Bundesnetzagentur

Case Study - Germany

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Agenda

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   - 2.3 Imbalance Charges
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   - 2.5 Neutrality Arrangements
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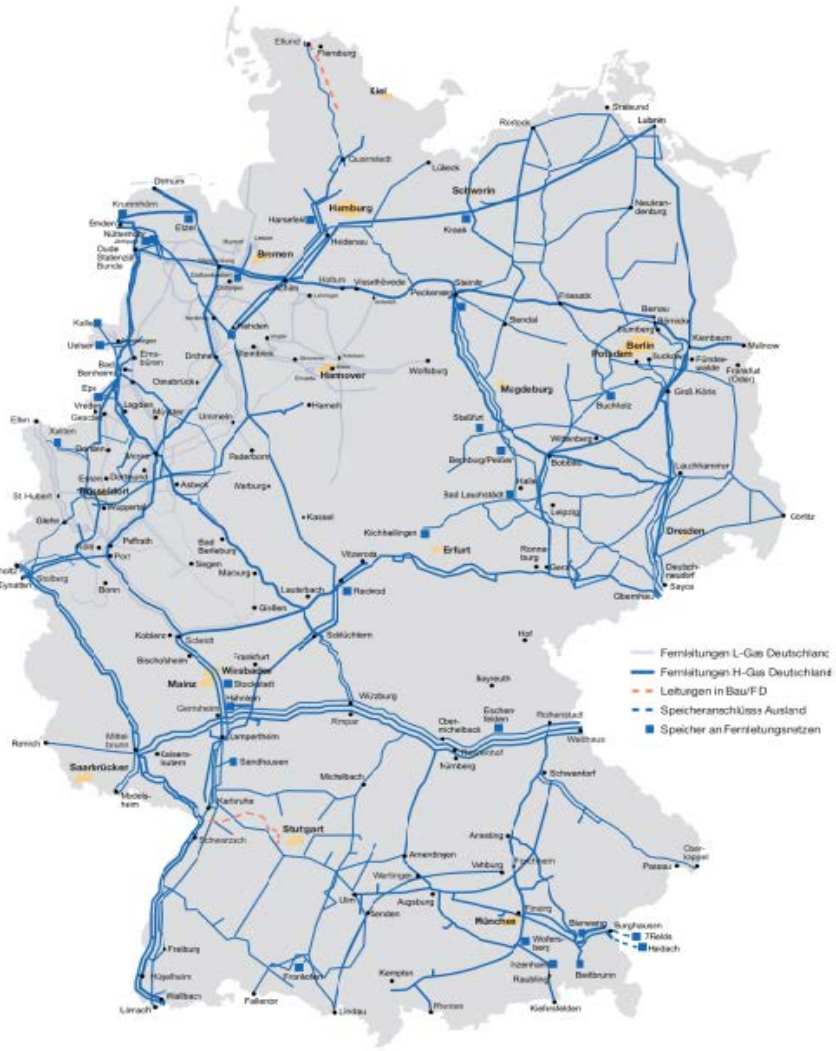
1. German gas market fundamentals

The transmission system

High calorific gas



Low calorific gas

Source: German TSOs

Basic facts

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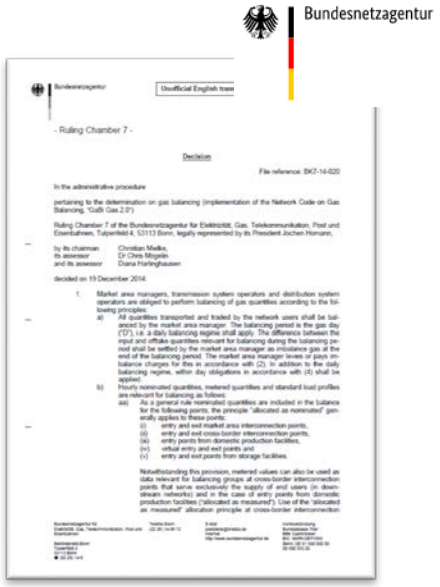
- 16 TSO; >500 DSO
- 2 Market Area Managers (MAM)
- 2 cross quality entry-exit systems = balancing zones
- >300 active shippers
- 2016 stats:
  - Imports: 1.626 TWh
    (Russia 28%; Norway19%; NL16%)*
  - Exports: 770 TWh
    (CZ 46%; NL 18%; SUI 12%)*
  - Consumption: >850 TWh

* BNetzA Monitoring Report 2017

Balancing – Regulatory Framework

Commission Regulation (EU) No 312/2014 (NC Balancing)

- Implementation of all NC BAL provisions as of **01.10.2015**
- Adaption of several provisions of then applicable BNetzA Ruling GaBi Gas 1.0 (valid from October 2008)
  - Information provision
  - Balancing charges
  - Reporting obligations
  - etc.



