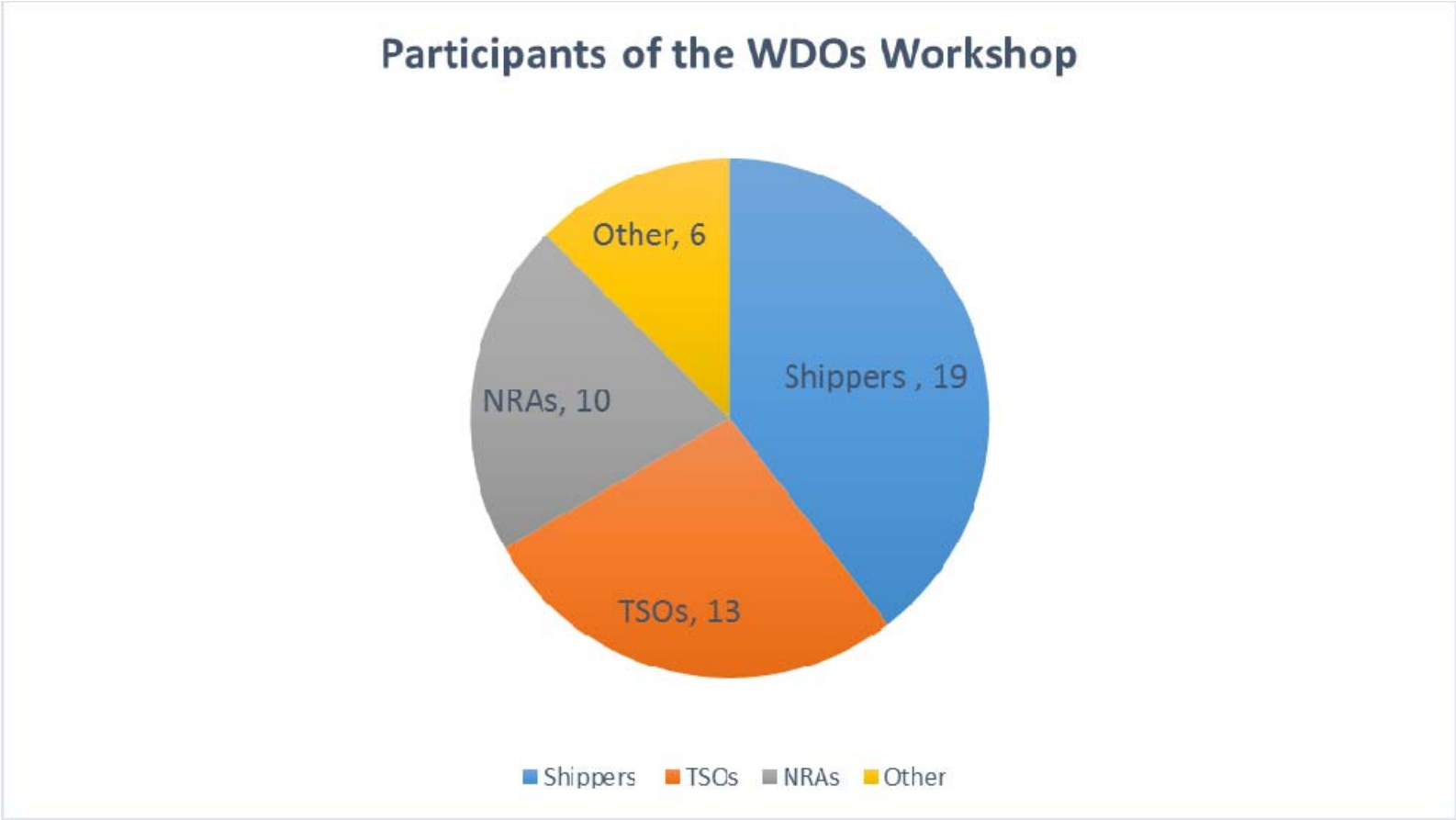
ACER
Agency for the Cooperation of Energy Regulators

WDO WORKSHOP

ACER Workshop on Within Day Obligations
15 May, 2017



In total – 48 registered participants

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WDO WORKSHOP

Opening remarks

Reflections on ACER's First Monitoring Report and the Balancing Network Code

Gas Department

ACER Workshop on Within Day Obligations
15 May, 2017

First Monitoring Report: Country by country assessments

- How did we achieve the goals set by the regulation?

85-100%	UK_GB	FR	DK	BELUX
70-85%	DE	NL	SI	HU
50-70%	AT			
under 50%				

Only 2015 Implementers had WDOs.
Although WDOs were not scored, other features of the regime lowered the scoring. Why, so?

- Information provision: lacking reporting on linepack values;
- Neutrality: certain provisions not considered fully during implementation;
- Daily cash-out regimes were opaque.

What are the Code requirements on WDOs? – Article 26(2)

Benefits outweigh the negative impacts, including on liquidity of trades at VTP

benefits…
in terms of economic & efficient operation of the transmission network

WDOs shall not pose undue cross-border trade barriers;

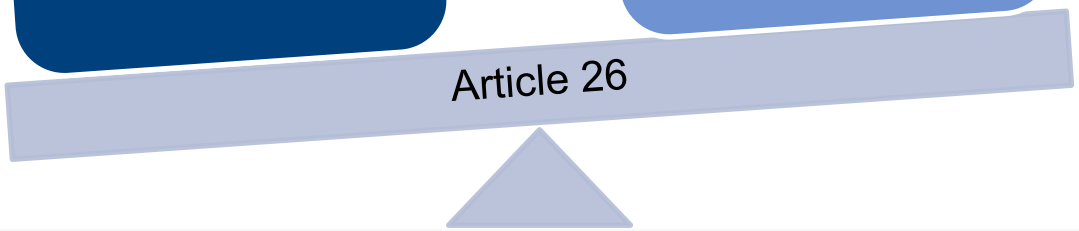
WDOs will not result in network users being settled to zero during the gas day

Within-day charges reflect the costs of the TSO taking balancing actions

Users

are aware about their inputs and offtakes and

have reasonable means to manage their exposures;



Trade-offs to be consulted upon Article 26(5)

TSOs consultation is foreseen by the Code to assess the trade-offs:

What are the trade offs in parctice?

- What are the trade-offs and can we have a discussion to understand them better?
- What constraints WDOs impose? What are the benefits?
- How these costs and benefits could be assessed from:
  - System perspective?
  - User perspective?
  - The development of the short-term market?

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Let the workshop begin

www.acer.europa.eu

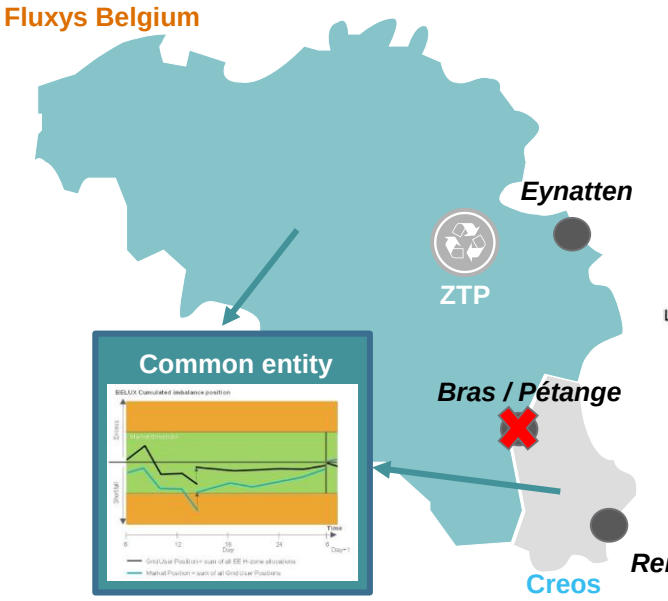
ACER Workshop on WDOs

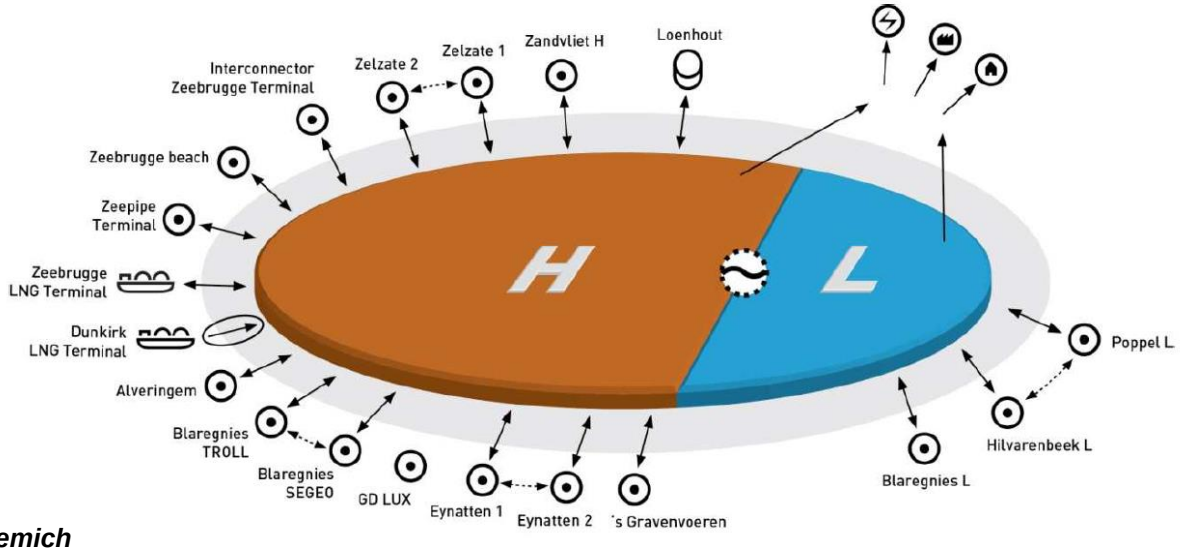
Reasons for having WDOs
Fluxys Belgium

15th May 2017

FLUXYS

BeLux Entry/Exit system

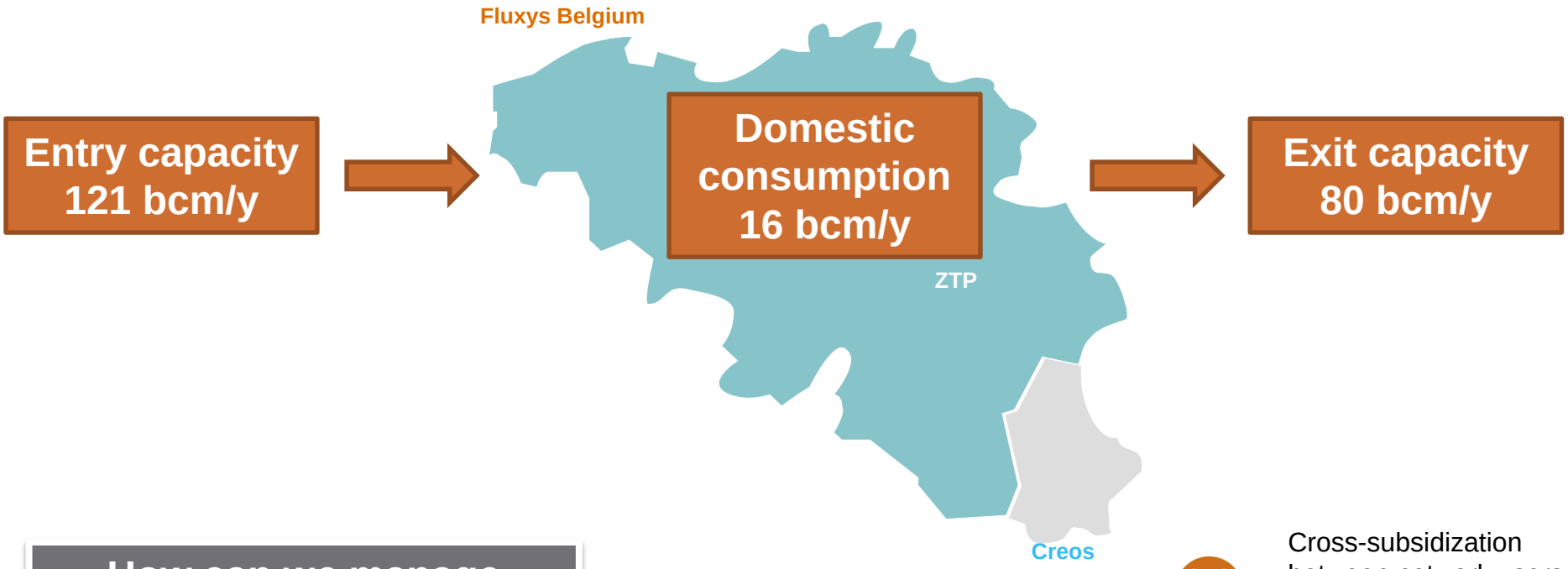




- Single E/E market capitalizing on TSO existing means with 19 Interconnection Points
- Single gas trading place in BeLux, i.e. ZTP
- 2 zones, one with High calorific gas and one with Low calorific gas
- Harmonized balancing rules set : System-wide Within-Day Obligations with hourly information

FLUXYS

WHY DO WE NEED WDO IN BELUX?



How can we manage potentially high within-day imbalances that could result from border-to-border transit and/or switching of Power Plants?

- **Reserve buffer & operational volumes to balance network** — Cross-subsidization between network users through socialization of high costs
- **Limit available flexibility** — Using System Wide Within-Day Obligations

FLUXYS

ADVANTAGES OF ENTRY-EXIT MODEL WITH SYSTEM-WIDE WITHIN DAY OBLIGATIONS

Advantages for Grid User

• Through **hourly data publication** and short term renomination possibilities grid users are enabled to manage in a timely manner their WD/EoD positions in order to **manage their financial exposure**

• **No cross-subsidization** between different end-user profiles as all imbalances caused by certain types of End-users can be allocated to the causer

• Creates a **level playing field for new grid users** entering the market because new grid users with limited flexibility can enter the Belgian market and use the entire flexibility offered by Fluxys Belgium

Advantages for Operator

• **No reservation of significant physical buffer** for balancing model without WDO

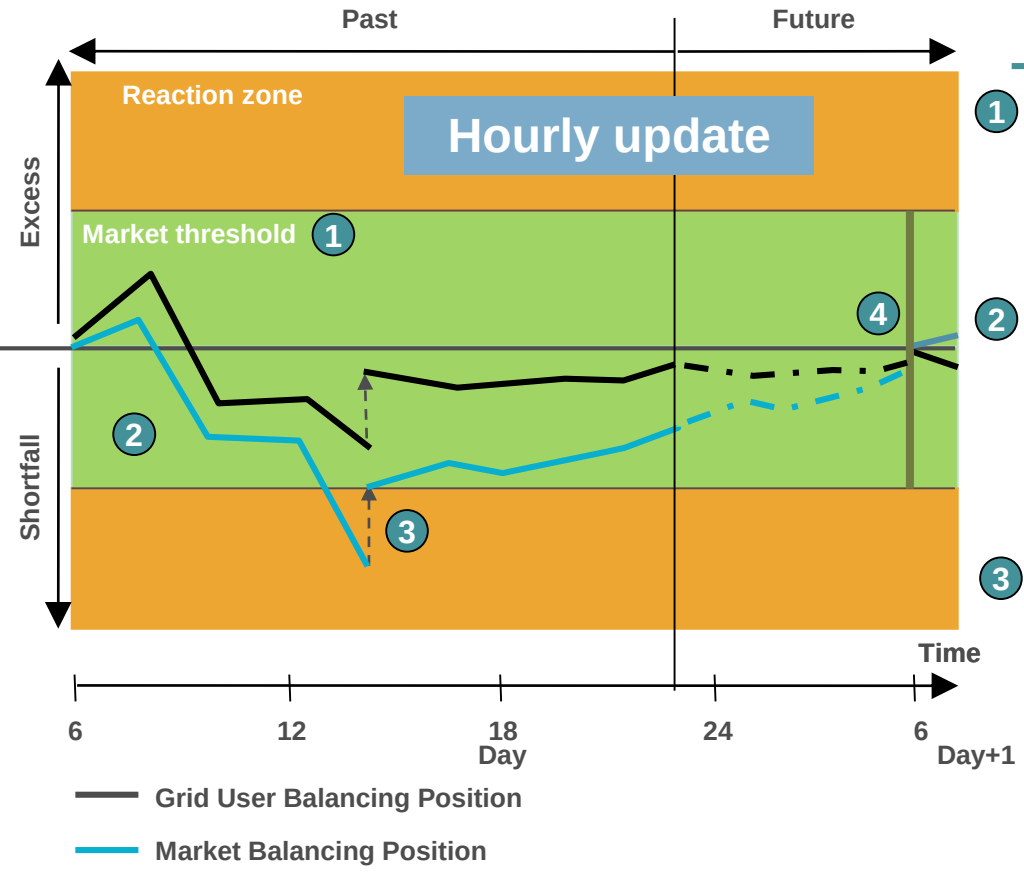
  • The cost of this physical buffer doesn't have to be recovered on the grid users→ Low tariffs

• Encourages utilisation of cross-border trades and promotes the development of a **liquid trading market**

• **Directly relates the cost or revenue** of a residual balancing action to the actual commodity market prices at the moment of such action and can target those costs or revenues **to responsible parties**

FLUXYS

BALANCING THE NETWORK MADE EASIER, BASED ON MARKET BEHAVIOUR



BeLux Daily Market-Based Balancing

1. **Thresholds to limit the aggregated market imbalances, sized to domestic market needs**
2. **No action intra-day and no impact on market parties as long as market imbalance is within market threshold**
3. **Residual action initiated on the exchange when market position goes beyond market threshold, with cash compensation for causers**
4. **Residual end-of day imbalance settled in cash**

Comprehensive hourly information provision to the market
In line with EU Balancing Network Code

FLUXYS

BALANCING INFORMATION

In order to enable shippers adjusting their WD positions in a timely manner, grid users:

- Receive an hourly Balancing Message : contains their individual position and the market position (+forecast until the end of the gas day)
- Receive an hourly Allocation Message : contains for each IP, Domestic exit point the hourly allocation
- May revise their nominations by sending renominations at least H - 30 minutes (ZTP) or 2 hours before the change will take effect

Advantages of hourly info for Grid User

- No exposure to unexpected financial settlement as all tools at its disposal to adapt its individual balancing position → transparent and traceable
- Detailed allocation info available to steer its balancing position
- No cross-subsidization between different end-user profiles as all imbalances caused by certain types of End-users can be allocated to the causer
- New entrants can benefit of full flexibility (not limited to individual tolerances)

Advantages of hourly information for Operator

- Grid Users are primarily responsible to balance their portfolio
- Residual balancing = role as Balancing Operator
- Directly relates the cost of a Within-Day residual balancing action to the commodity market price at the moment of such action and can allocate the cost to the responsible parties
- Encourages utilization of cross-border trades and promotes the development of a liquid market

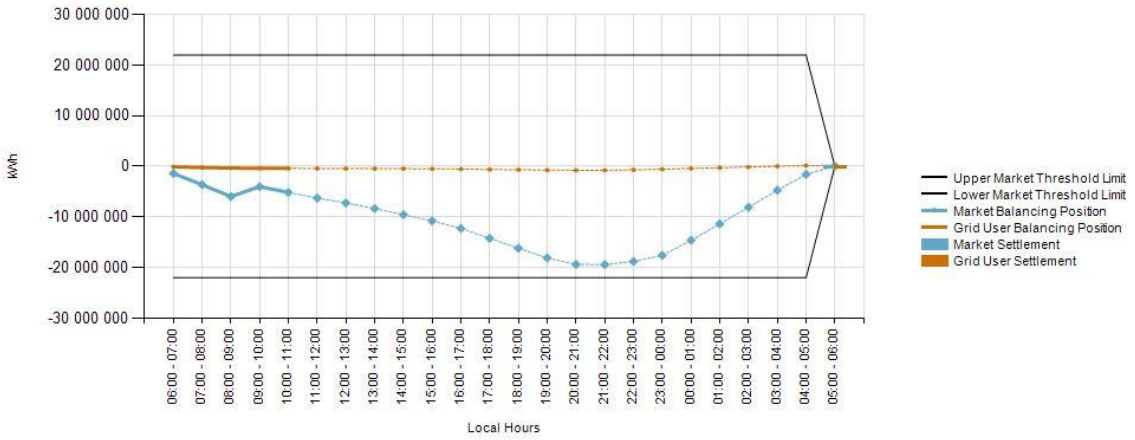
DETAILED GRID USER INFORMATION

GRID USER BALANCING POSITION

Display H-Zone | Display L-Zone | Download

Previous Day 08/11/2016 Next Day Last Available Report 08/11/2016 11:52

Show Only Grid User | Show All | Generated at 08/11/2016 11:33:00



Local Hours	Upper Market Threshold Limit (kWh)	Lower Market Threshold Limit (kWh)	Market Balancing Position (kWh)	Market Settlement (kWh)	Grid User Balancing Position (kWh)	Grid User Settlement (kWh)	Status
06:00 - 07:00	22 000 000	-22 000 000	-1 390 940	0	-89 961	0	Provisional
07:00 - 08:00	22 000 000	-22 000 000	-3 631 555	0	-227 502	0	Provisional
08:00 - 09:00	22 000 000	-22 000 000	-5 968 135	0	-329 337	0	Provisional
09:00 - 10:00	22 000 000	-22 000 000	-4 012 290	0	-377 612	0	Provisional
10:00 - 11:00	22 000 000	-22 000 000	-5 145 453	0	-399 206	0	Provisional
11:00 - 12:00	22 000 000	-22 000 000	-6 264 802	0	-418 585	0	Forecasted

FLUXYS

FLUXYS

THANK YOU FOR YOUR ATTENTION!

