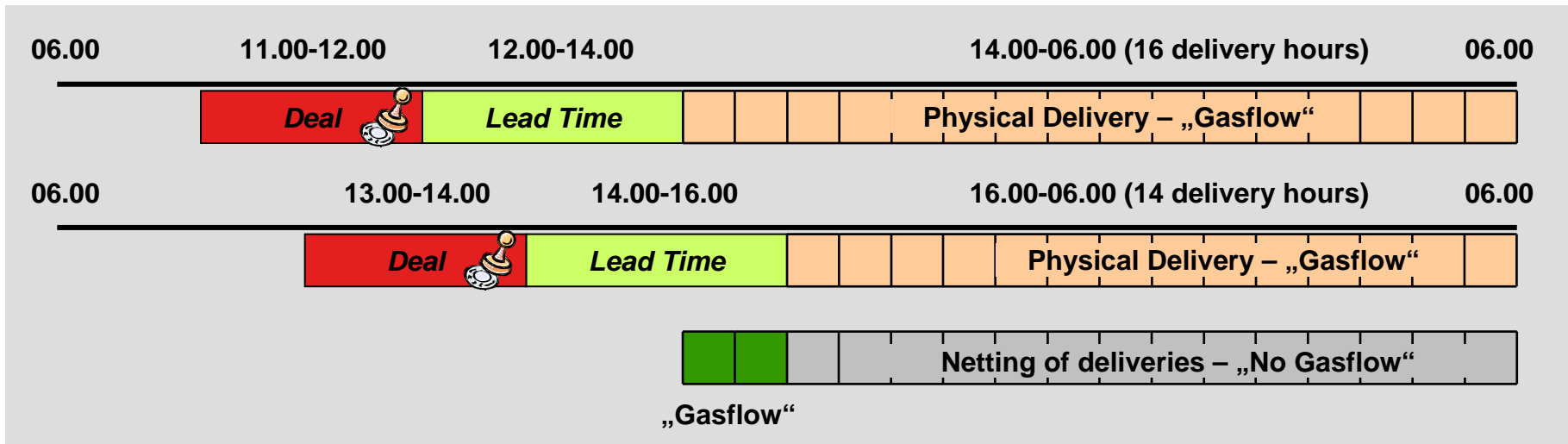
## A, Rest-of-the-day trade

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, the buyer only get 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.