Ruling GaBi Gas 2.0

2.1 Information Provision

2.1 Information Provision: NC BAL

- To allow the shippers **to balance their portfolios**, information regarding their inputs and off-takes has to be provided
- **Allocation** information is provided in order to calculate daily imbalance quantity
  - Reconciliation is out of scope
- **Three types of offtakes**
  - intraday metered (IDM)
  - daily metered (DM)
  - non daily metered (NDM)
- One of three **information models** for NDM to be applied per balancing zone
  - base case, variant 1, variant 2

2.1 Information Provision: NC BAL

	day ahead	within day	after the day
intra day metered	N/A	measured flows at least twice per day	meter reading
daily metered 	N/A	N/A except variant 1: apportionment of measured flows at least twice per day	meter reading
non daily metered			
base case	forecast	forecast at least twice per day	final forecast
variant 1	N/A	apportionment of measured flows at least twice per day	N/A
variant 2	forecast	N/A	N/A

2.1 Information Provision: GaBi 2.0

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variant 2	forecast	N/A	N/A

IDM information provision GaBi 2.0

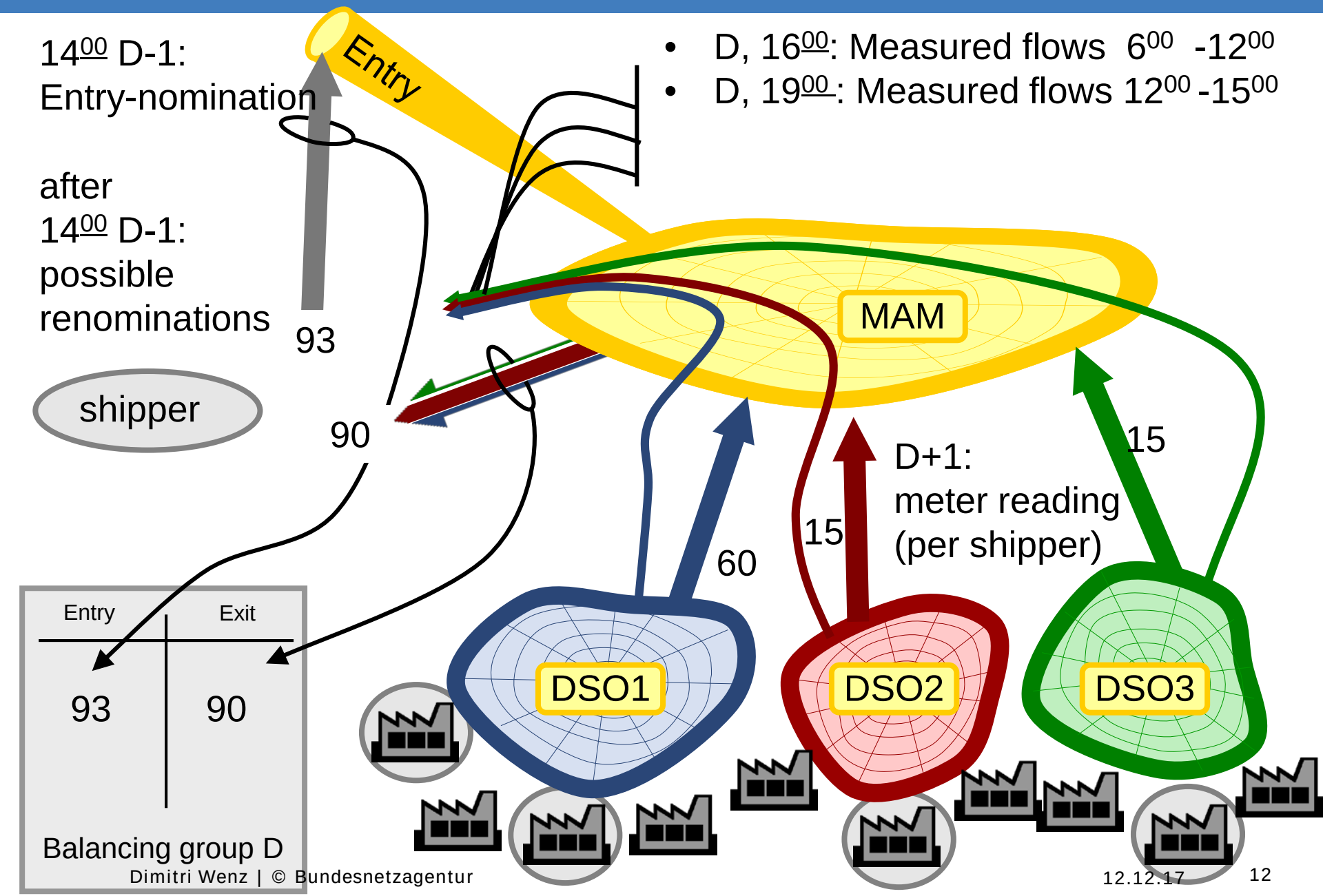
	day ahead	within day	after the day
intra day metered 	N/A	measured flows at least twice per day	meter reading