FLUXYS


FLUXYS

gasunie
transport services

ACER workshop on Gas Network Code Balancing Within Day Obligations (WDOs)

15 May 2017

TSO's role in Dutch market based balancing

Within Day

- Provide near real time information on operational limits, system balance position, and each network user's balance position
- Only when triggered by system balance, take balancing action to maintain the transmission network within its operational limits: buy or sell short term standardized title products on an exchange

End of day

- Offer linepack flexibility service (LFS), fee based on gas price
- Calculate daily imbalance quantity, which is zero after LFS (art 21.2.a)
- Apply neutrality mechanism
  - Balancing actions costs are neutralized by charging them to causers
  - Daily imbalance quantity and daily imbalance charge are always zero
  - Linepack flexibility service fee is neutralized through allowed revenues

System-wide WDO

- Dutch balancing regime applies a system-wide WDO to provide incentives for NUs to keep the transmission network within its operational limits (art 25.1)
- WDO = causer pays
  - No WDO would imply socializing costs of balancing actions

WDO evaluation

- Criterion Art 26.2 (f): The benefits of introducing a WDO in terms of economic and efficient operation of the network outweigh any potential negative impacts thereof including on liquidity of trades at the VTP
- Evaluation: The new balancing regime supports the development of a competitive liquid within day market for wholesale gas in Europe in several ways:
  1. The TSO will have to buy or sell gas for balancing actions on the exchange
  2. Network users can use that exchange to reduce their imbalance position; they are incentivized to do so because an imbalance during the day can have financial consequences in case the TSO needs to restore system balance, and by end of day they pay a fee pro rata to their imbalance position
  3. The TSO will use short term standardized title products to keep the transmission network within its operational limits during the day.

[Ref. ACM/DE/2014/202187 case 13.0482.52 Implementation NC BAL, number 34]

Strengths and weaknesses of Dutch WDO regime

Strengths

- TTF market area is well functioning and very liquid
- Balancing actions are triggered by market signals
- During the day, network users can monitor near real time info on system balance and portfolio balance, and thus are incentivized to engage in trading on the Within Day Market accordingly
- Causer pays is cost reflective and avoids cross subsidies
- Balancing costs for end users are low
  - For 2015/2016 an estimate of costs of balancing for network users was EUR 2 mln, with market volume 983 mln MWh (0.002 EUR/MWh)
- Low costs imply a low barrier for market entrants

Weaknesses

- During the day, network users have to monitor near real time info on system balance and portfolio balance, and, to avoid being charged for a balancing action, have to engage in trading on the Within Day Market

Conclusion

- Dutch balancing regime is based on extensive stakeholder involvement pre NC BAL and with implementation of NC BAL
- System wide WDO = causer pays, no cross subsidisation
- Information provision shows near real time system and portfolio balance
- Very liquid market and low balancing costs

We are, as before, open to feedback from our stakeholders

THANK YOU FOR YOUR ATTENTION

Gas Connect Austria | Brussels | 2017

ACER Workshop on WDOs

GAS CONNECT AUSTRIA

Agenda

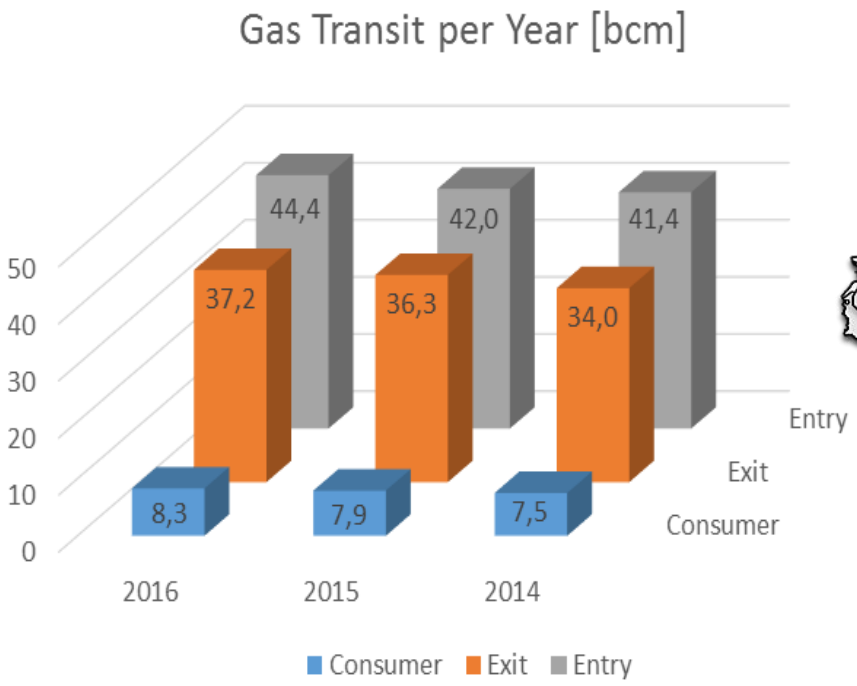
– Austria “A Transit Country”

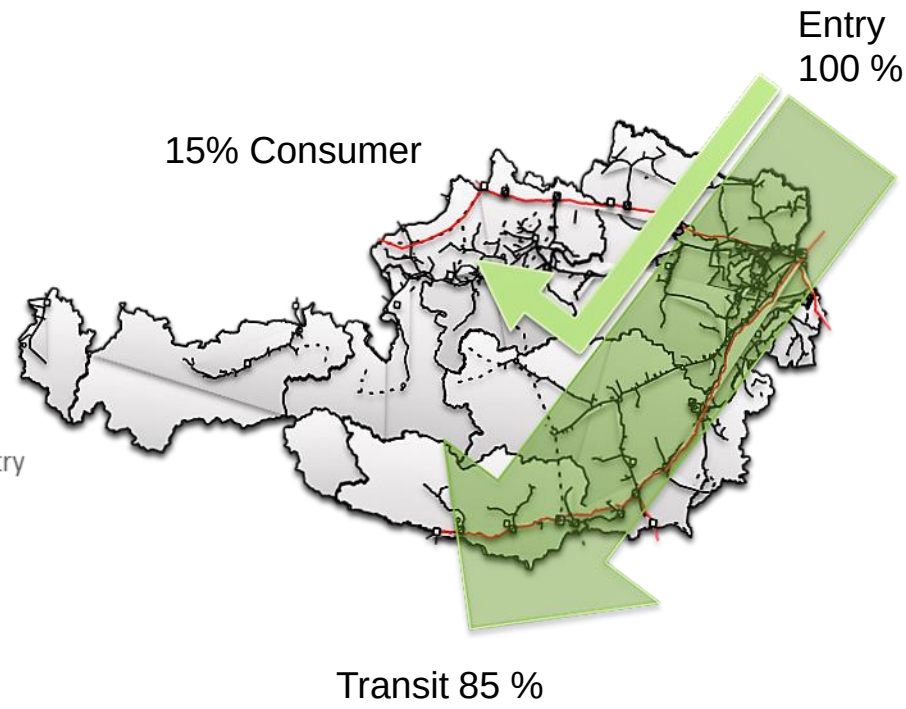
– Balancing Austrian Market Area East

– Balancing Incentive Mark-Up

– Conclusion

Austria “A Transit Country”

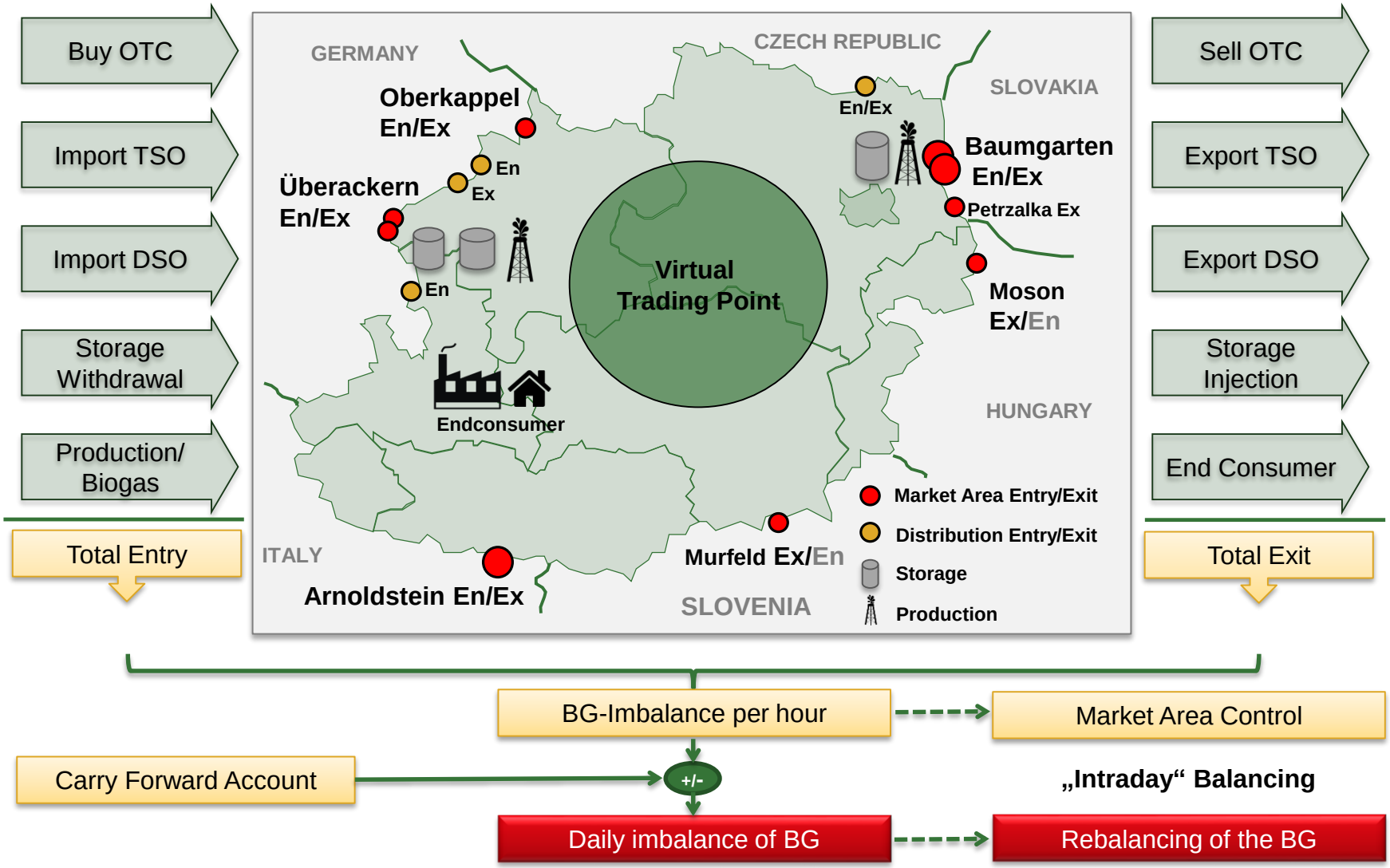




Offered entry/exit capacities are 100% connected to the VTP.
TSOs are obliged to offer their linepack for balancing purposes.
To keep the network stable for an 85% transit system, some measures are necessary.

mgm GAS CONNECT AUSTRIA

Balancing Austrian Market Area East



Balancing Austrian Market Area East

Intraday Balancing

- MAM provides each BG its daily imbalance (allocated nominations)
- Cash out of daily imbalances by re-balancing BGs at the gas exchange
- DAM provides update for SLP consumption forecast
- Publication of hourly market area net position and usable line pack

D+1 Balancing

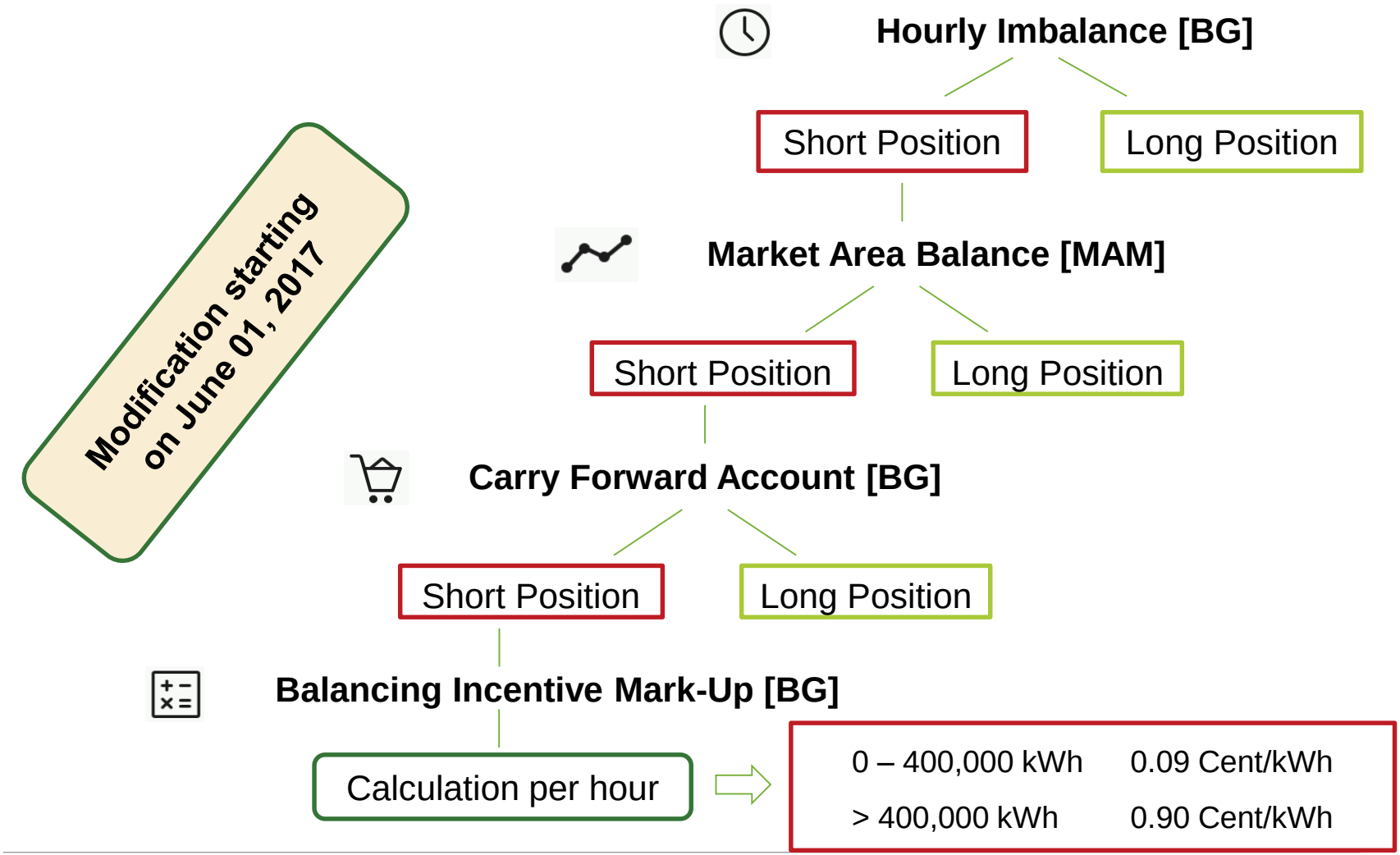
- Final allocated quantities were provided
- Comparison of metered volumes to the nominations for end consumers
- Allocation of balancing energy to causer by BGC
- Calculation and publication of WDO on hourly basis for each BG by MAM

Operational Balancing

- Coordinated use of linepack within the Market Area
- Procurement of physical balancing energy at the gas exchange
- Last resort: curtailment of critical balance group imbalances by MAM
- UMM in case of market area curtailment

MAM = Market Area Manager, DAM = Distribution Area Manager, BG = Balance Group, UMM = Urgent Market Message
SLP = standard load profile, WDO = within-day obligation, BGC = Balance Group Coordinator

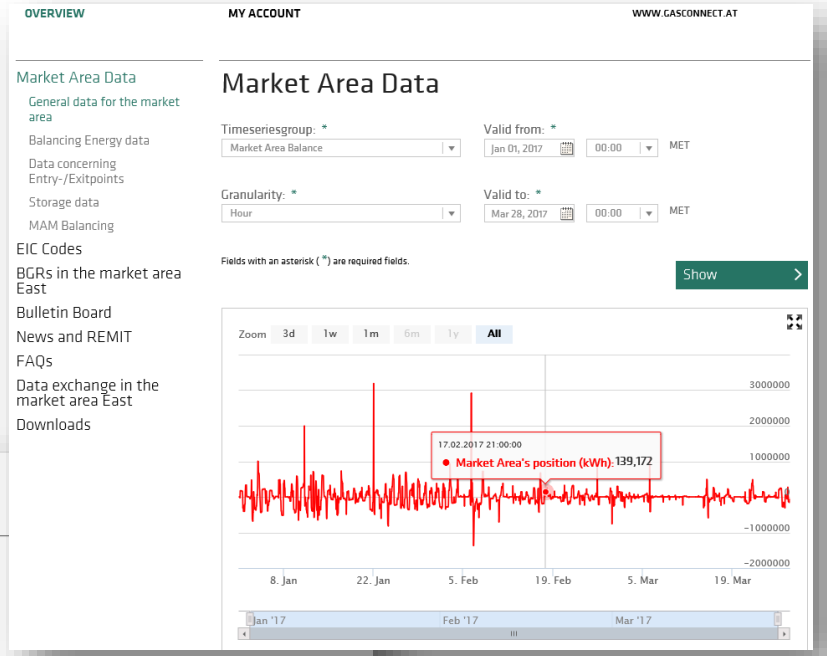
Balancing Incentive Mark-Up



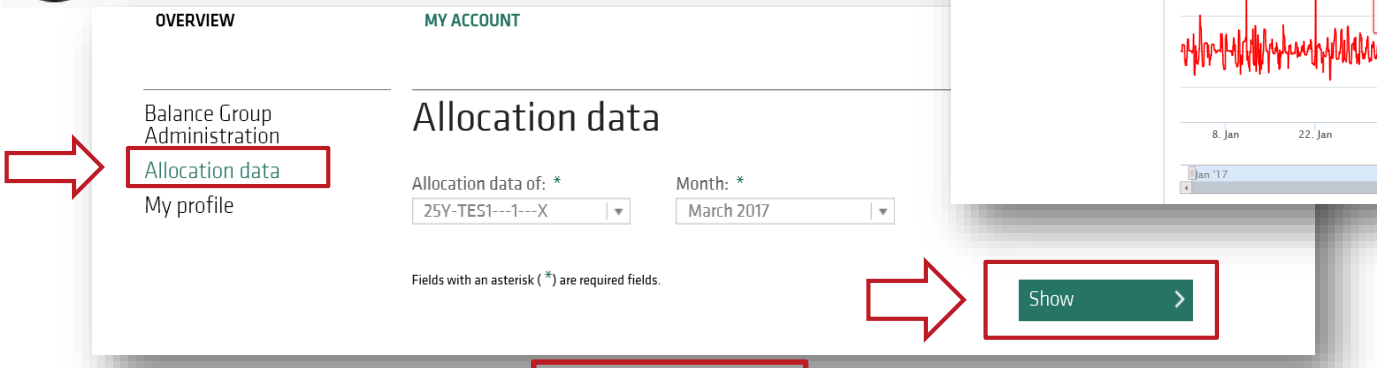
Balancing Incentive Mark-Up

Near real time published Information

Market Area Balance [public area]



Hourly Imbalance [BG private area]



Exit (KWH)	VHP Exit (KWH)	Imbalance (KWH)	Structuring Imbalance (KWH)	Bilanzausgleich Entry (KWH)	Bilanzausgleich Exit (KWH)	Carry Forward Stand (KWH)	Strukturierungsbeitrag (EUR)
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

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Balancing Incentive Mark-Up

Evolution of the structuring fee

E-CONTROL

from date	volumes kWh	fees Cent/kWh
01.01.2013	> 0	0.4
01.06.2013	1 - 400,000	0.1
	400,001 - 700,000	0.2
	> 700,000	0.4
01.07.2014	1 - 700,000	0.1
	> 700,000	0.4
01.11.2015*	1 - 300,000	0.1
	> 300,000	1.0
01.06.2017	1 - 400,000	0.09
	> 400,000	0.9

* methodology changed from cumulated volumes to hourly volumes if BG and MA are short

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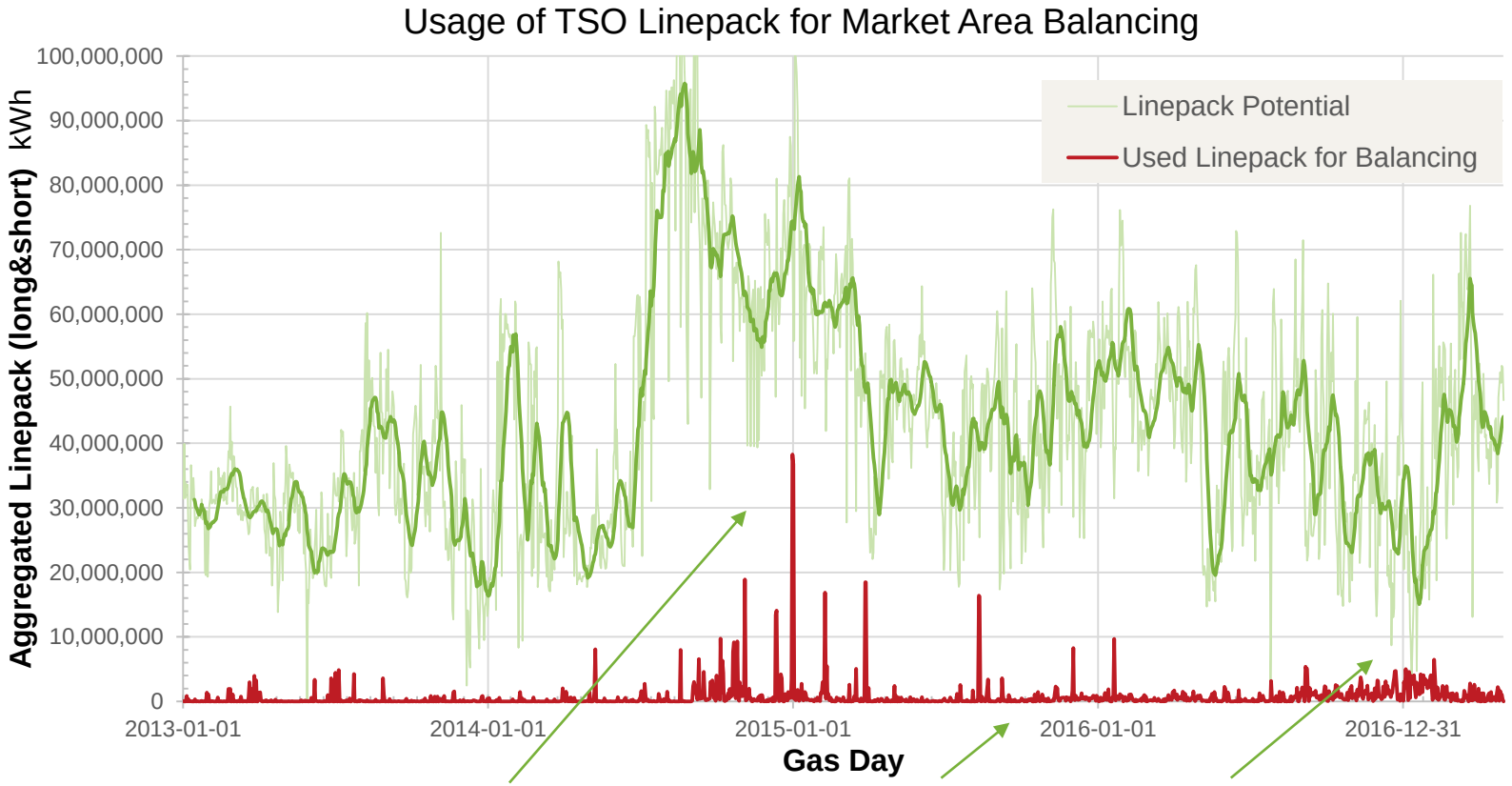
Conclusion



Balancing measures, curtailment instrument and within-day obligations are necessary tools to keep a transit system running in a stable operation mode.