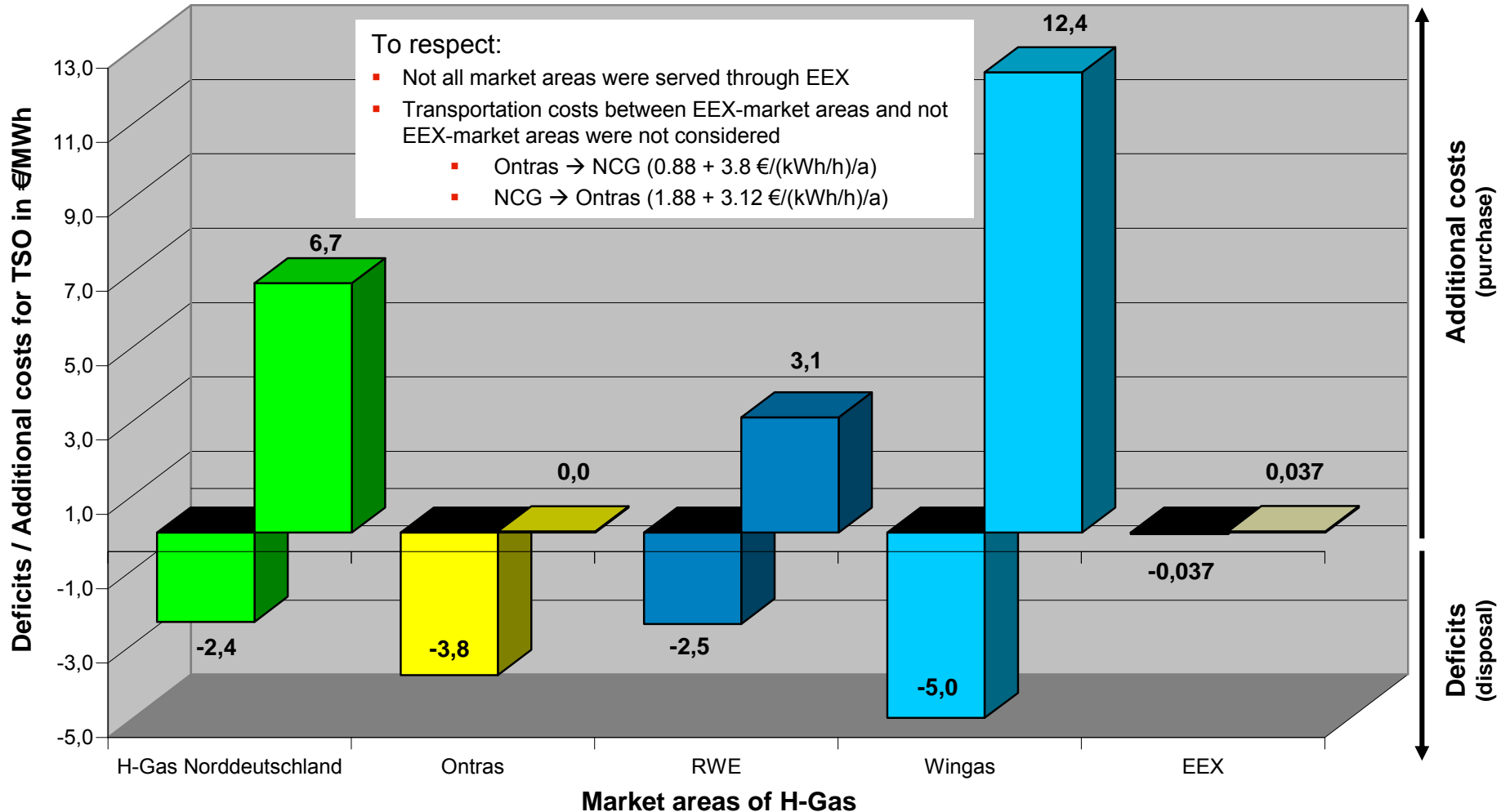
## Practical example: Fees for EEX/ECC

TSO trades 6 TWh in Day-Ahead products in GY 08/09

Item	Description	Absolute in €	Specific in €
		yearly	in €/MWh
<b>Fixed costs</b>			
Hubaccount	VHP-Trading at NCG	12,000	0.0020
Annual fee	For spot market gas at EEX	12,500	0.0021
Trading System	<u>Webaccess</u> for spot market EEX	7,800	0.0013
Staff	1 employee active, 1 for backup	100,000	0.0167
<b>Variable costs</b>			
EEX	Transaction fee spot market gas	30,000	0.005
ECC	Transaction fee spot market gas	60,000	0.01
	Sum	222,300	0.0371

# Bilateral balancing energy market vs. EEX

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



## 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

Σ 57



## 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  
 EWE AG  
 Gaselys S.A.  
 Getec Energie AG  
 ICAP Energy A/S  
 KOM Solution GmbH  
 KOM-Strom AG  
 Mercuria Energy Trading S.A.  
 Morgan Stanley & Co. International Limited  
 Nuon Energy & Wholesale N.V.  
 Österreichische Elektrizitätswirtschafts-AG  
 RWE Supply & Trading GmbH  
 Shell Energy Trading Limited  
 Spectron Energy Services Limited  
 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.  
 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

Σ 44

## 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

# Roadmap: Balancing Energy Market EEX and introduction Within-Day

2009	EEX/ECC	TSO	Trader	BNetzA/BMWi
<b>June</b>	<ul style="list-style-type: none"> <li>• 3rd traders workshop gas at EEX</li> <li>• Approval in board meeting</li> <li>• Perception in exchange council</li> <li>• Start implementation in Xetra</li> <li>• Start implementation in ECC</li> </ul>	<ul style="list-style-type: none"> <li>• 3rd traders workshop gas</li> <li>• Approval in management</li> <li>• Admission as exchange member</li> </ul>	<ul style="list-style-type: none"> <li>• 3rd traders workshop gas</li> <li>• Approval in management</li> </ul>	<ul style="list-style-type: none"> <li>• 3rd traders workshop gas</li> <li>• Examination of the EEX-vision regarding system balancing energy trading</li> </ul>
<b>July</b>	<ul style="list-style-type: none"> <li>• Request for further Market-Maker and Liquidity-Provider</li> <li>• Consultation with TSO</li> <li>• Consultation with BNetzA and BMWi</li> </ul>	<ul style="list-style-type: none"> <li>• Setup of the operative processes</li> <li>• Exchange trader training</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust of operative processes</li> </ul>	<ul style="list-style-type: none"> <li>• Arrangement with associations and companies for trading system balancing energy through an Exchange</li> </ul>
<b>August</b>		<ul style="list-style-type: none"> <li>• Setup of trading system</li> </ul>		<ul style="list-style-type: none"> <li>• Fixing an exchange as marketplace for system balancing energy in updated GasNZV</li> </ul>
<b>September</b>	<ul style="list-style-type: none"> <li>• Simulation in Xetra</li> </ul>	<ul style="list-style-type: none"> <li>• Simulation in Xetra</li> </ul>	<ul style="list-style-type: none"> <li>• Simulation in Xetra</li> </ul>	
<b>October</b>	<ul style="list-style-type: none"> <li>• Operative Start – production in Xetra</li> </ul>	<ul style="list-style-type: none"> <li>• Trading of system balancing energy</li> </ul>	<ul style="list-style-type: none"> <li>• Trading of system balancing energy</li> </ul>	<ul style="list-style-type: none"> <li>• Surveillance of system balancing energy trade</li> </ul>

## Operative (special Within-Day)

- Contract size: 10 MW or 1 MW
- Trading time: 9:30 a.m. - 17:30 p.m. or 24/7
- Lead time TSO: 2 hours, more or less
- Starting time: 01. October 2009
- Balancing energy trade at RWE Transportnetz Gas, GVS/ENI, GRTgaz Deutschland:
  - Reservation of cross border capacities through TSO's
  - Dealing with transportation cost's between market areas

## Economical

- Transaction fees and fixed costs: Approval as cost for shippers

## Legal

- EEX as explicit market place for balancing energy market or only part of the merit-order
- Support for implementation in the updated NZV

**Thank you for attention!**

EEX AG; Sirko Beidatsch; Sirko.Beidatsch@eex.com; +49 (0) 341 2156-223

# Potential of a german balancing market – View to UK