⇨ $16^{\underline{00}}$ first provision: Measured flows from 6^{00} to 12^{00}

$19^{\underline{00}}$ second provision: Measured flows from 12^{00} to 15^{00}

- flows from 6^{00} to 12^{00} included in second provision

Example :Intraday metered



- D, 16^{00}: Measured flows 6^{00} -12^{00}
- D, 19^{00}: Measured flows 12^{00} -15^{00}

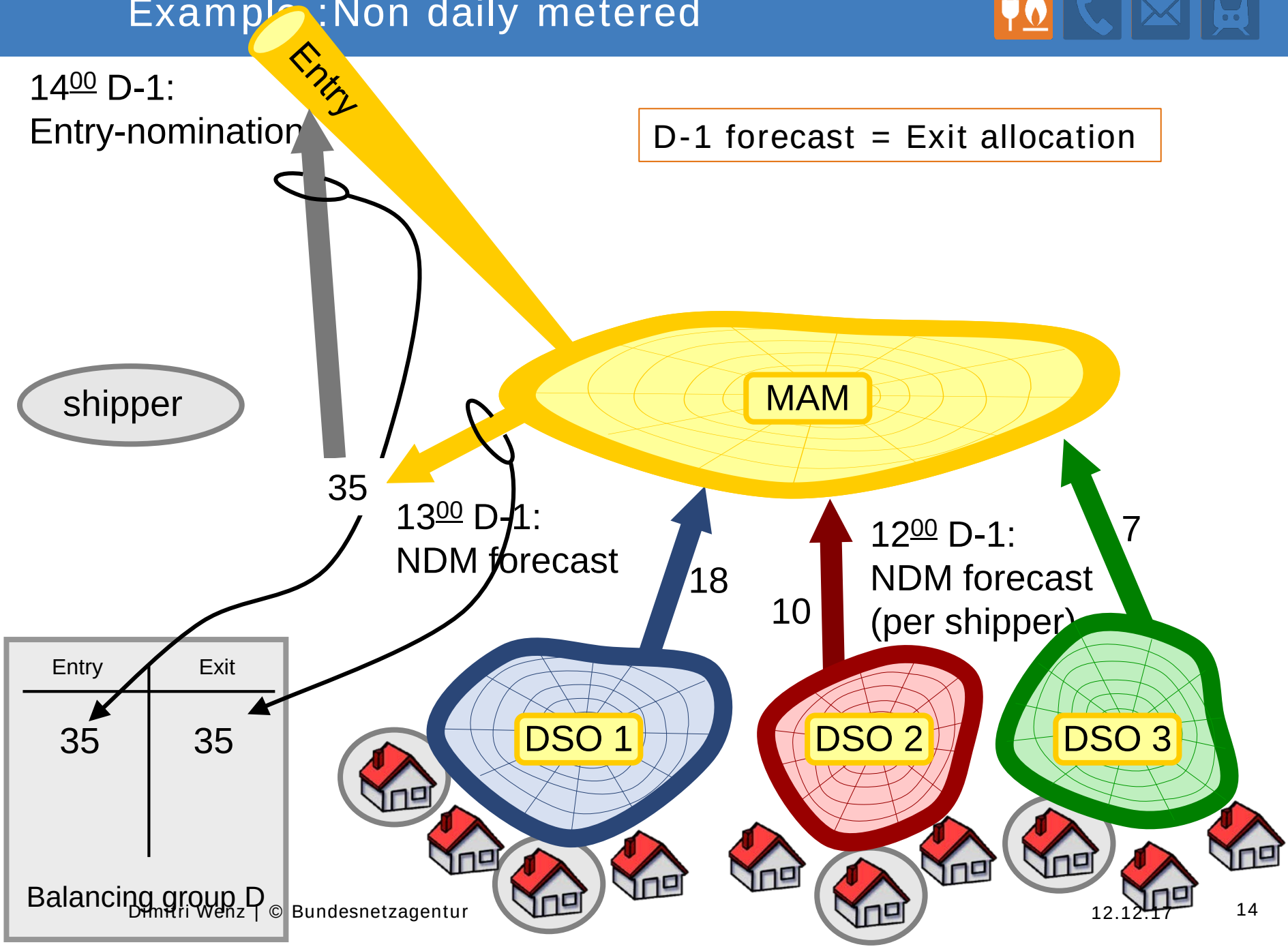
NDM information provision GaBi 2.0