Within Day Obligations in the German Gas Market

ACER Workshop on WDO

Brussels, 15 May 2017

NCG NetConnect Germany

simply gas

GASPOOL Balancing Services

Agenda

1. **Reasons for the application of Within Day Obligations in Germany**

2. German Within Day Obligations in detail

The German market areas

- The German gas market consists of two market areas, both with entry volumes of more than 900 TWh/a and each containing several TSOs and several hundred DSOs
- Both market areas have transmission systems for high-cal and low-cal gas – with the low-cal system featuring comparably low linepack levels
- High transit volumes – especially from east to west and from north to south
- Nearly all end consumers are allocated with flat daily bands, making it easier for shippers to balance their portfolios with standardized trading products

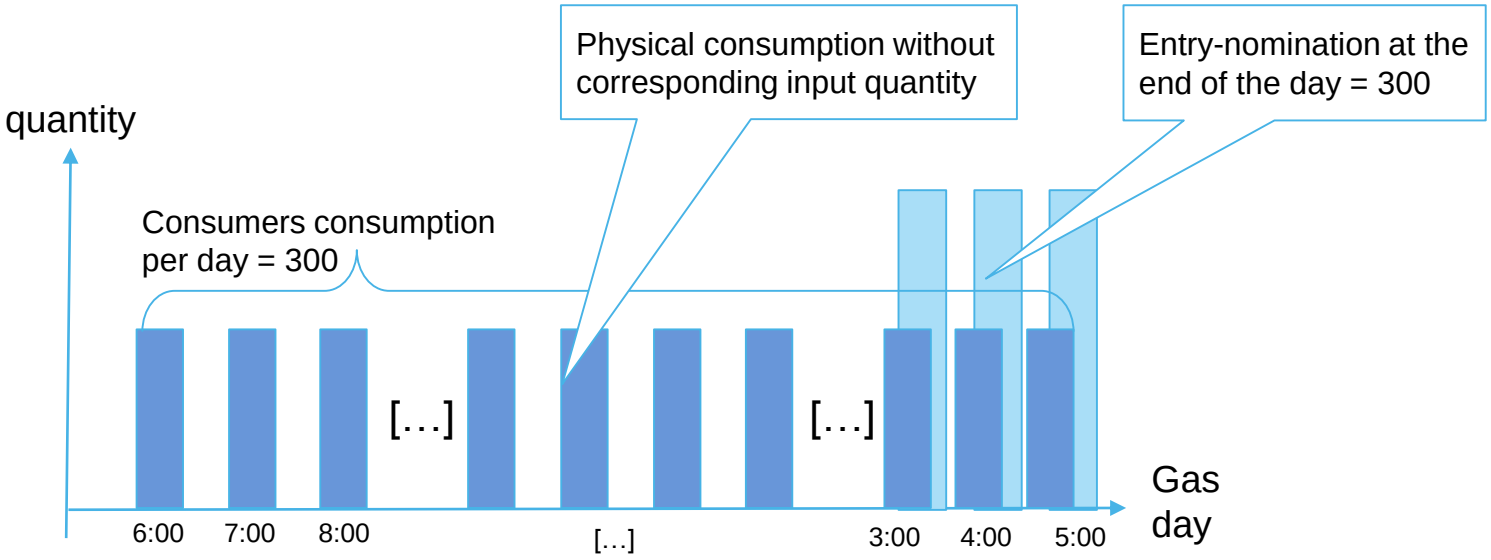
Balancing model vs. physical operation of the transmission system

- According to BAL NC, network users are required to balance portfolio inputs and offtakes for a gasday – hourly portfolio imbalances do not lead to a financial settlement of gas quantities

- Transmission systems are however limited in their technical flexibility – the period between inputs and offtakes may exceed the operational limits, possibly leading to the procurement of balancing gas to bridge the gap

WDOs are an instrument to incentivise balanced portfolios within-day:
- Avoiding correcting intervention by TSO/MAM
- Avoiding costs of balancing gas
- Reducing transportation costs for all network users

Example of a harmful shipper behavior from the perspective of the grid operator



- The transmission system is not balanced within the day, which would require balancing actions if operational limits are exceeded

- The design of the German WDOs is that they only come into effect if shippers show such a behavior and costs occur due to counter balancing actions by the MAM (see example on slides 8 and 9)

Agenda

1. Reasons for the application of Within Day Obligations in Germany

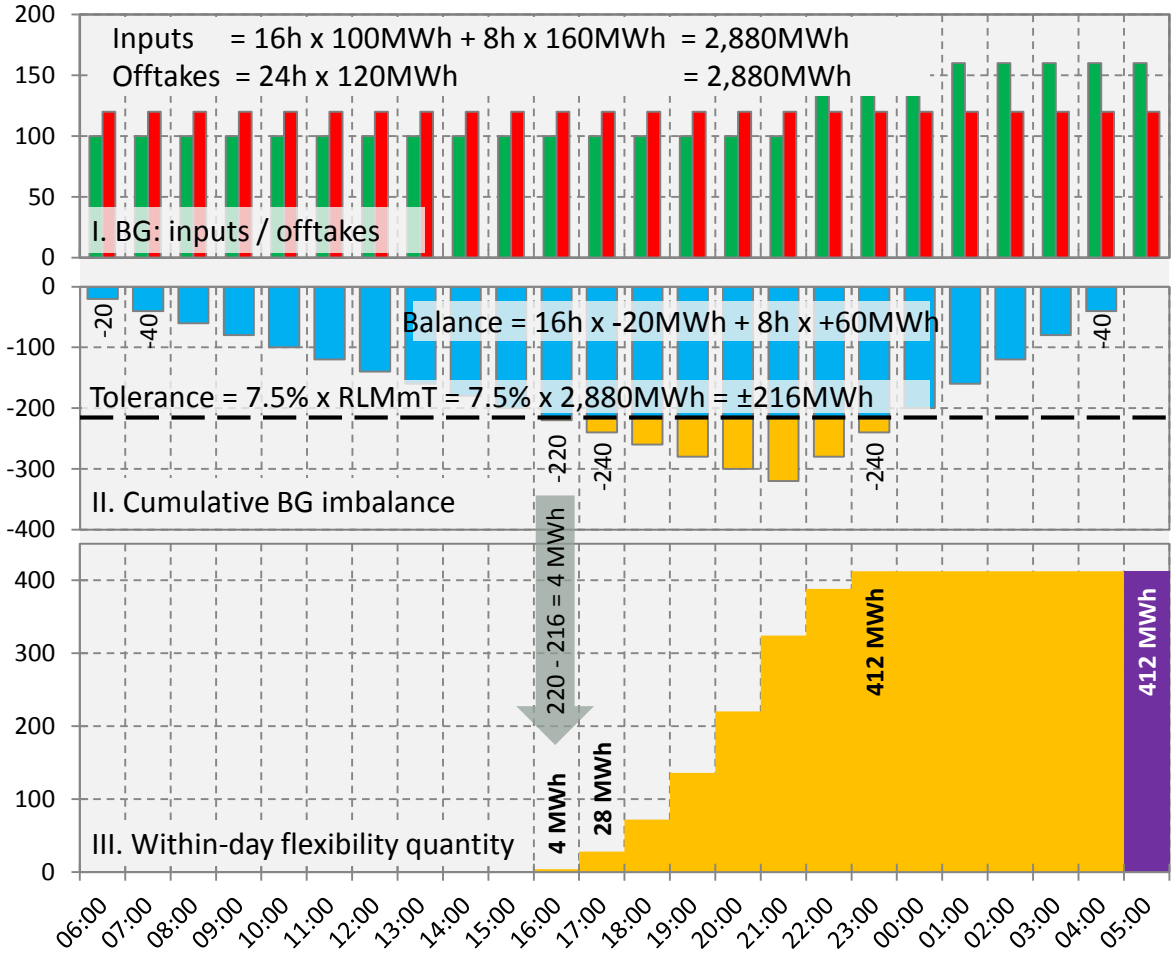
2. **German Within Day Obligations in detail**

Within Day Obligations in Germany since October 2016

Aspect	Within-day flexibility charges
Within-day obligation applies to	Balancing group of Balancing Group Manager
Charges are based on	**Cumulative** hourly imbalances outside applicable tolerance limits as determined for relevant MBG*
Tolerances granted	**7.5%** for both RLMoT and RLMmT (calculated for each hour based on relevant **daily** offtake quantity, so same tolerance limits apply in all hours of a gas day)
Pricing	50% of difference between volume-weighted average buy and sell prices paid and received in relation to relevant balancing actions taken on relevant gas day
Charges are levied	Only on gas days with MOL 1 buy **and** sell balancing actions

* MBG = master balancing group

Sample calculation for the determination of within-day flexibility charges 1/2



VTP inputs 2,880 MWh

RLMmT 2,880 MWh

Imbalance < tolerance

Imbalance > tolerance

Billable within-day flexibility quantity

- Hourly balances (inputs - offtakes) are cumulated over the day
- Balances are compared against tolerance limit (+/- 7.5%)
- Absolute values of tolerance violations are added together
- Sum equals within-day flexibility quantity

Sample calculation for the determination of within-day flexibility charges 2/2

Simplified sample calculation for within-day flexibility costs

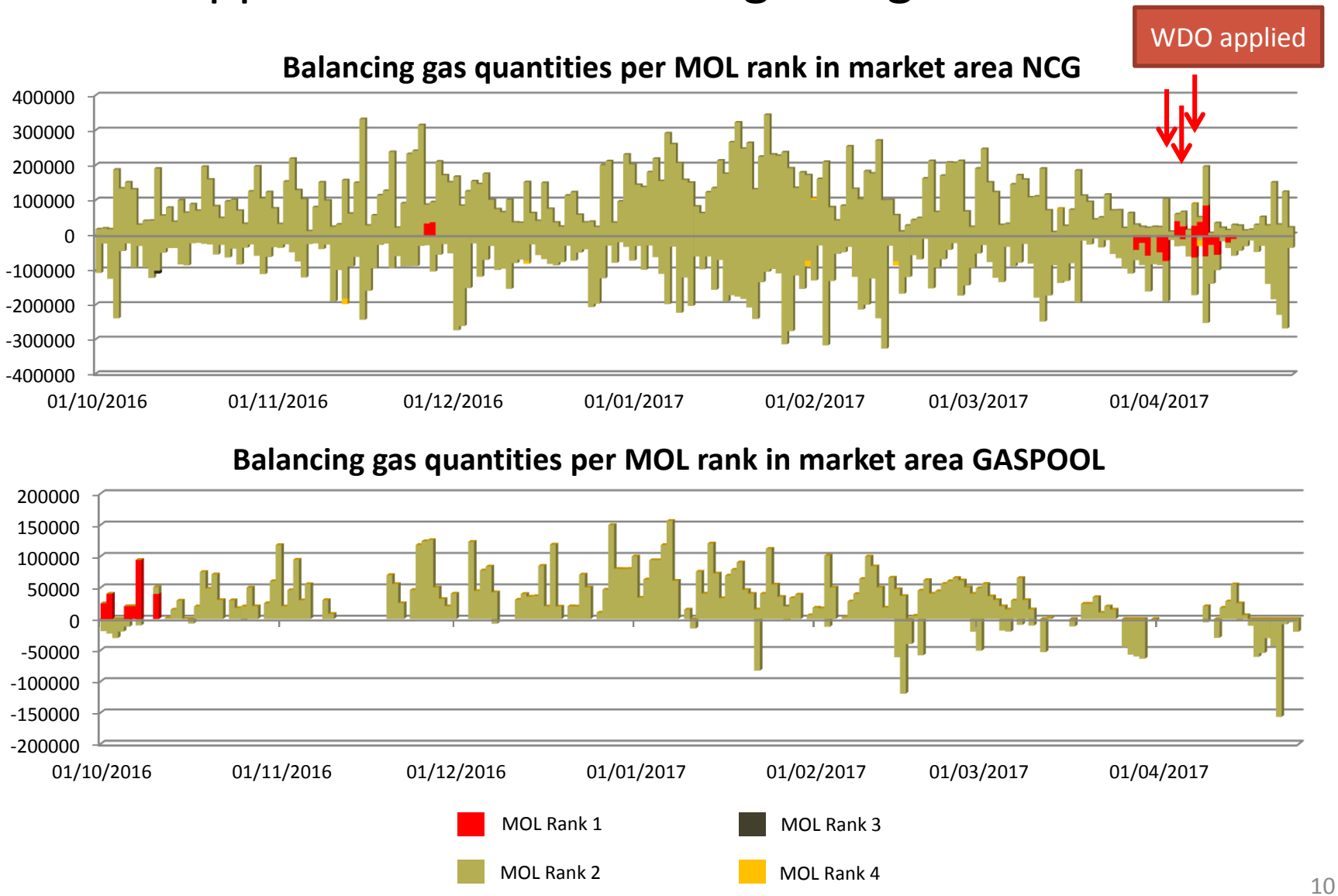
Day D	Price	Balancing quantity	Costs (+) / Revenues (-)
Buy	€30	250 MWh	€7,500
Buy	€50	250 MWh	€12,500
Subtotal buy transactions		500 MWh	€20,000
Sell	€25	-60 MWh	-€1,500
Sell	€12.5	-40 MWh	-€500
Subtotal sell transactions		-100 MWh	-€2,000

Ø price balancing buy trades: **€20,000 / 500 MWh = €40/MWh**

Ø price balancing sell trades: **€2.000 / 100 MWh = €20/MWh**

Within-day flexibility charge (if negative: 0):
½ x (**buy price - sell price**) = ½ x (**€40/MWh - €20/MWh**) = **€10/MWh**

Balancing gas quantities per MOL rank and cases of application of structuring charges



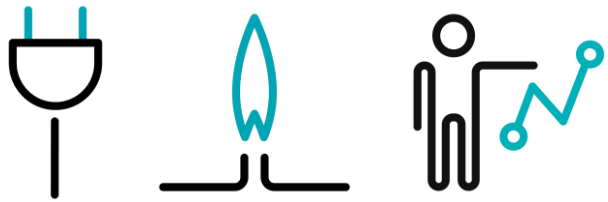
Conclusions

- Since the introduction of the new WDO on 1 Oct 2016, within day obligations became effective on only a very few days
- Non-application of WDOs on most days does not mean that WDOs are not required
- In contrary, German WDO model allows shippers to manage their portfolio in a flexible way while at the same time providing an incentive to avoid “extreme” behavior

System-wide WDO BeLux

Workshop ACER on WDO's

15 May 2017



CREG

Commission for Electricity and Gas Regulation

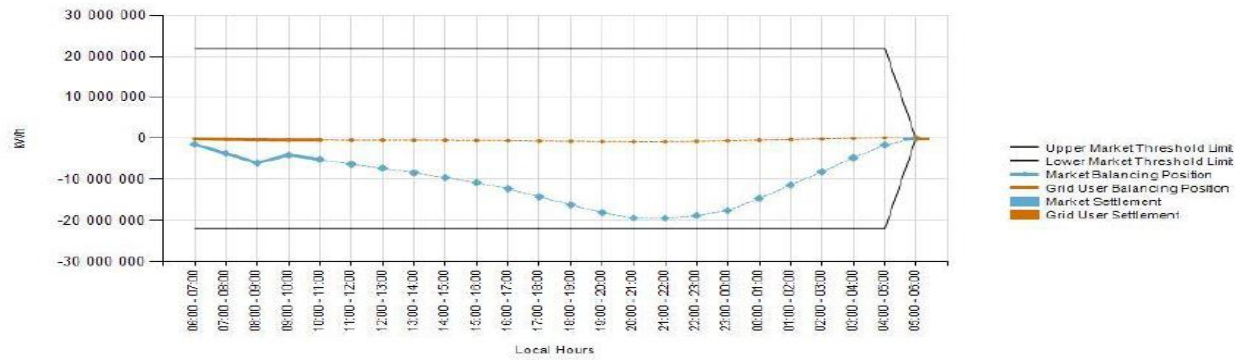
BeLux Daily Market-Based Balancing
Core element = information

GRID USER BALANCING POSITION

Display H-Zone | Display L-Zone | Download

Previous Day | 08/11/2016 | Next Day | Last Available Report 08/11/2016 11:52

Show Only Grid User | Show All | Generated at 08/11/2016 11:33:00



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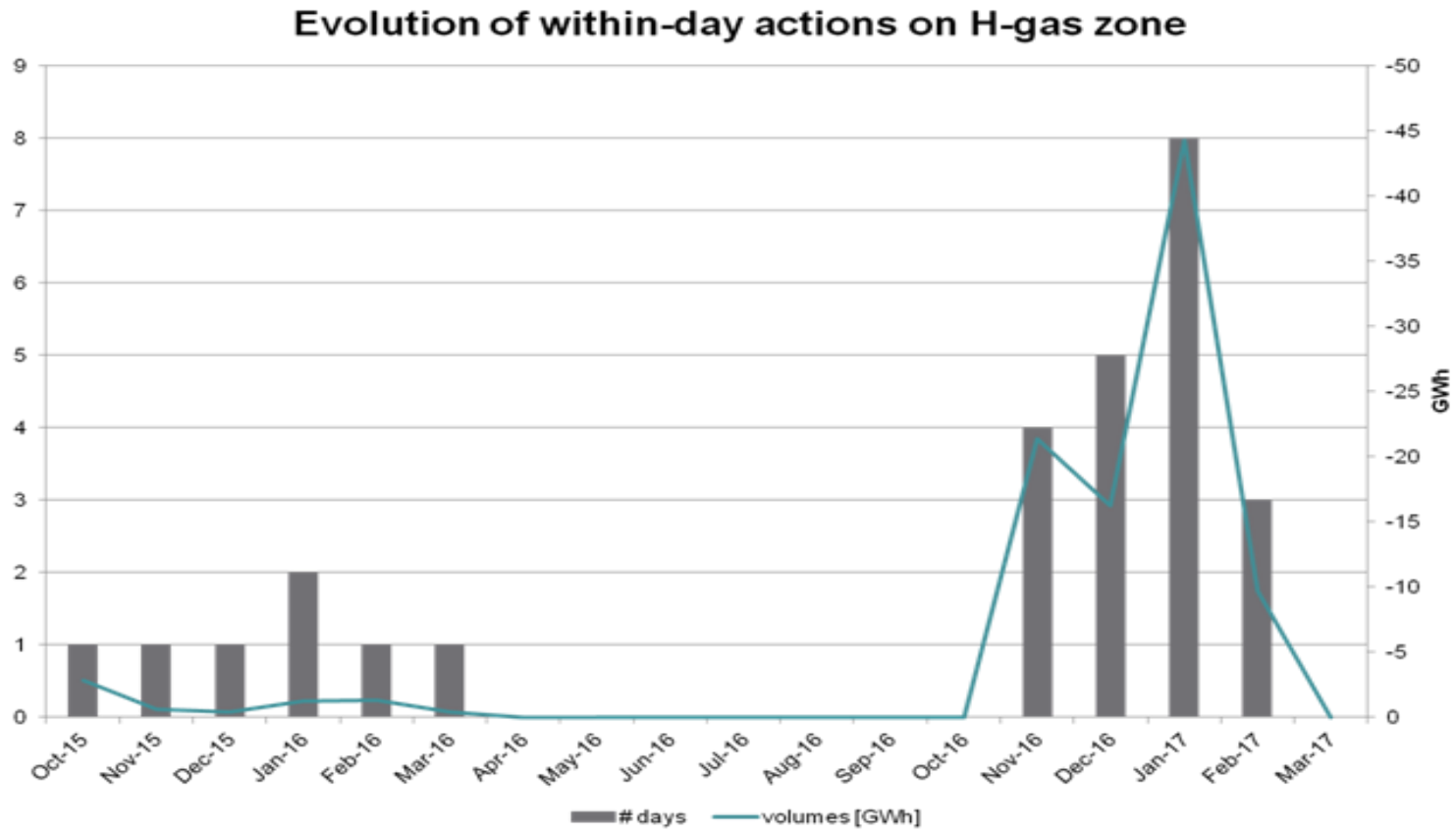
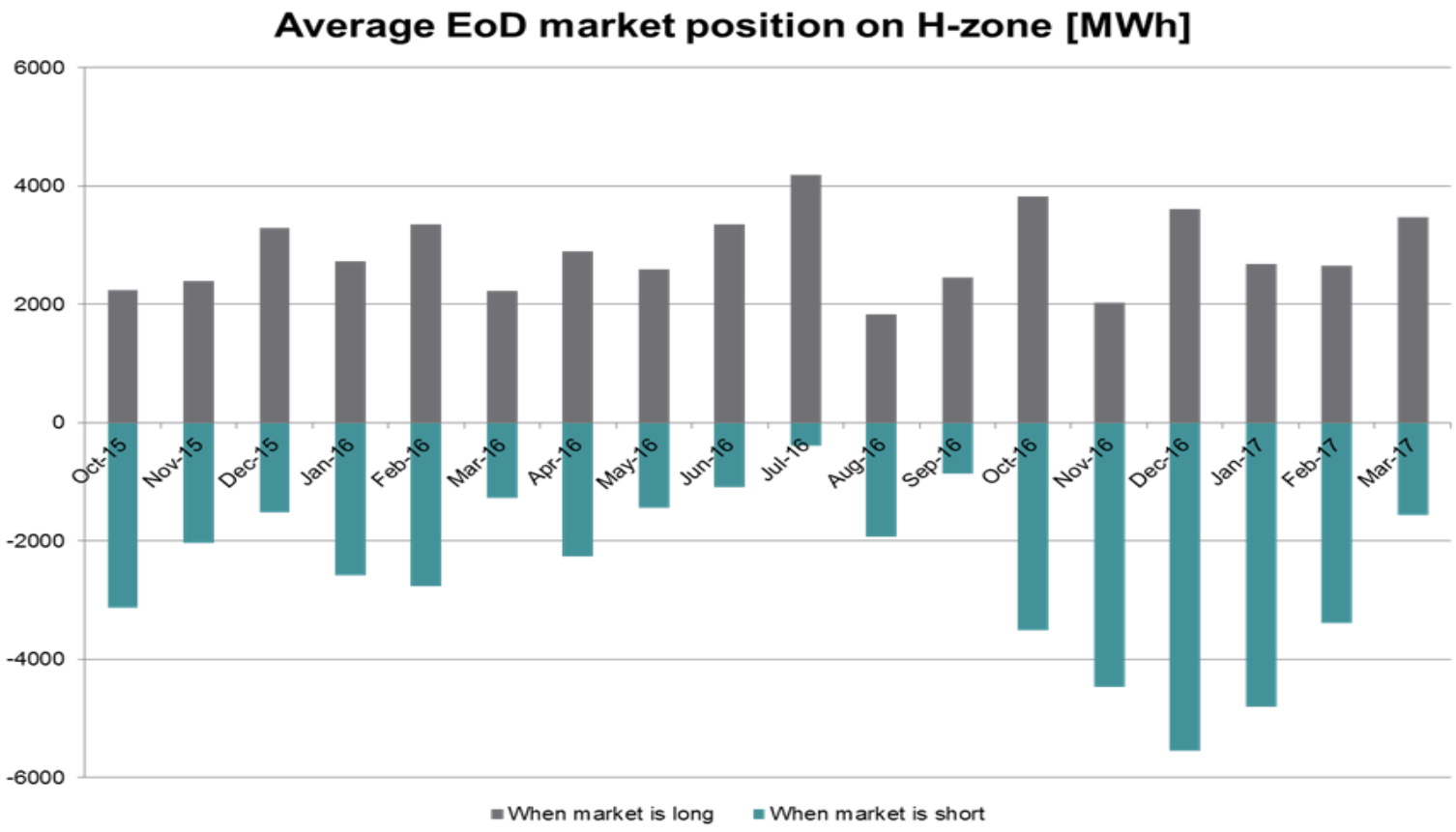
CREG

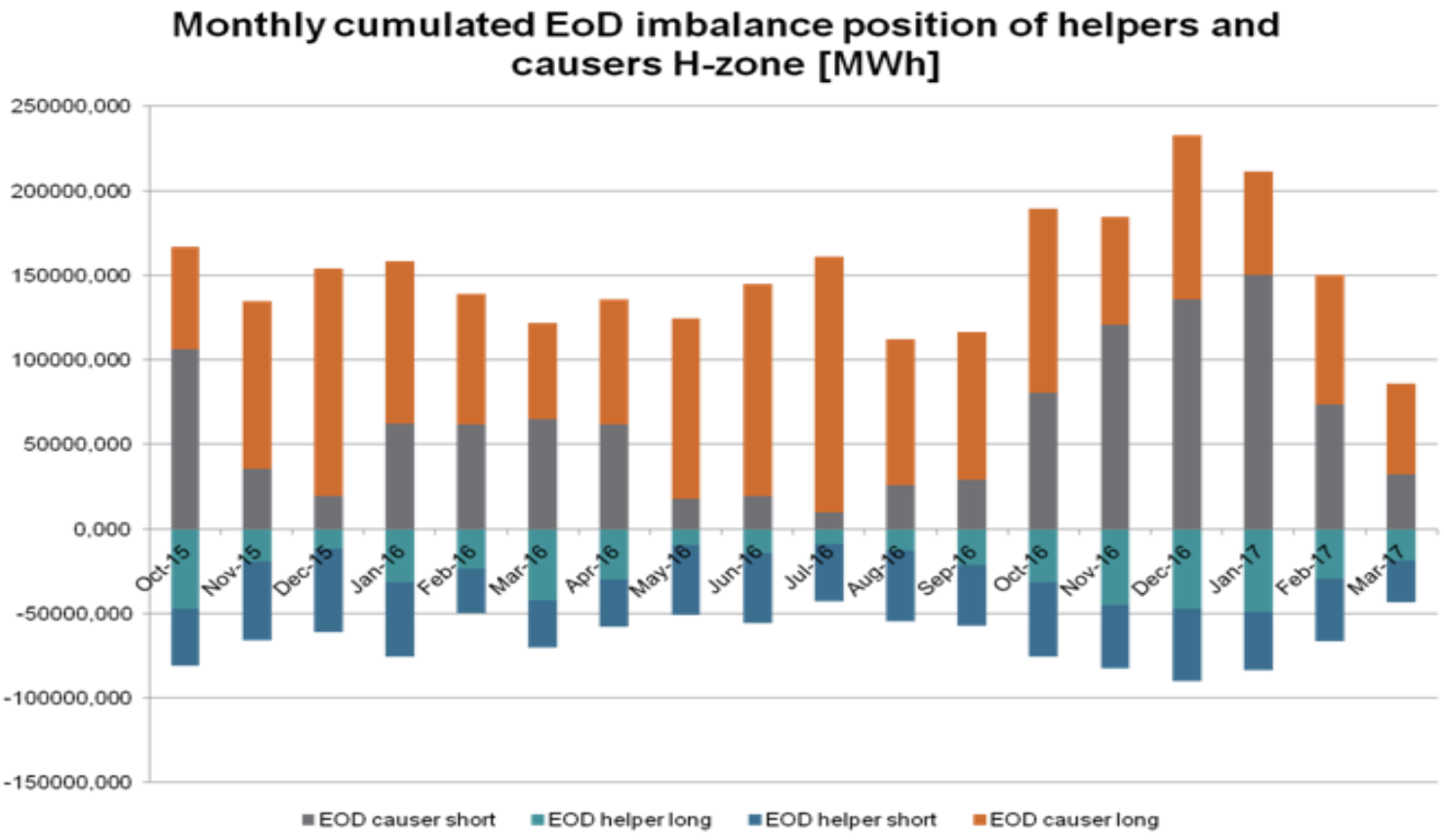
BeLux Daily Market-Based Balancing
WD imbalance



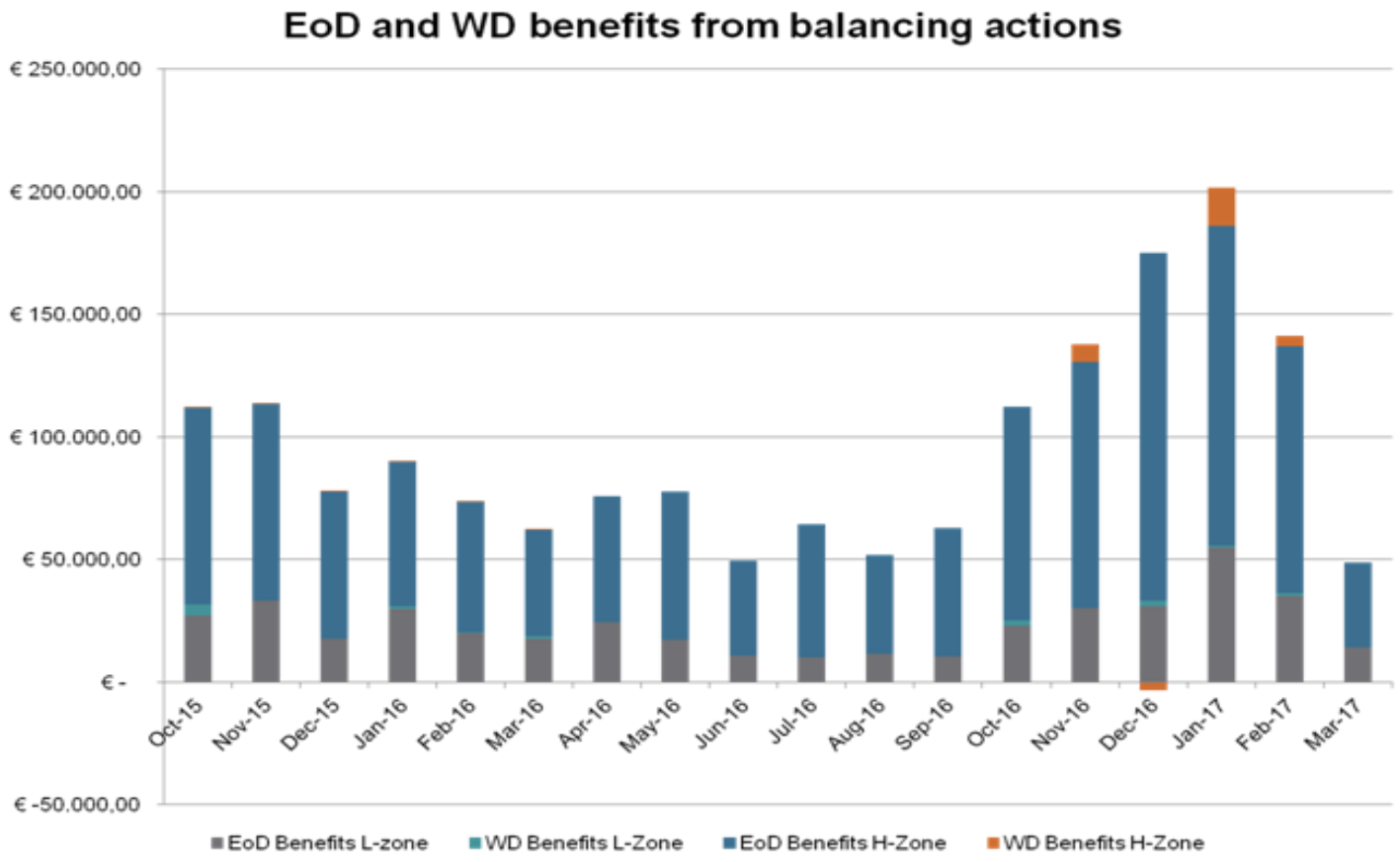
BeLux Daily Market-Based Balancing
EoD imbalance



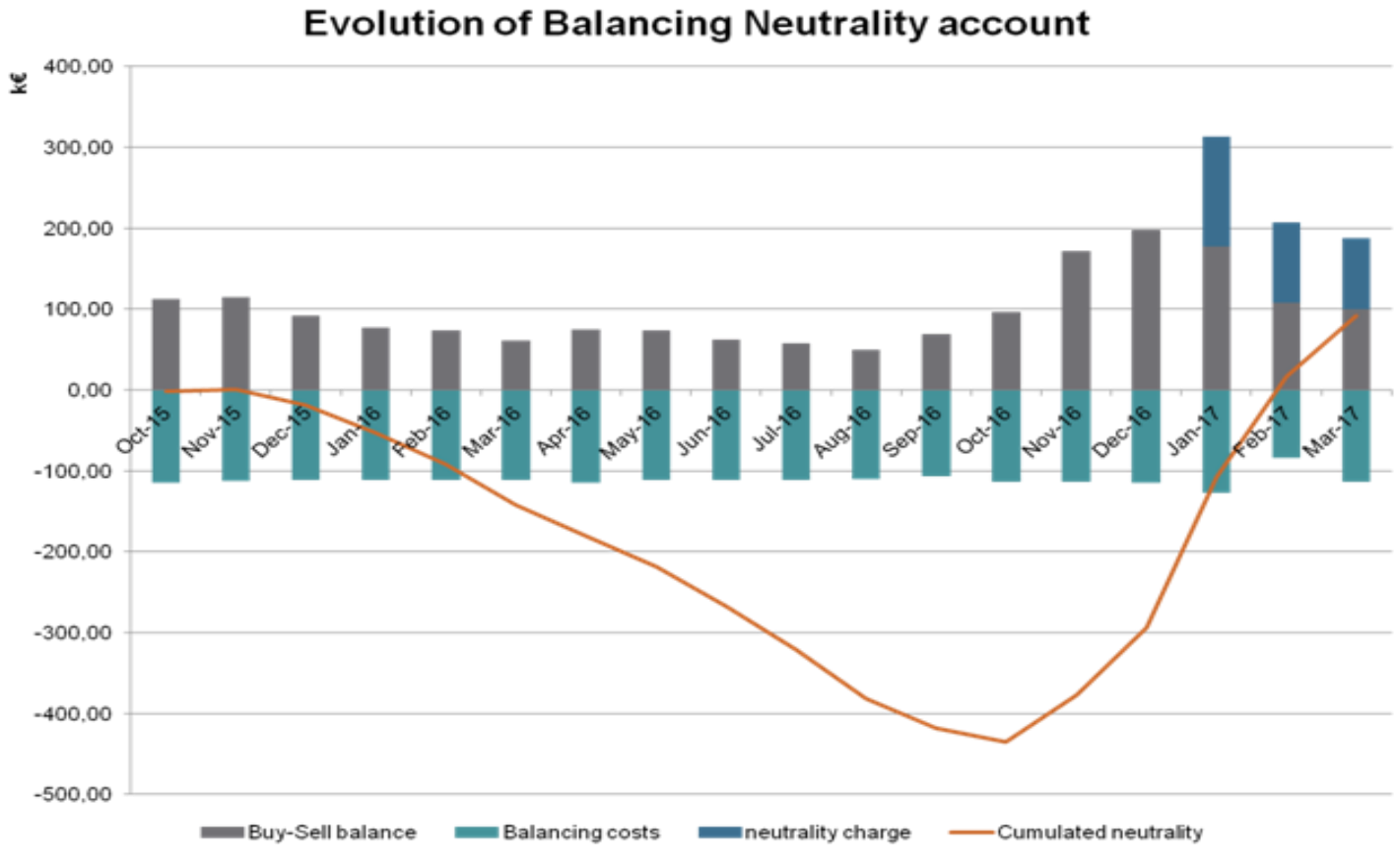
BeLux Daily Market-Based Balancing
EoD imbalance



BeLux Daily Market-Based Balancing
EoD and WD benefits



BeLux Daily Market-Based Balancing
Neutrality Balancing Account – NF= 0,005 Euro/MWh (domestic exit)



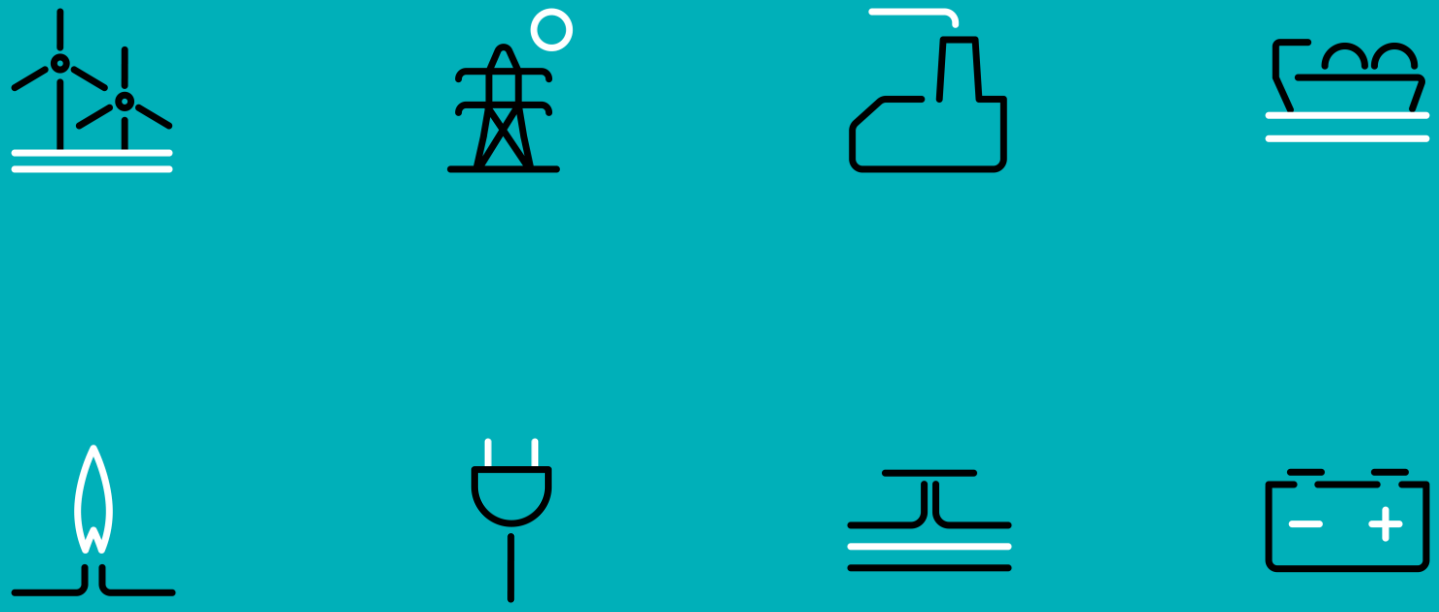
BeLux Daily Market-Based Balancing
NF Europe cluster 2015

	Neutrality Fee Euro/MWh	Total amount Milj Euro	Balancing Account Milj Euro
Gaspool	0,25 (RLM) 0,75 (SLP)		390 (Feb 2017)
NCG	0,00 (RLM) 0,80 (SLP)		210 (Dec 2016)
PegN-TRS			
NBP			
CEGH / VTP			
ZTP	0,005	0,8 – 1,0 (2017)	0,1 (Feb 2017)
TTF	No NF	0	0
PSV			

BeLux Daily Market-Based Balancing
Summary System-Wide WDO

- Grid users balance the network having access to **system** felexiblity
- Userfriendly (no barrier to entry) based on **binding** hourly info and forecast
- Balancing operator/TSO intervenes WD (**limited #**) and EoD (**every day**): grid user knows exactly when and how (no linepack info needed)
- Transparent billing based on STSP
- No **cross-subsidization** – Level playing field
- Low overall cost
- Link with curtailment/emergency

CREG



Commission for Electricity and Gas Regulation

Commercial and Physical balancing

Commercial Balancing

- Market WD and EoD settlement

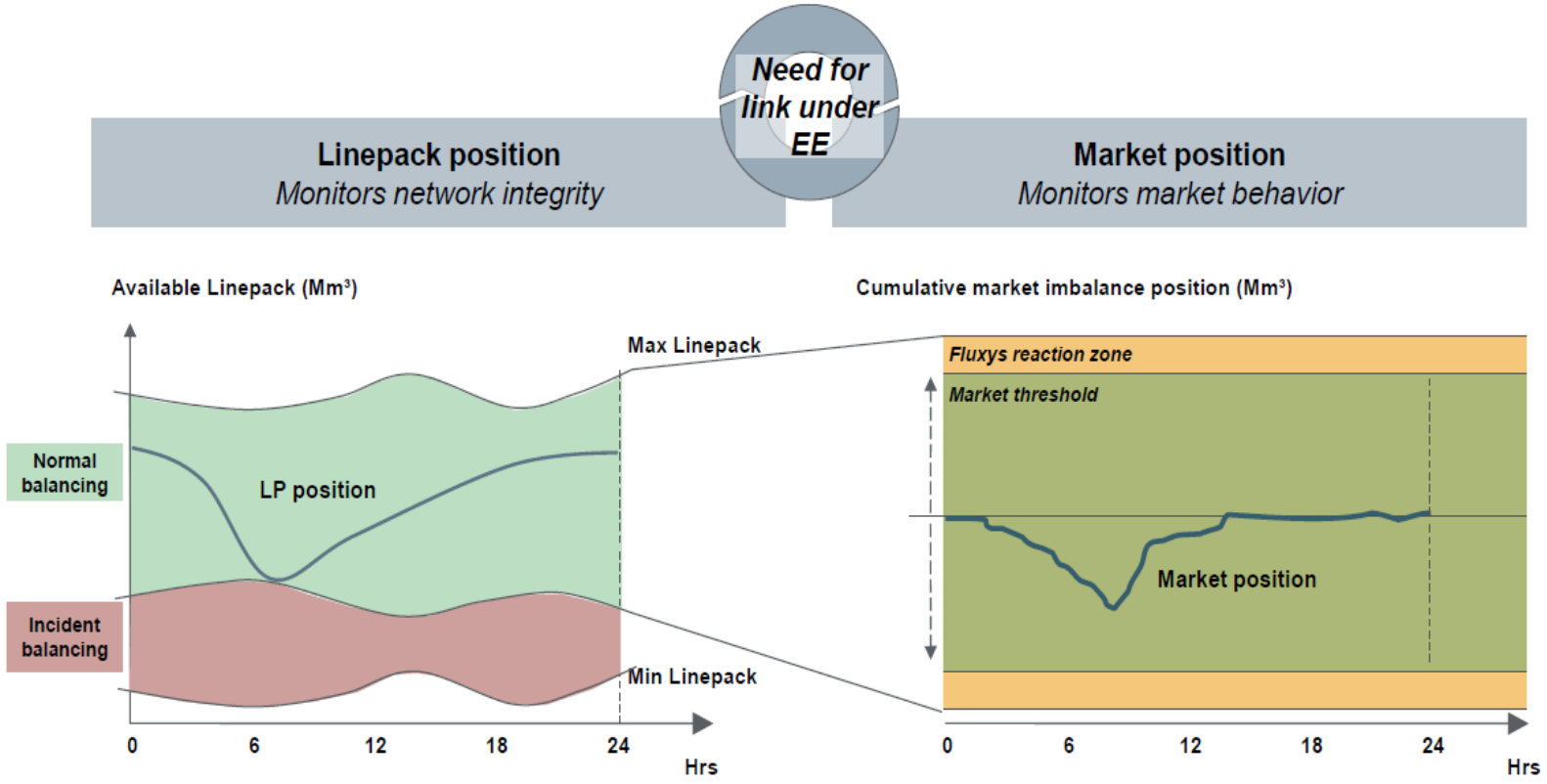
- Clear and transparent rules for market
- Grid User knows when FLX will buy/sell for commercial balancing
- Grid User can always make the trade-off to take the settlement or to adapt its position
- Costs allocated to causer

Physical Balancing

- Technical imbalances
  - Losses, own usages, filling,…

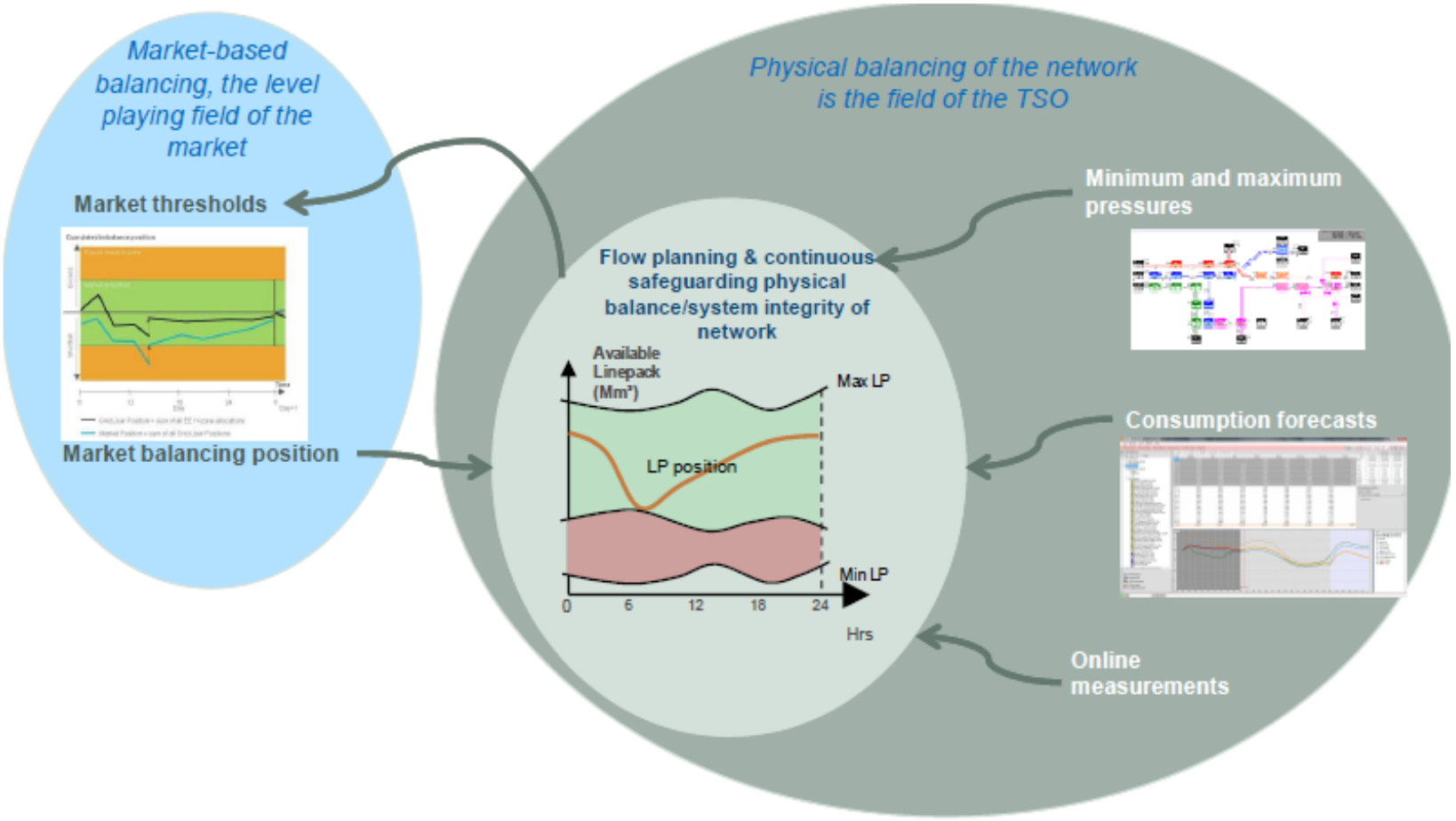
- No direct link with commercial behavior of market

Linking linepack with market



How to deal with situation where Linepack goes beyond normal circumstances?

Linking linepack with market



Authority for
Consumers & Markets

Balancing costs of the Dutch balancing system

Legal background

- Art 26.2(c): the main costs to be incurred by the network users in relation to their balancing obligations shall relate to their position at the end of the gas day;
- Costs for Dutch shippers relate to
  - Linepack flexiblity service fee of 0,4% of the neutral gas price for each MWh of imbalance at the end of the gas day
  - Within day balancing costs. When GTS is forced to buy or sell balancing gas within day to keep the system safe, shippers pay depending on whether they contributed to the imbalance

Authority for Consumers & Markets

Monitoring by ACM

- GTS reports every year the following data
  - LFS costs per shipper per day
  - Within day balancing costs of GTS
  - Neutral gas price
  - Total LFS costs versus within day balancing costs
- Within day balancing costs are defined as the difference between the neutral gas price and the price GTS pays on the within day market
  - GTS buys 100 MWh @ 20 euro at the within day market.
  - Neutral gas price is 18 euro/MWh
  - Balancing costs are 100 x 2 = 200 euro

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Results

Period	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Bid price ladder/exchange (euro)	971.397	2.210.532	1.350.925	2.355.668	1.082.703
LFS (euro)				995.317	902.457
Total balancing costs (euro)	971.397	2.210.532	1.350.925	3.350.985	1.985.160
Ratio LFS/Balancing costs				0,42	0,83

Authority for Consumers & Markets

- Costs are around 20.000 – 30.000 euro per shipper
- Total balancing costs have increased since the introduction of LFS
- LFS costs are too low compared to within day costs.
- LFS fee should double to comply with art 26.2
  - ACM has asked GTS formally to increase the fee via a change in the national codes

Further thoughts

- Difficult to determine true balancing costs for shippers
- Balancing costs of shippers due to within day restrictions are not known.
  - Shippers with physical assets probably do not make extra costs
  - Shippers who outsource their balancing obligations do make extra costs
- From an economic perspective allocating the costs to actors who can control the costs is economically more efficient (polluter pays principle)
- Increasing the linepack flexibility fee will give a greater incentive to shippers to balance, which in turn decreases the LFS costs. This makes compliance to art 26.2 in general difficult for regimes with WDOs.

Authority for Consumers & Markets

nationalgrid

Handling network challenges without WDOs: the locational limitations within GB

15th May 2017

[redacted]

Gas Transmission in Great Britain

One of Europe's Largest Markets

- ~8,200km pipeline
- Operating pressure 70 - 94bar

- Summer Linepack 330mcm
- Winter Linepack of 350mcm

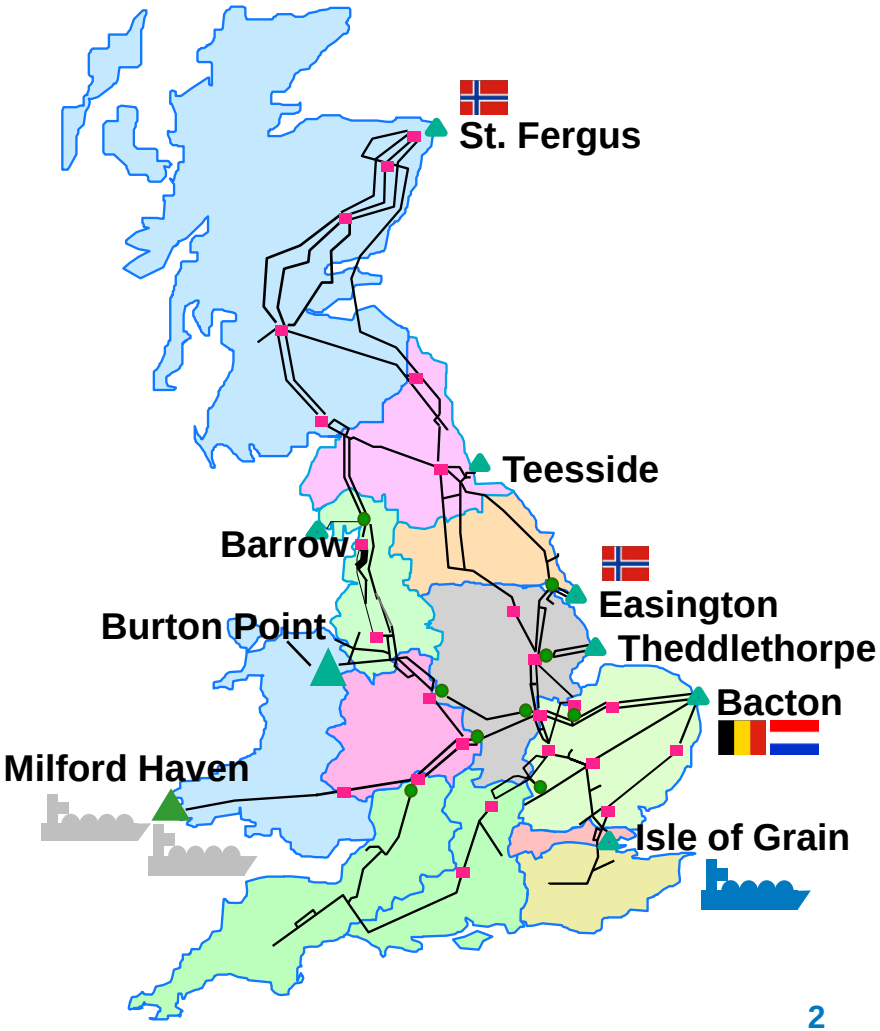
- 7 Beach Reception Terminals
- 3 LNG Importation Terminals
- 3 Interconnectors
- 10 storage sites
- 23 compressor stations

- 200+ Exit Points
- 12 Distribution Networks

Highest Demand Day: 465mcm (~4600GWh, 16bcf/d)

Lowest Demand Day: 117mcm (~1165GWh)

Annual Throughput: 85bcm (~830TWh, 3000 bcf)

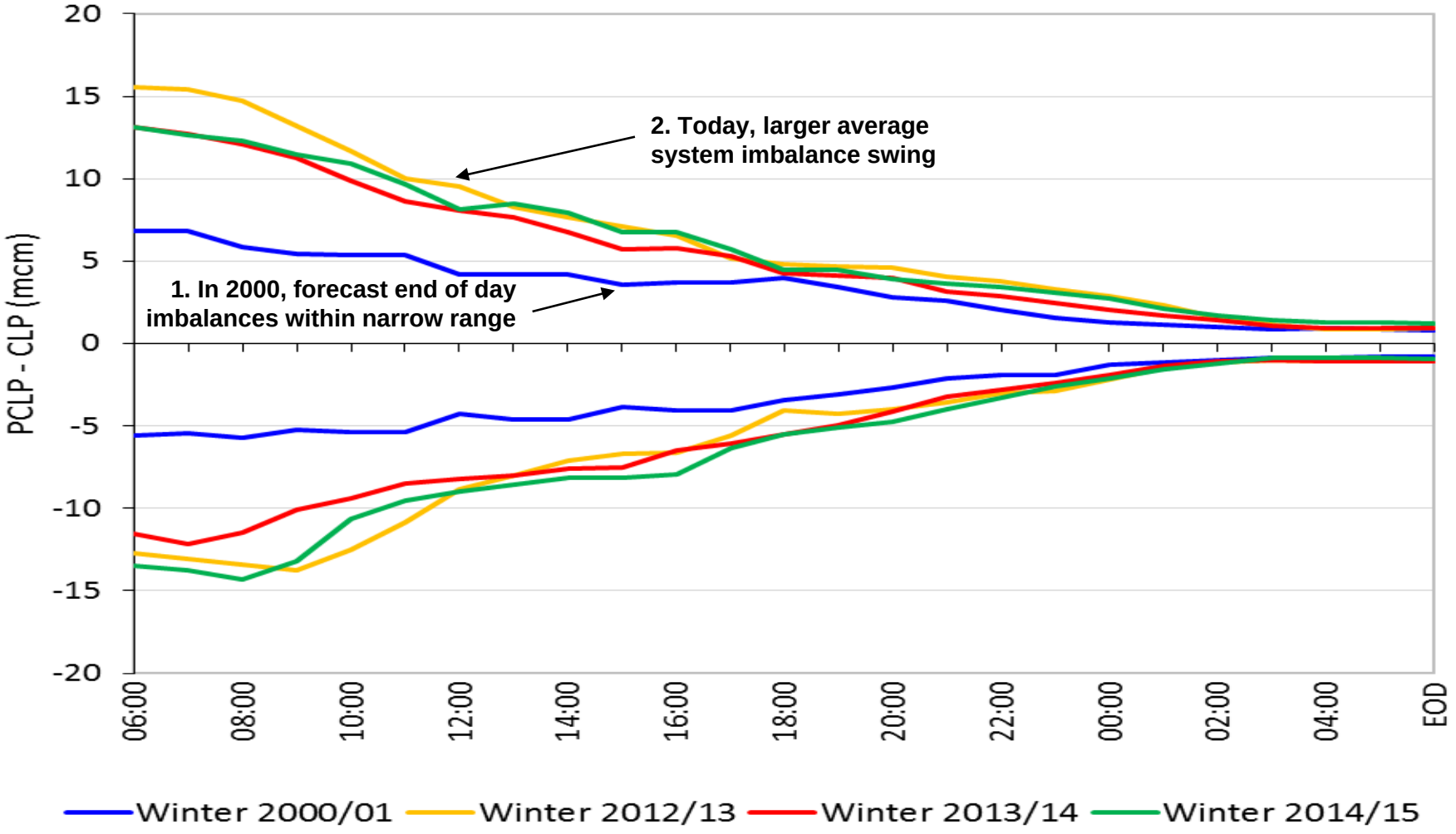


GB Balancing Principles

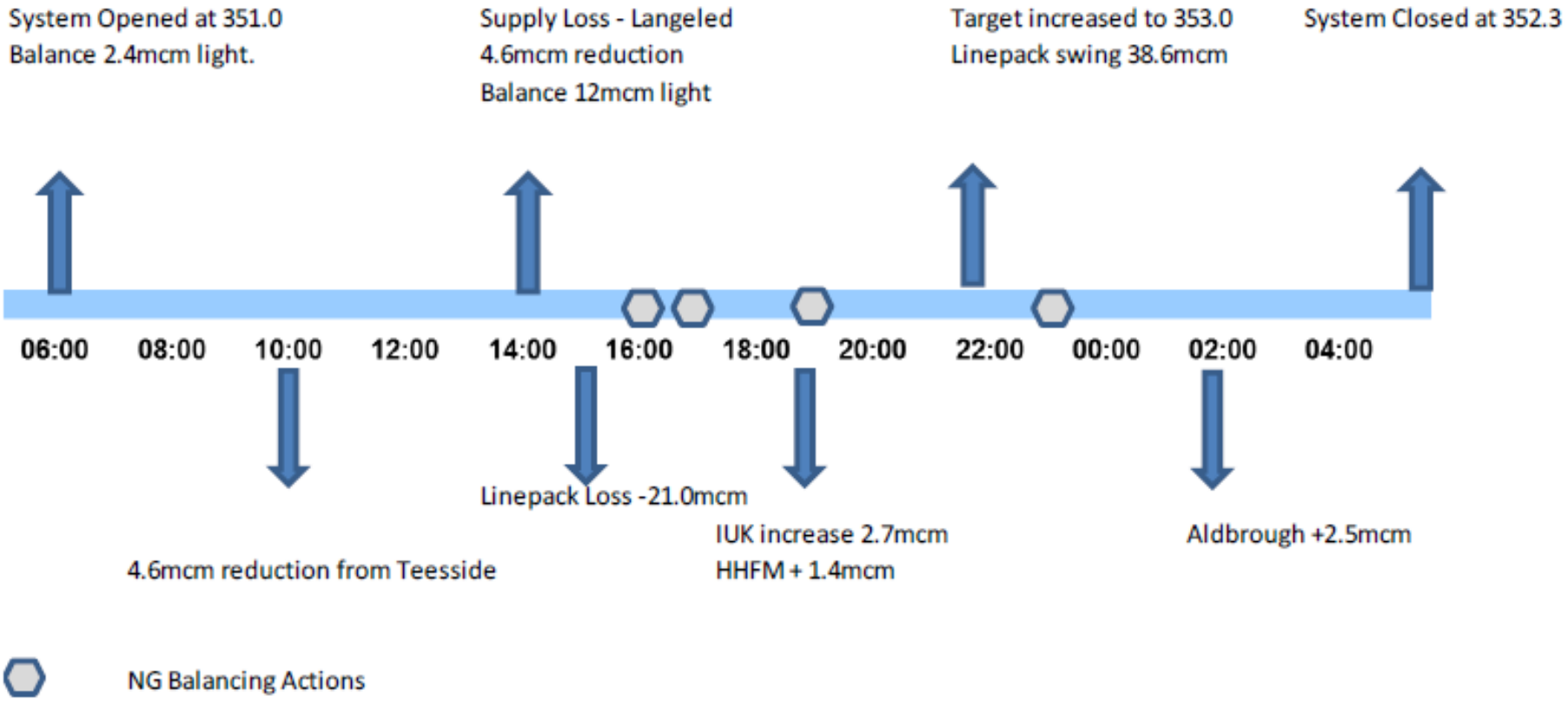
nationalgrid

- Total System is balanced on a daily basis
- No Within Day Obligations
- Shippers balance measured at the National Balancing Point (NBP):
  - All gas trades on the system take place at the NBP
- Shippers are not required to balance their own portfolios on a daily basis
- But shippers are incentivised to balance through cash-out regime
- Shippers also incentivised to provide accurate nominations through scheduling charges
- TSO undertakes Residual Balancer role to ensure physical system balance is maintained within physical capabilities
- TSO is kept cash-neutral to balancing actions, although Licence contains incentives on TSO to balance efficiently and economically.

Average predicted closing linepack swing has grown wider



Within day linepack swing
Gas Day: 11th February 2015



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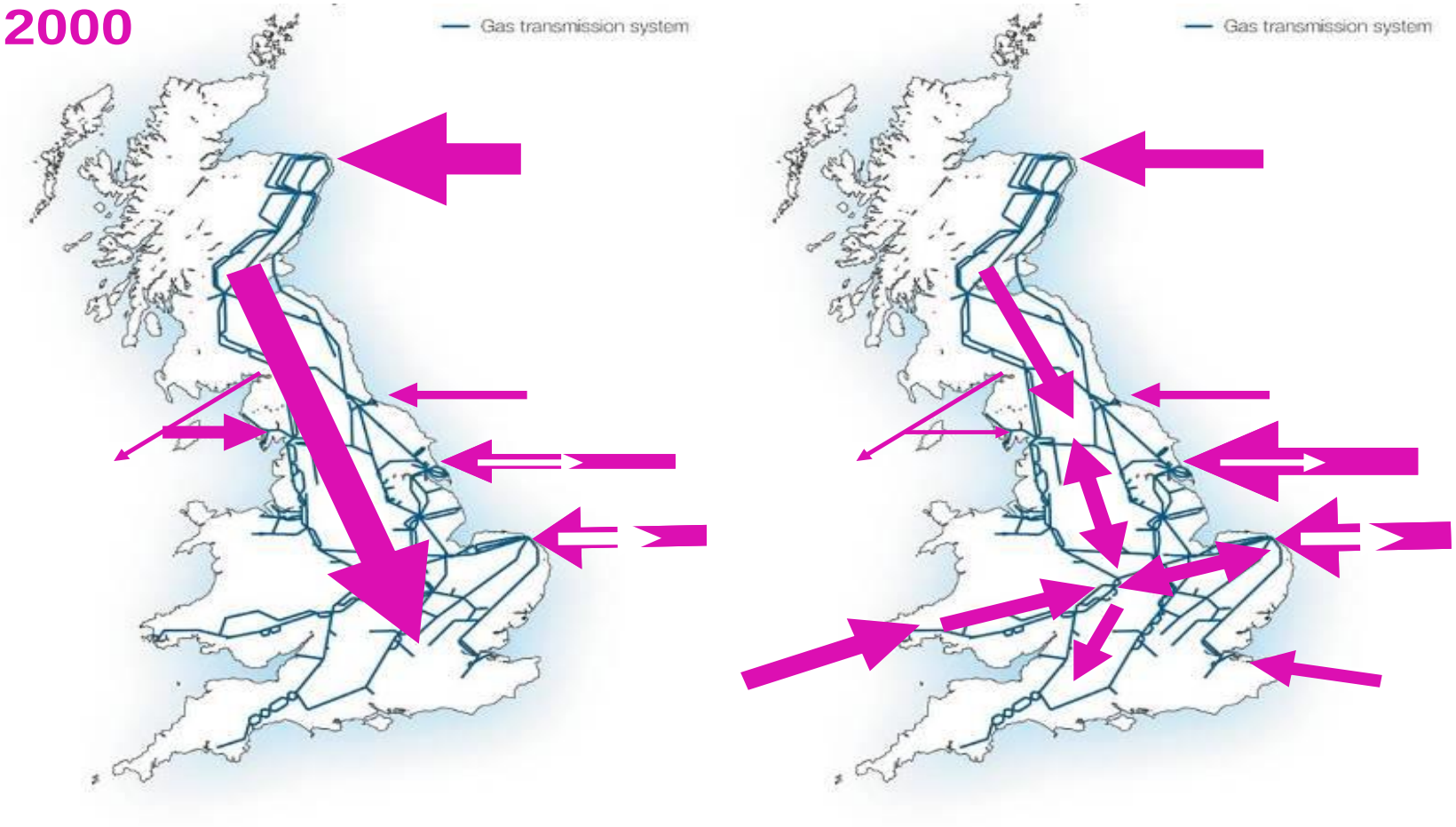
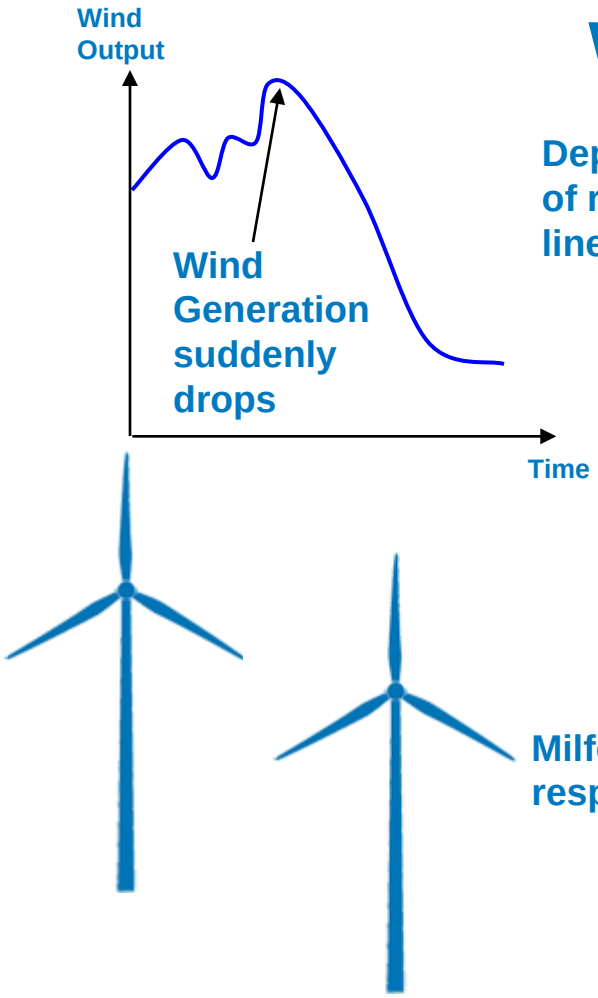
Geographic supply and demand distribution

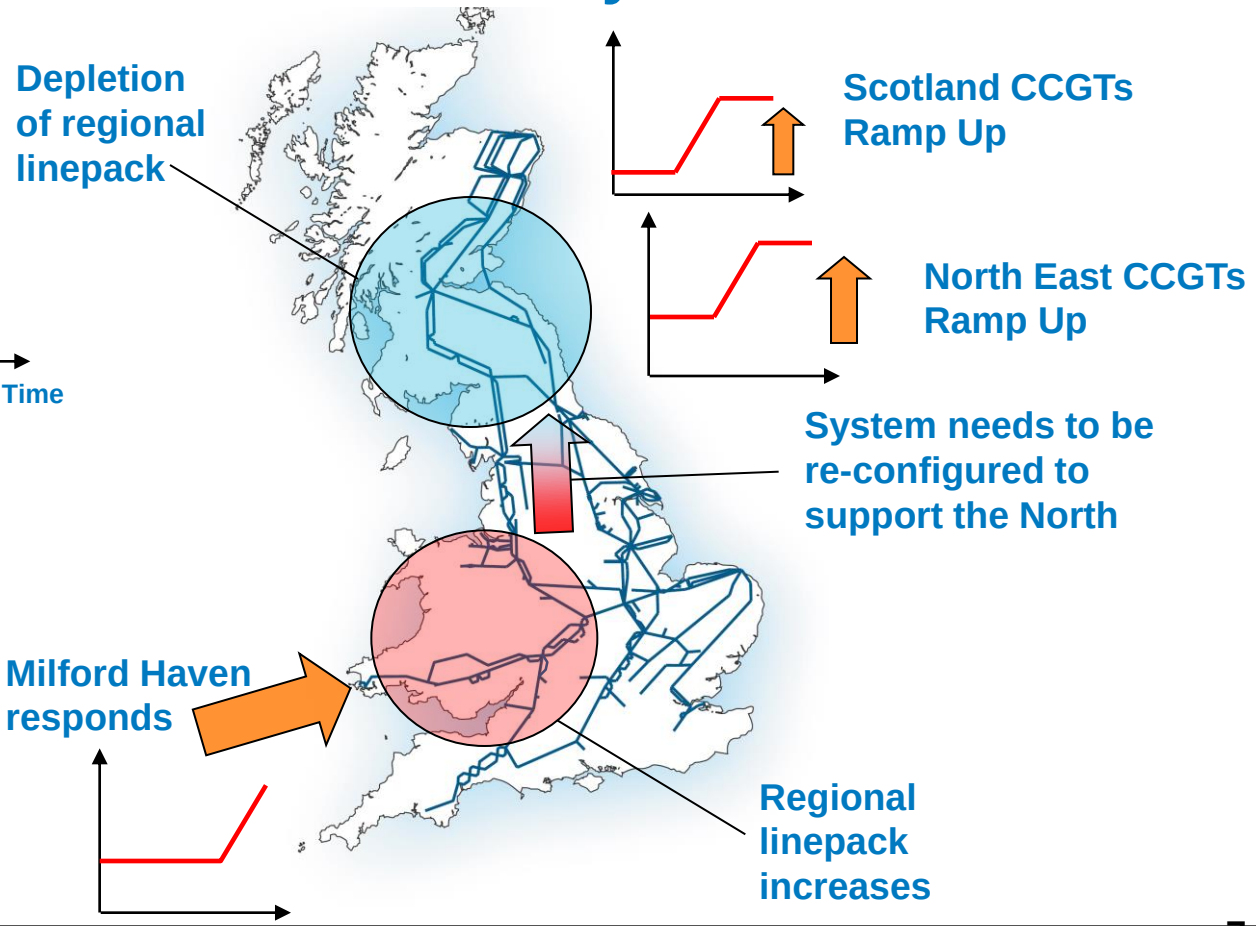
2000



Adaptability / Configurability

Wind intermittency





How these network challenges are overcome without WDO

nationalgrid

- Currently we are able to overcome these network challenges without WDO
  - High volumes of Linepack
  - Trust that the market will respond to residual balancing actions
    - Provision of information by the TSO
  - Configuring the network to be able to deal with

- What future changes might cause GB to use WDO?
  - Larger Linepack swings
  - Short market
  - Flow distances increase even further (particularly to Scotland)
  - No longer able to appropriately configure the network

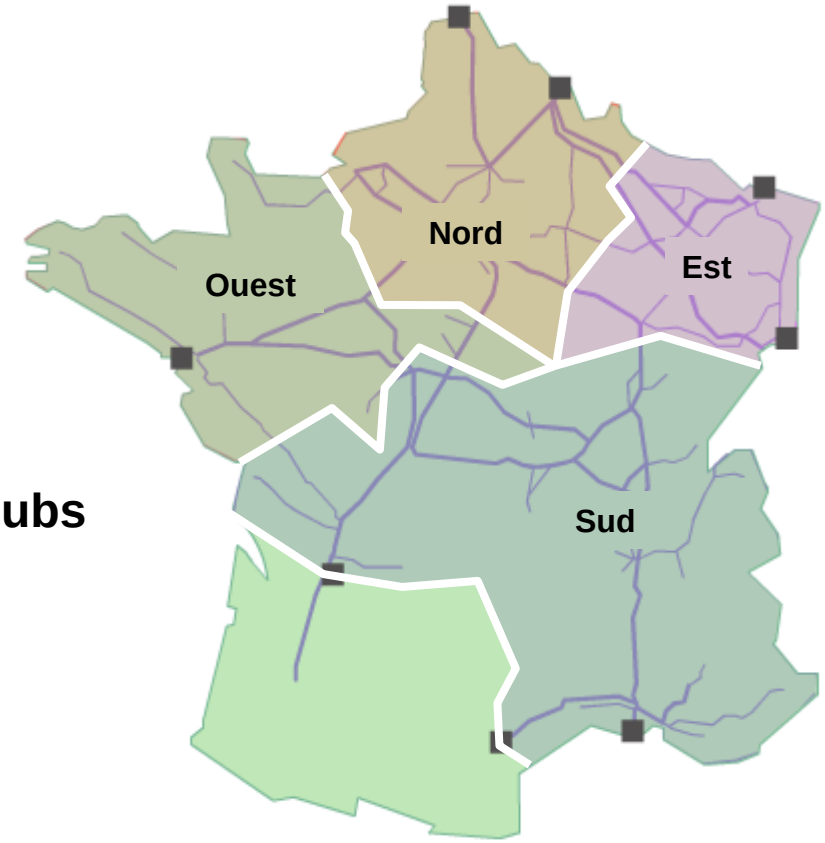
Balancing implementation: GRTgaz feedback

15 May 2017

A progressive way towards a market-based regime

2004/2005

First French gas hubs implementation

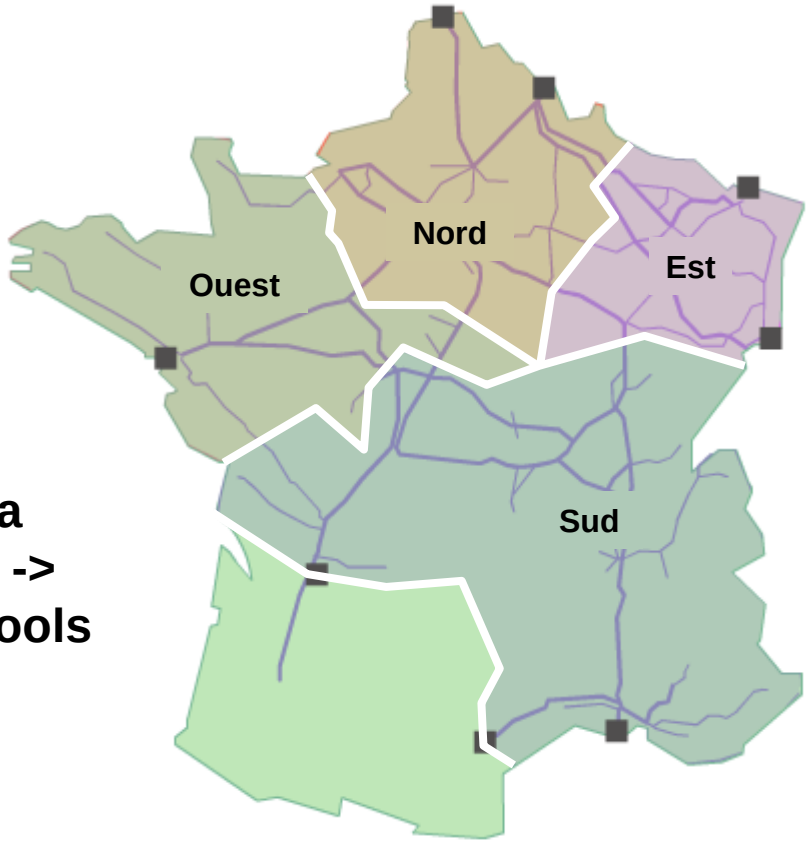


- ❑ 10 shippers
- ❑ Commercial IT system & commercial dispatching implemented
- ❑ Balancing services with SSO, imbalance tolerances with cumulative monthly accounts

A progressive way towards a market-based regime

2007/2008

Implementation of a balancing platform -> 1st market-based tools



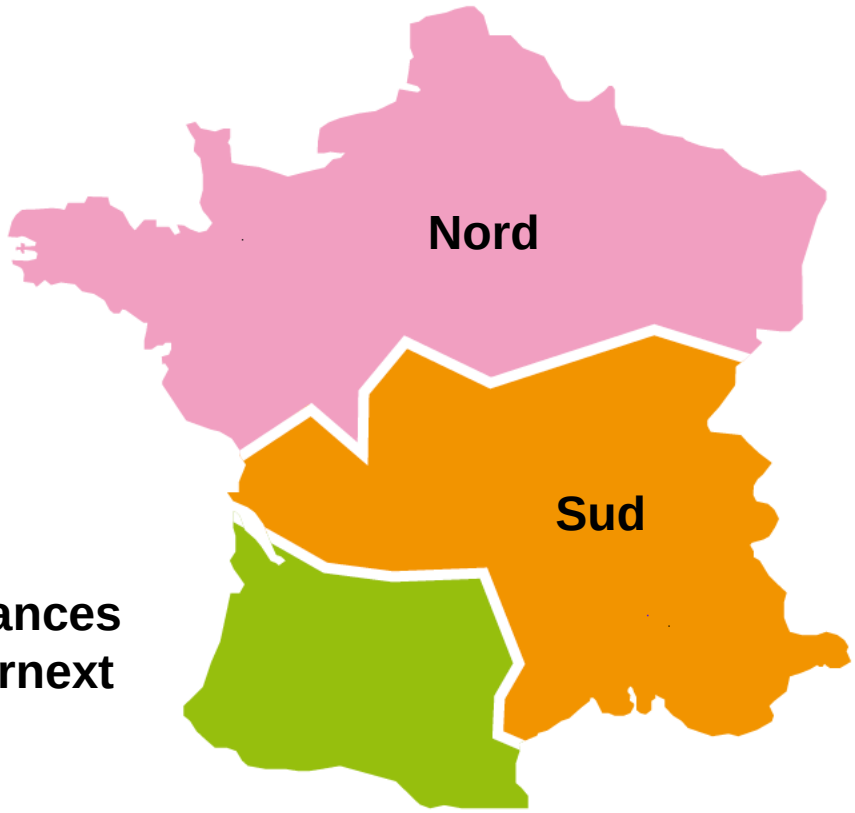
- ❑ 30 shippers
- ❑ Little part of imbalances traded on balancing platform
- ❑ Balancing services with SSO, imbalance tolerances with cumulative accounts

✓ Numerous workshops with shippers
✓ Hubs liquidity improving

A progressive way towards a market-based regime

2009/2010

3 zones merged
Trading of imbalances directly on Powernext market place



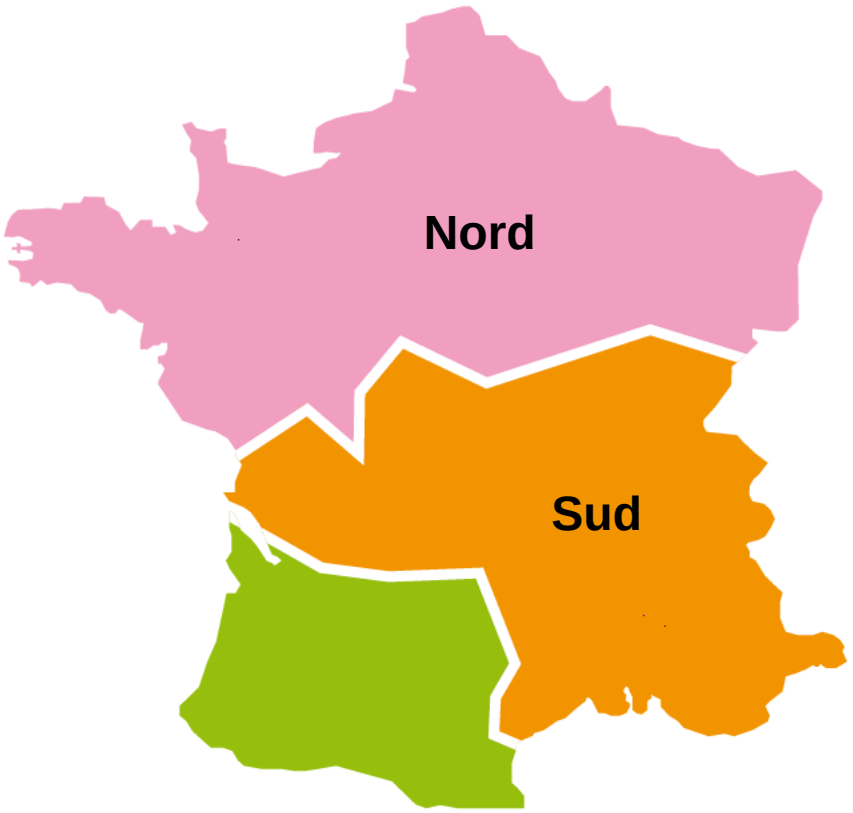
- ❑ 50 shippers
- ❑ More important part of imbalances traded via Powernext
- ❑ Balancing services with SSO, imbalance tolerances with cumulative accounts

- ✓ « Concertation Gaz »: continuous process re customer relationship
- ✓ Hubs liquidity increasing
- ✓ Improvement of quality of allocations

A progressive way towards a market-based regime

2011 -> 2015

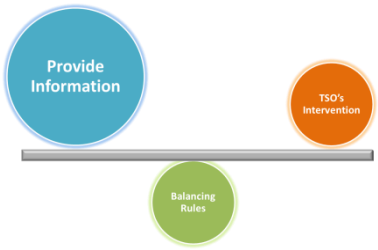
Balancing target project



- ❑ 130 shippers in 2015
- ❑ Annual milestones increasing the part of imbalances traded via Powernext
- ❑ No more balancing services nor tolerances in 2015
- ❑ Full compliance with BAL NC since 1st Oct 15

- ✓ « Concertation Gaz »
- ✓ Hubs liquidity increasing (particularly within-day)
- ✓ Achievement of projects in order to provide accurate information to shippers

GRTgaz balancing regime



Implemented since 1st October 2015

-> 2 balancing areas including 3 balancing zones

- ✓ North area (= GRTgaz North balancing zone + PEG nord VTP)
- ✓ TRS area (= GRTgaz South balancing zone + TIGF balancing zone + TRS VTP)
- ✓ Imbalance settlements per balancing zone (GRTgaz North & GRTgaz South)

-> « Base case » information provision system
-> No within-day obligations
-> No balancing services used
-> Linepack flexibility service offered
-> Comprehensive nomination scheme allowing shippers to re-nominate as often as possible in order to balance their portfolio as well as contributing to balance the gas system

-> Some agreements remain with SSO, out of scope of BAL NC (e.g. Safety contract for 2% peak demand risk, interconnection agreements)

Towards an unique French balancing area

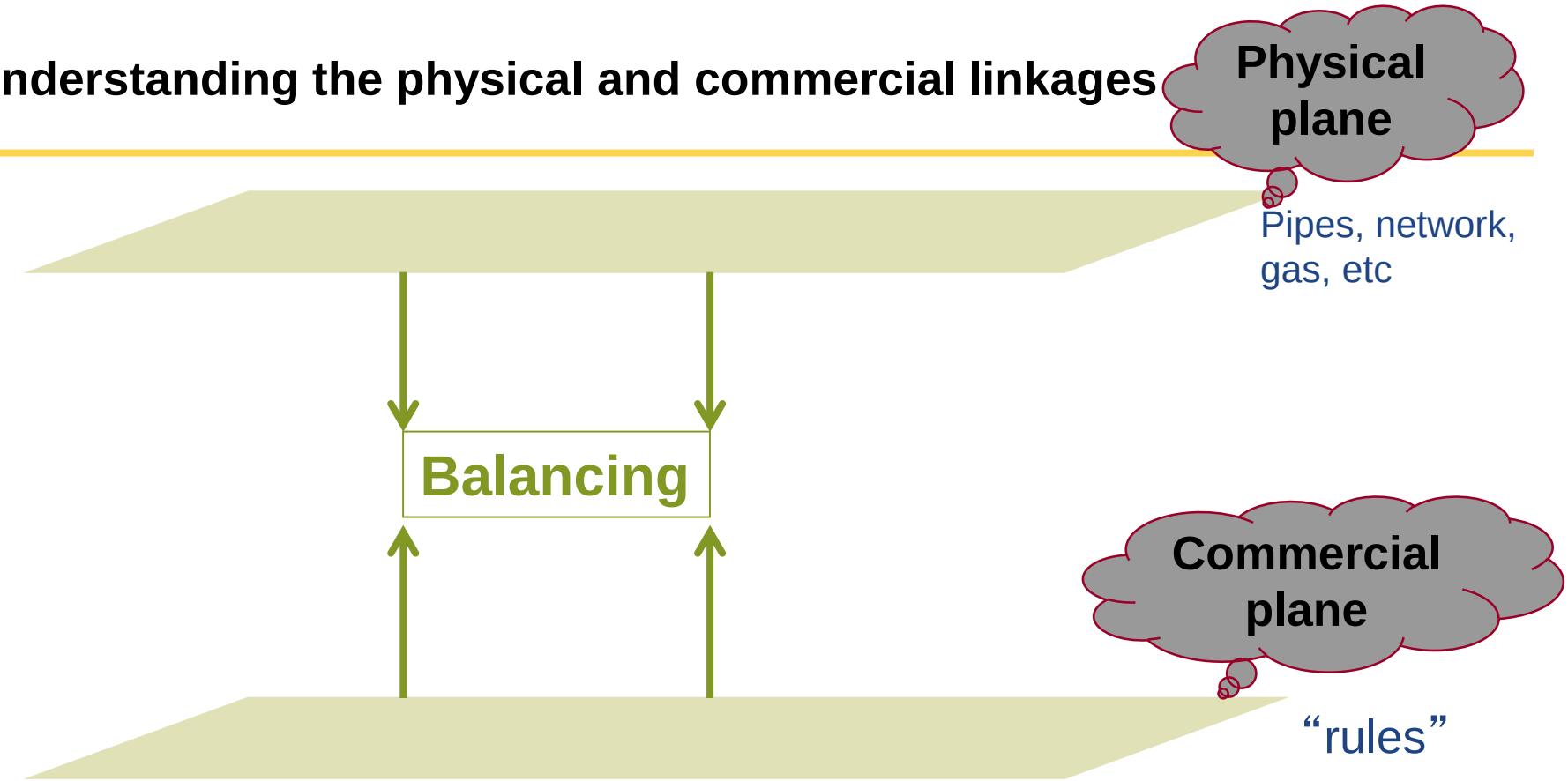
Unified planned balancing area including 2 balancing zones (GRTgaz & TIGF) without WDOs.

Balancing Regime Design
-
Within Day Obligation Design Option

sisman energy consultancy ltd

ACER Workshop on Within Day Obligations, Brussels, 15 May 2017

Understanding the physical and commercial linkages



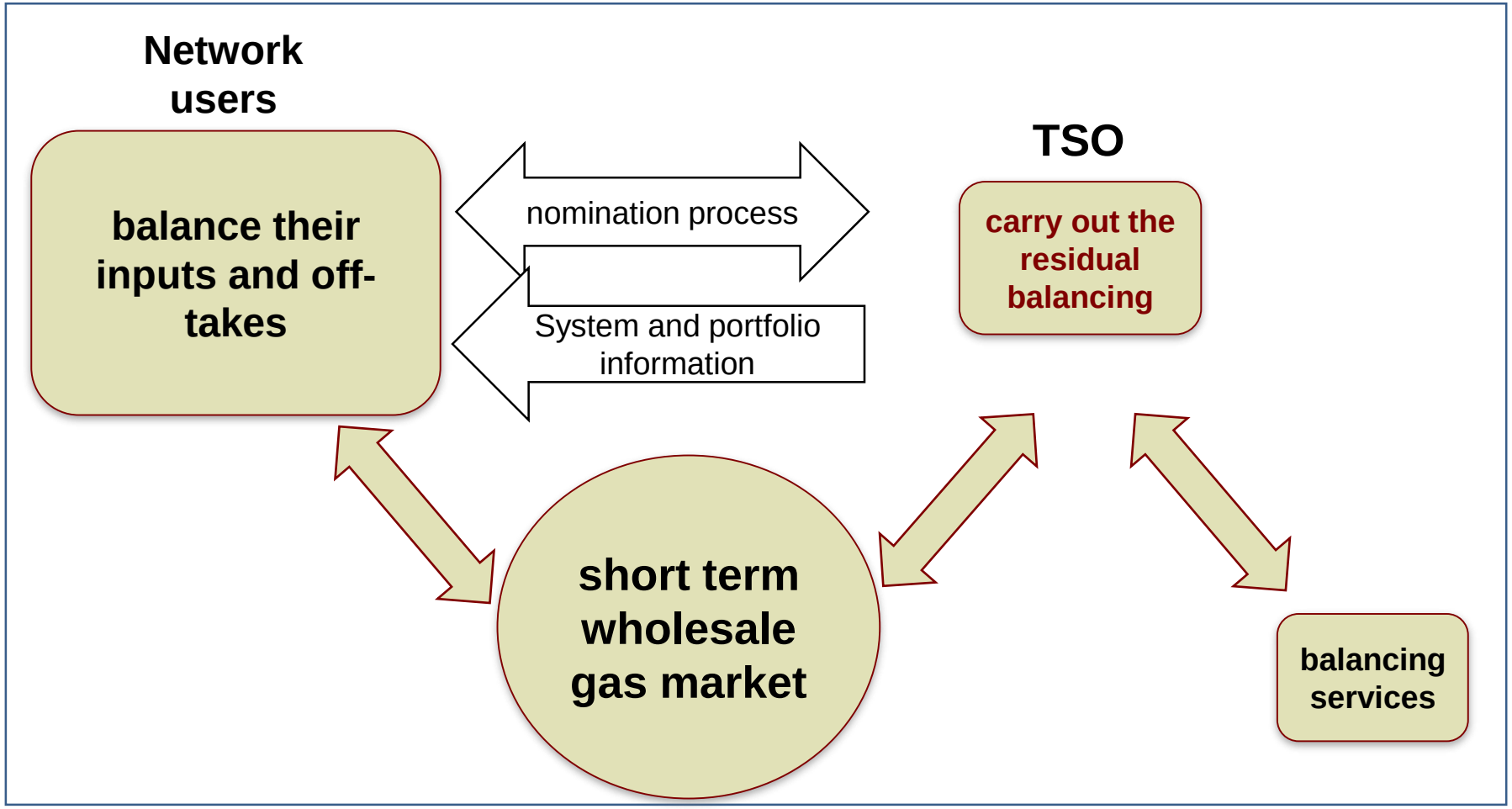
Balancing regime must:

- **facilitate a market**
- **enable physical operation of the network within operational envelope**

A well functioning market may not deliver the TSO's preferred flow patterns

sec

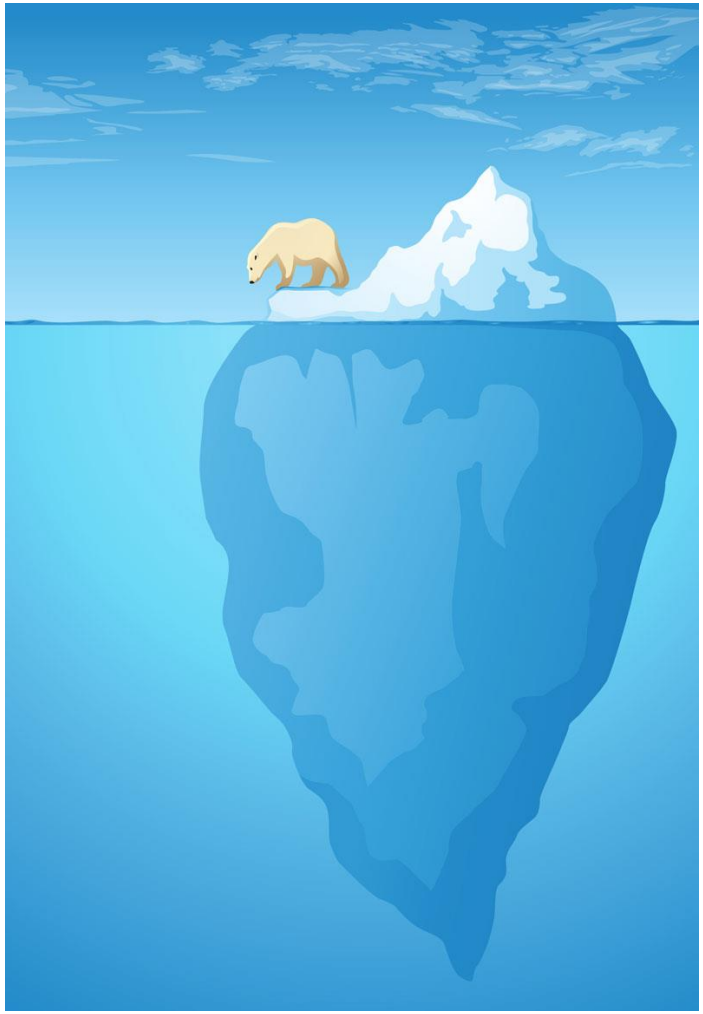
Understanding the Balancing code aspiration



Let the market balance itself; TSO to have a residual role

Balancing regime costs

End consumers pay balancing costs

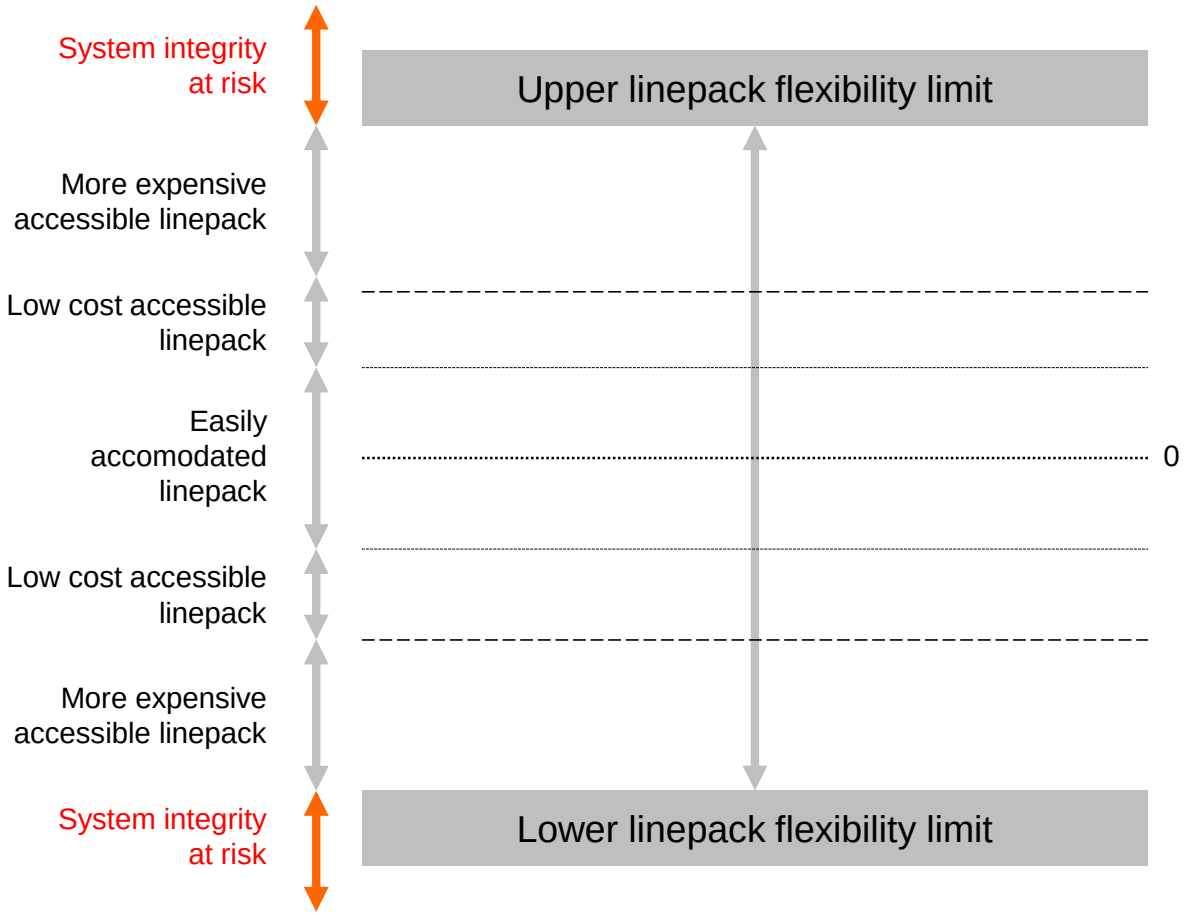


	TSO		Network User
Transparent costs	Direct “costs” of balancing interventions	+	Direct “costs” from balancing regime operation
Less transparent costs	Including behind the scenes “costs” associated with system management	+	Internalised risk management and flow management “costs”

The level of total cost, and distribution amongst actors, will depend upon regime design

sec

Network user access to system flexibility (1)

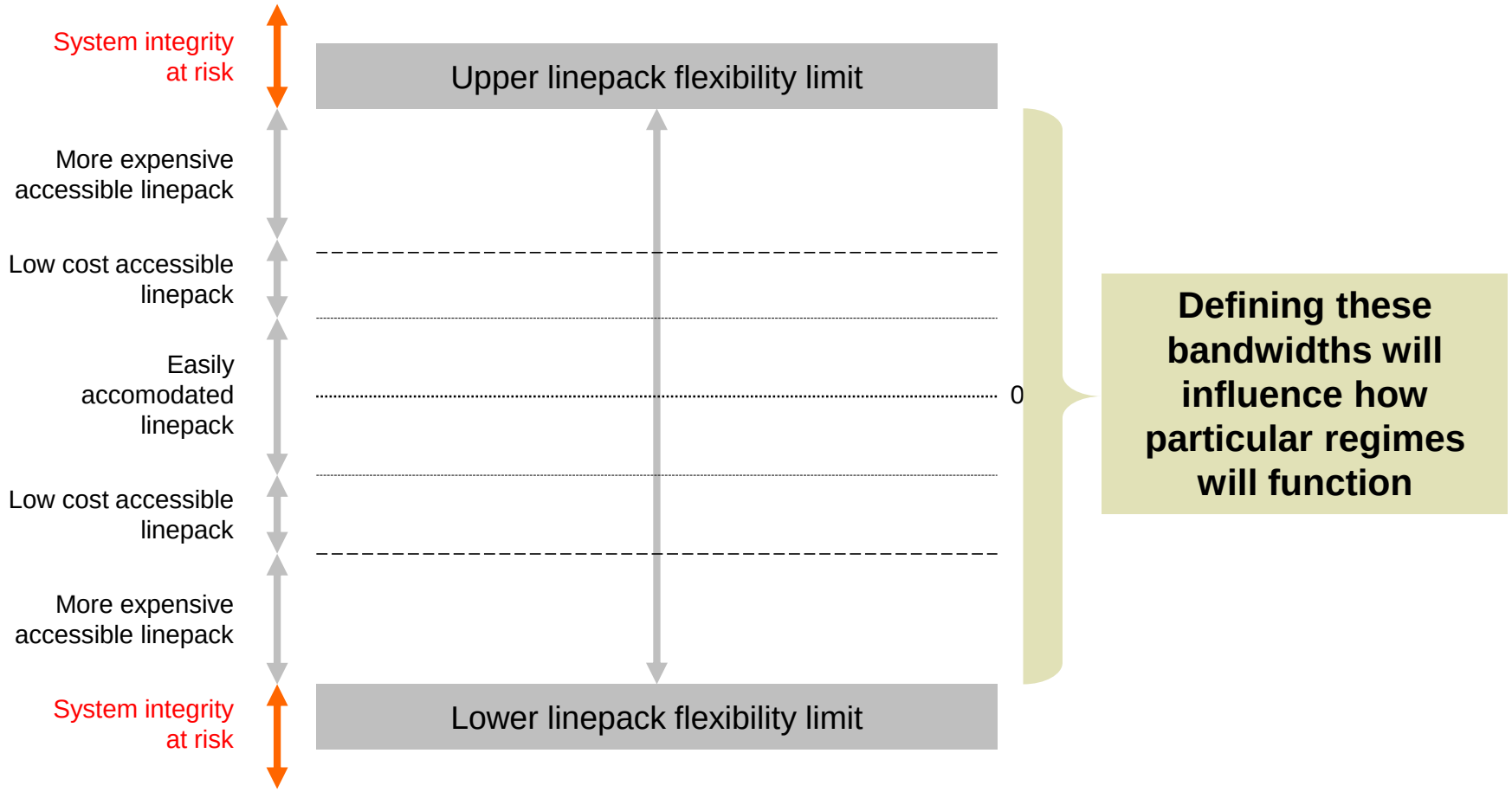


How much system access to allow to network users is a matter for operational balancing policy and/or detailed commercial rules

Simplified and illustrative view of access to linepack flexibility

sec

Network user access to system flexibility (2)



Many TSOs will only have very limited experience over the full operational flexibility of the network – transition to new commercial envelopes, where advantageous, may need careful management

Simplified and illustrative view of access to linepack flexibility

The design choice:
Daily balancing or Within Day Obligation (WDO) regimes

Daily balancing

- Preferred Code outcome
  - End-of-day balancing focuses market and trading activities
  - User friendly, easy to administer
  - Compromise on cost targeting avoiding complication of within day allocation
  - No need for costly and challenging within day allocation processes

…

but WDOs are an option where necessary to ensure system integrity and minimise TSO need to take balancing actions provided:

- The WDO poses no undue barriers to cross-border trade or market entry
- Network users have adequate information to manage exposures
- Main network user costs relate to end of day position
- Charges are cost reflective
- No within-day settlement to zero position
- Benefits of WDO in respect of economic and efficient operation outweigh any potential negative impacts, including on liquidity of trade

Functioning regimes - parameters should be kept under review

Emerging markets - design and parameter choices need care

ACER's monitoring framework for balancing

WDOs are an important component of balancing regimes and need to be assessed within ACER's market monitoring activity

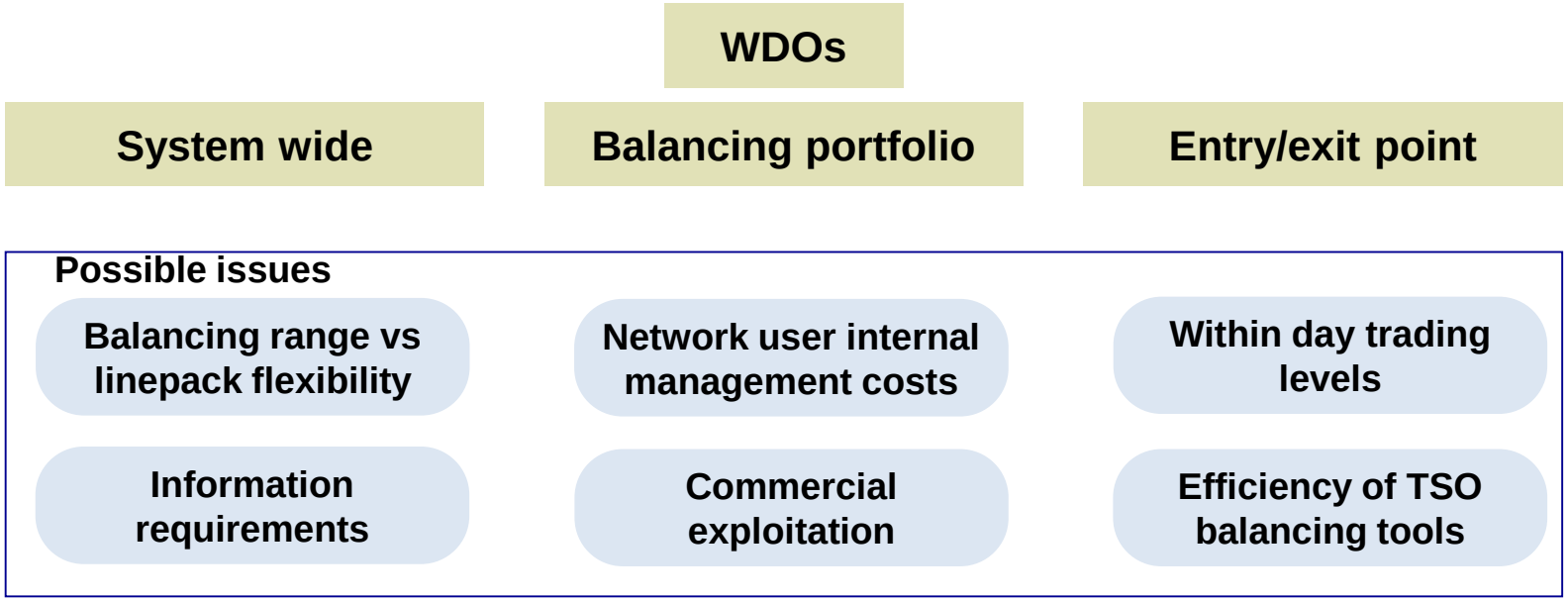
1. TSO balancing through short term standardised products vs balancing services contracts	% of total TSO balancing volume
2. TSO share of total balancing	% of total balancing volume
3. Physical linepack day-on-day changes	mcm
4. Balancing net neutrality analysis	€/MWh

… provide, with suitable background analysis and interpretation, a starting point for assessing the effectiveness of a balancing regime

Regime performance needs to be kept under review and whilst ACER's work may provide some insights TSOs/NRAs/stakeholders need to work locally to understand how individual regimes are performing

sec

WDOs – possible issues and questions for deliberation



Do WDOs hinder, or encourage, short-term wholesale market functioning?

Is simple daily balancing still preferred model?

Is there a preferred WDO design should one be necessary?

Is sufficient information available to fully assess effectiveness of (WDO) regime?

Is there merit in periodically reassessing the parameters of WDO regime

Is it feasible to migrate from WDO to a pure daily balancing regime?

WDO‘s in NL

Disclaimer

RWE Supply & Trading
Dutch

Dutch system developed in pre - NC–BAL era

Aim

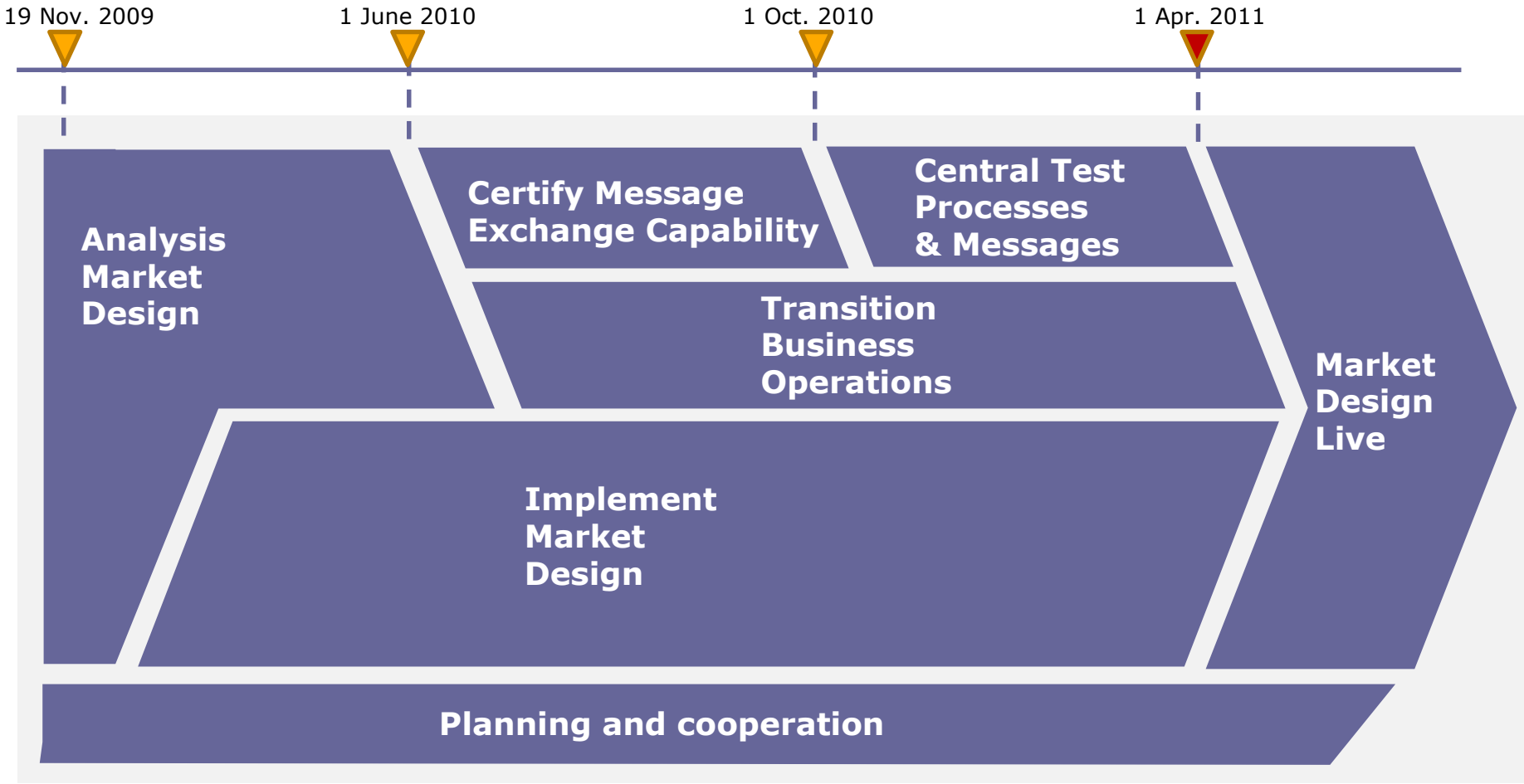
- Economic efficient balancing
  - No individual limits
- Facilitate new entrants

Conditions

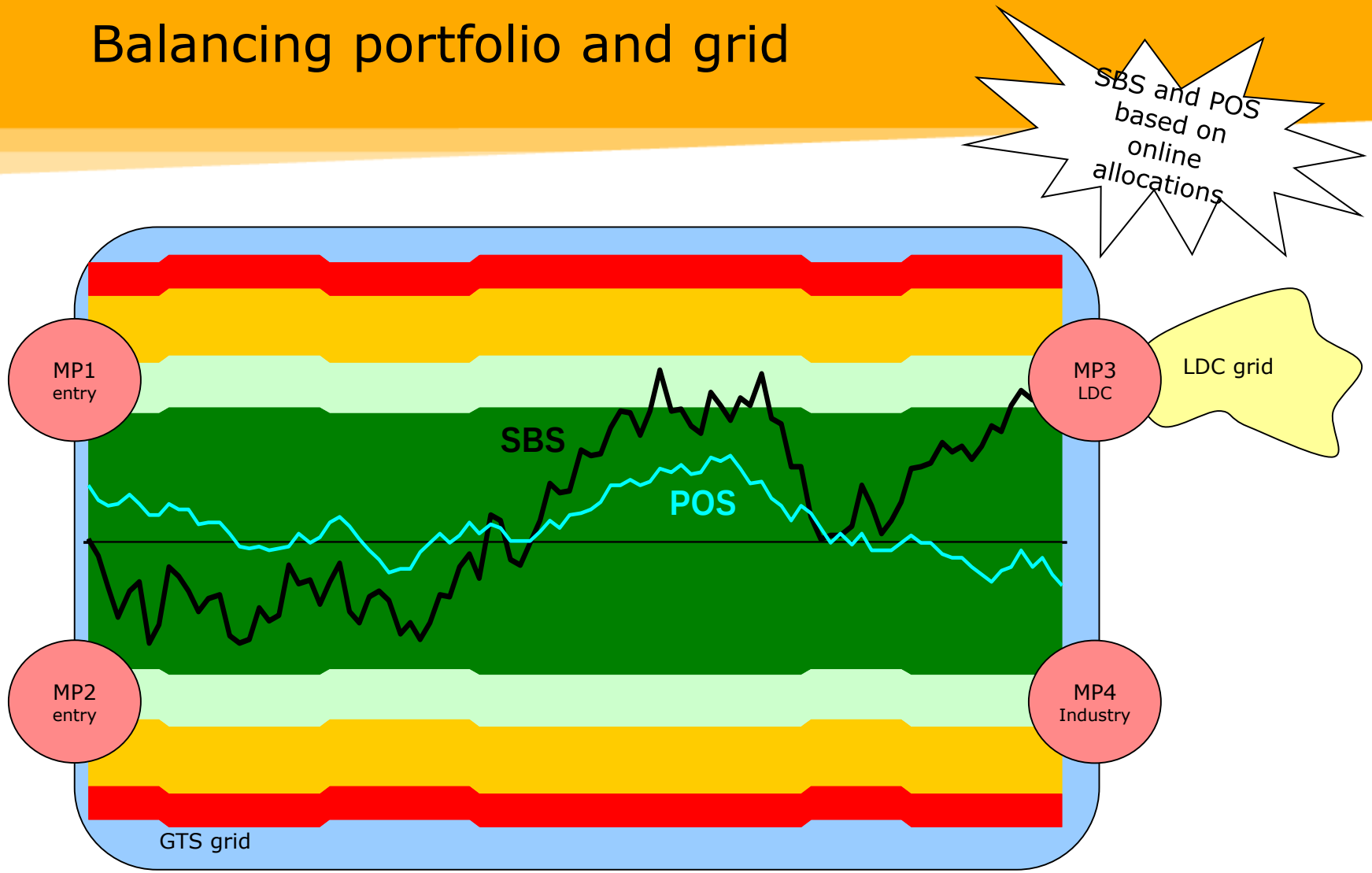
- Shippers should be incentivised to support system integrity
  - Entry needs be profiled
    - Relatively little linepack in the Dutch system
    - Relatively high volatility in demand/exit
  - Causer pay principle
- Transparent and non discriminatory regime
- Limited role for TSO: residual balancing
  - Cost neutral for the TSO
  - in case of emergency GTS instructions must be followed

Introduction

Steps to a new market model and balancing regime.



Balancing portfolio and grid



Near real time allocations: SBS and POS

- Steering signal since January 2009
- Meter reading for end users each hour
  - Obligatory for all end users taking over 1 mln. Nm3 per year
- All other end users allocated near real time based on profile

- Investments in IT for GTS, Shippers and end users

Adjustments per June 2014

- No reset helpers anymore (no carrots anymore)
  - Explicitly forbidden in NC Bal
- End of Day incentive
  - As obliged in NC Bal
- EOD products
- TSO buying selling on the exchange
  - no TSO bidladder anymore

What is market based balancing?
How to balance within day?

- In NL: market parties balancing the system physically within day
  - Consequence: market parties need to know the balance in the system and their share

- In NC Bal: TSO buying /selling to physically balance within day
  - Consequence: TSO needs a mechanism to recover costs

Dutch system wide WDO => Direct Causer Pay (DCP)

Without DCP?

- More within day liquidity?
- Would introduce a ‘pot’
  - To be filled with EOD cash outs?
- Shippers will contribute little to the pot as they have
  - the means and
  - the information

  to prevent EOD cash outs
- Whom to pick up the bill?
- Biggest shippers will probably benefit most
  - Making it more difficult for new entrants / the smaller ones

Future evolution?

- Abandon the matching of entry programs
- TSO calculating the damping
- EOD reset?
  - No need to introduce this
  - Would reduce the line pack available for the market
- Increase the LFS charge
  - What for?
  - Extra money to be given back to the market
- System wide WDO (DCP) to stay
  - System is embraced by market parties
  - Information provision is considered ‘best is class’
  - Lesson learned:

    System wide WDO with proper information provision =>

    perfect way to balance grids with to little line pack for flat entry during the day

    probably more cost efficient than a TSO buying extra flexibility
  - Lesson to be applied in less mature markets

    In monitoring the implementation of NC BAL

THANK YOU
FOR YOU ATTENTION.

POWERING. RELIABLE. FUTURE.

Balancing in the Netherlands

- System is well thought out, functions well
- Reflects physical reality (systems needs)
- Applies balancing actions (WDBA) only when necessary within predefined operational limits
- Minimal impact on shippers - incentive for end-of-day balance, no unnecessary (cash out) obligations
- Allows network users to balance the system with minimal interference of the TSO
- Allows shippers to use line pack; pooling advantages to all
- Implemented through (WD) wholesale trading markets
- Cost reflective charges
- Transparent: clear volumes; clear limits; clear timing; generally adequate near real time information

ACER workshop on WDOs
Brussels, 15 May 2017

The EFET position on within-day obligations

[redacted]

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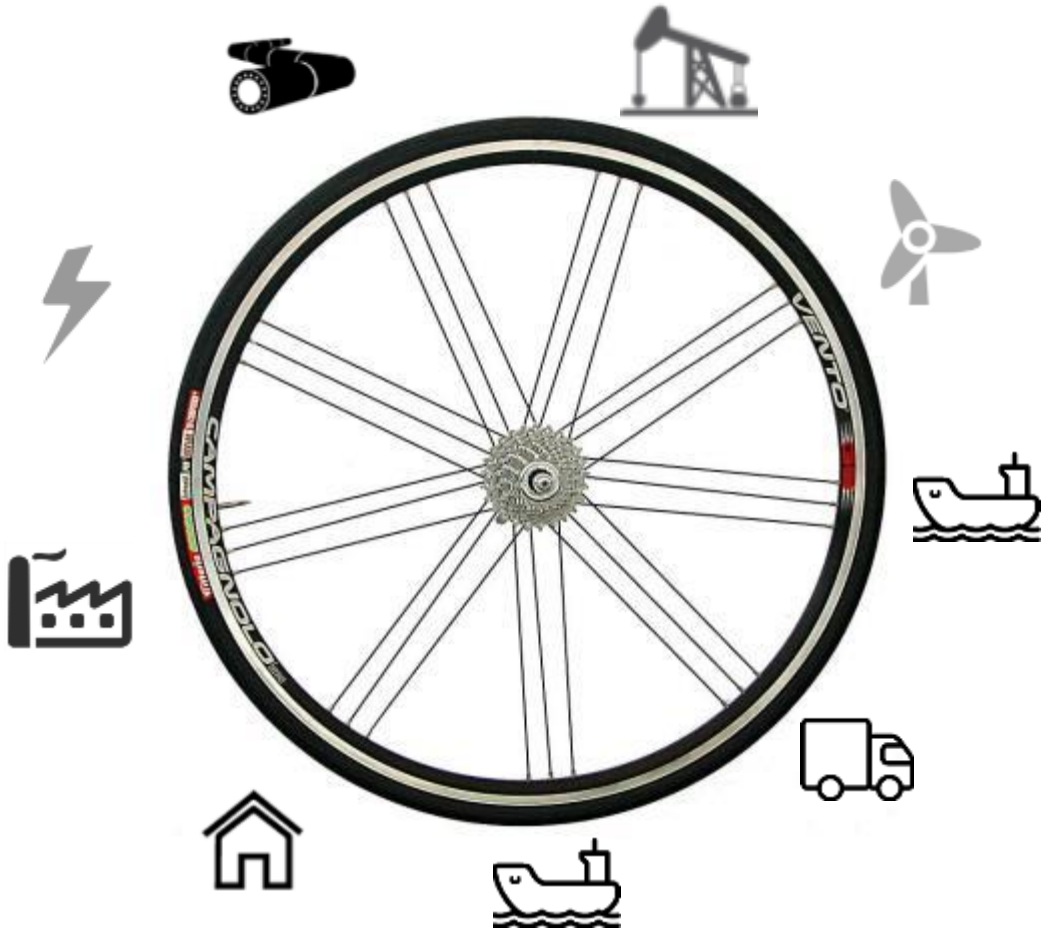
SO YOU CAN RELY ON THE MARKET

What is it that we want to achieve?



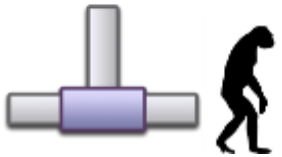
A place where gas can easily be transported to and from, and where buyers and sellers can (with minimum risk of frustration or damages) exchange it at fair prices.

Price Transparency | Risk reduction

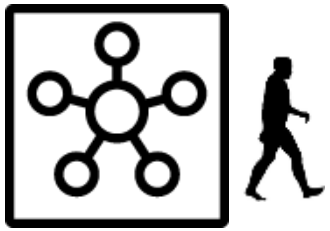
Creating a liquid hub is about securing access to flexibility at fair market prices.

- The balancing risk is the characteristic feature of gas markets: balancing demand and supply in a given period, both on system and portfolio level is what ultimately creates a market price.
- Access to pipeline flex, access to counterparties with complementary positions or sources of flexibility and – as a measure of last resort – access to a cost-reflective, non-punitive cash-out is key to a robust hub development.

Lesser-of-rule: no long/short positions due to curtailment of positions (flange trading).



Back-up-back-down-service: one capable shipper offering residual balancing services (physical hubs as Zeebrugge, Baumgarten)



Imbalance trading with end-of-day cash-out of long/short positions (virtual trading)

pdb vs. wdo

Ease of operation attracts players, players generate liquidity: EFET supports pure daily balancing.

1. The target model is pure daily balancing.
2. Within-day obligations might be a necessary evil to avoid excessive costs.
3. A TSO must demonstrate that no. 2 applies to its case.

In case wdos are needed to avoid excessive costs:
The code is surprisingly clear on what it expects.

Article 26 (2) - Requirements for within day obligations

(b) a within day obligation shall only be applied where the network users are provided with adequate information before a potential within day charge is applied regarding their inputs and/or off-takes and have reasonable means to respond to manage their exposure;

secretariat@efet.org
www.efet.org

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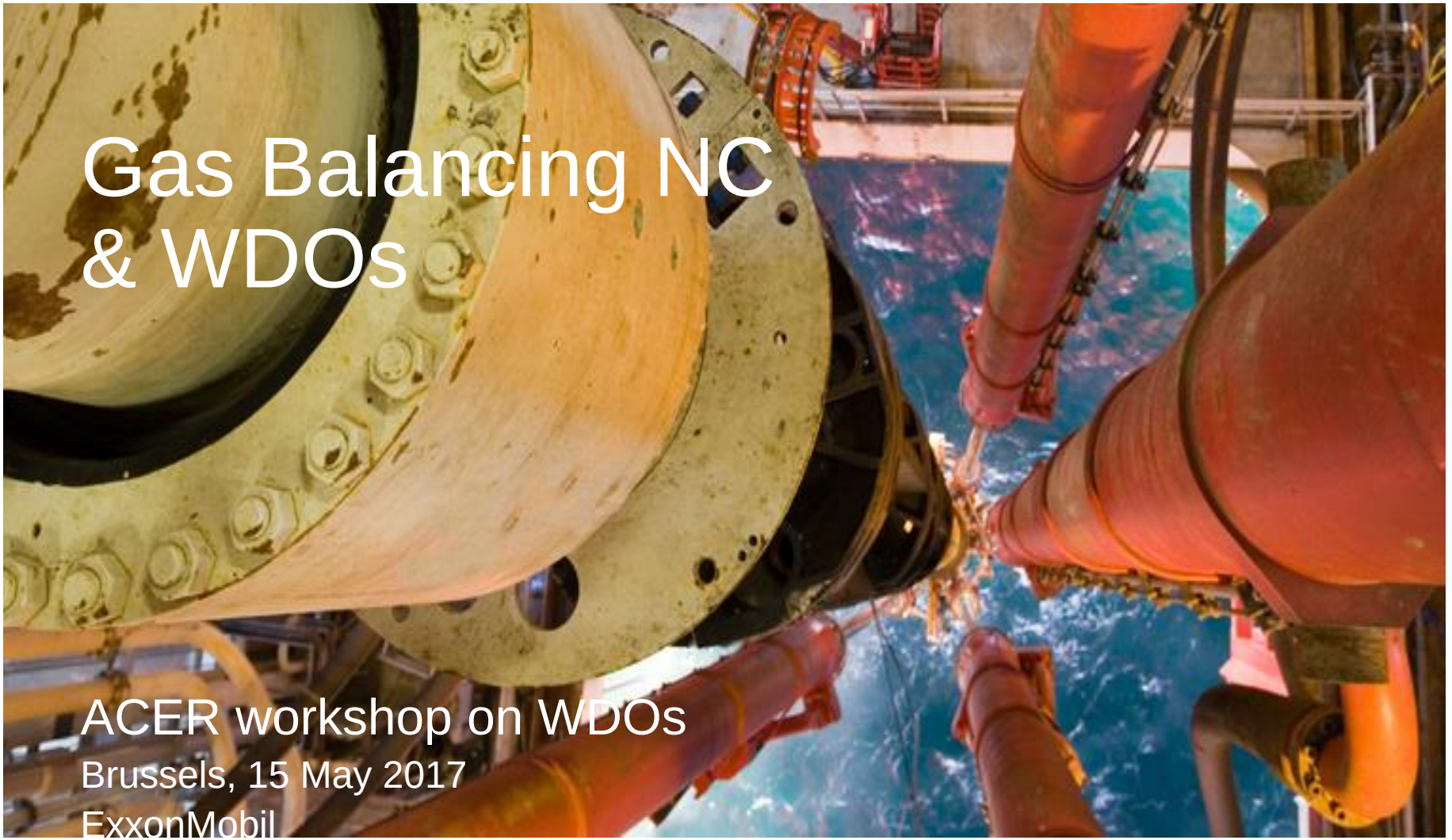
International Association of Oil & Gas Producers



Gas Balancing NC & WDOs

ACER workshop on WDOs

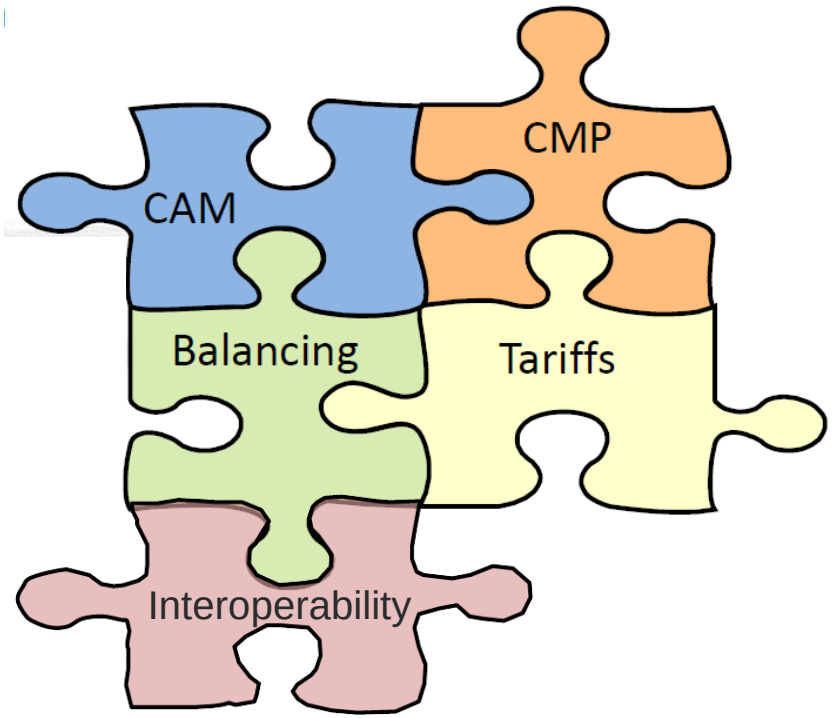
Brussels, 15 May 2017

ExxonMobil

International Association of Oil & Gas Producers

Network code development

- IOGP has supported development of network codes as instruments to promote market integration and facilitate cross-border trade
  - Official ENTSOG process started back in January 2011
  - Stakeholder engagement was important/essential
- Gas Balancing NC is to work together with NC CAM, Tariff NC and NC on Interoperability and Data exchange
- Implementation effort is essential to achieve NC objectives
  - NC compliance alone may not be sufficient



Gas Balancing NC

- Objectives: promote market integration and facilitate cross-border flow
  - Balancing rules should not act as barrier for new entrants

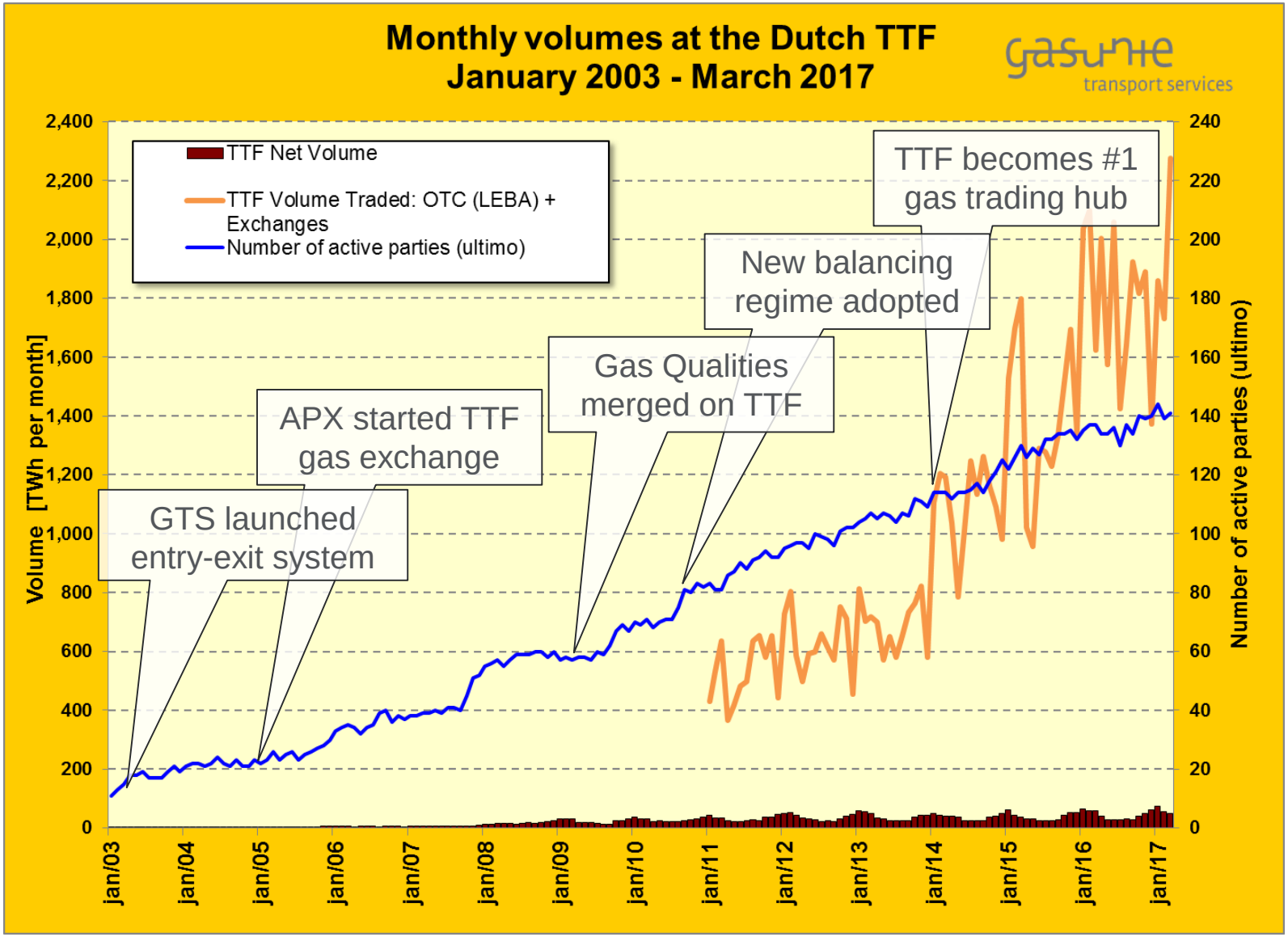
- Key areas that need to be addressed:
  - Information access
  - Standard product
  - Access to transmission capacity and flexibility
  - Cost allocation that is fair and predictable

- Gas Balancing NC provides guidance in all these areas
  - Information obligations of TSOs towards the network users
  - Daily balancing with harmonized Gas Day across the EU
  - Harmonised nomination rules compatible with NC CAM
  - Maximise utilisation of short term wholesale gas market
  - Neutrality arrangements and cost-reflective imbalance charges

Balancing trade-offs

- Balancing period versus granularity of information
  - WDOs require near real time flow information, as well as short (re-)nomination lead times
- Operational balancing rules versus frequency of TSO interventions
  - WDOs could reduce need for balancing interventions
- Response to price signals versus market liquidity
  - WDOs can be used to trigger network users' response
- IOGP has always been cautious about provisions on WDOs
  - But we acknowledge that systems are different across the EU
    - Differences in demand profiling, system line pack, metering facilities, gas storage and LNG facilities, gas quality
  - One size does not fit all

Example: Netherlands 2003-2017



source: website Gasunie Transport Services

Conclusions

- Goal of the Gas Balancing NC is to promote a liquid (EU wide) gas wholesale market
  - Focus should be on areas where this has not been achieved already

- Efficient implementation of the NC should take into account specific system characteristics
  - There are several examples in the EU that have been tested
  - Gas Balancing should not be seen in isolation; it is possible that cross-border flows and interoperability need priority
  - Implementation monitoring is not simply checking all the boxes

- Evolution of both NBP and TTF has shown that market development takes time
  - Balancing NC invites TSOs to give operational control over their system (partly) to market participants
  - Network users need to build trust in the market and so do TSOs