	day ahead	within day	after the day
intra day metered 	forecast	N/A	N/A

⇨ $12^{\underline{00}}$: DSO (forecasting party) provide forecast to MAM

$13^{\underline{00}}$: MAM provides aggregated forecast to shippers

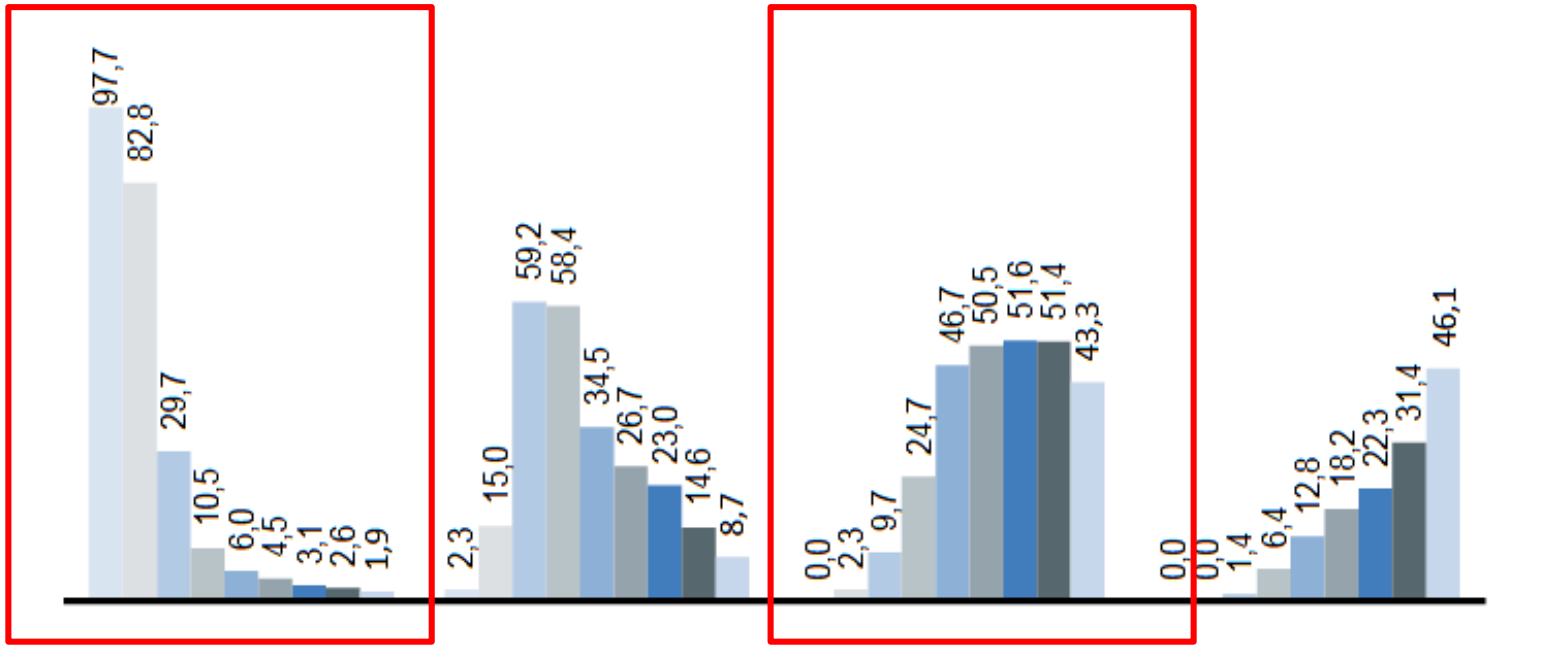
Example: Non daily metered



Variant 2 promotes retail competition…

Breakdown of network areas by number of suppliers operating

(These figures (%) do not take account of company affiliations)

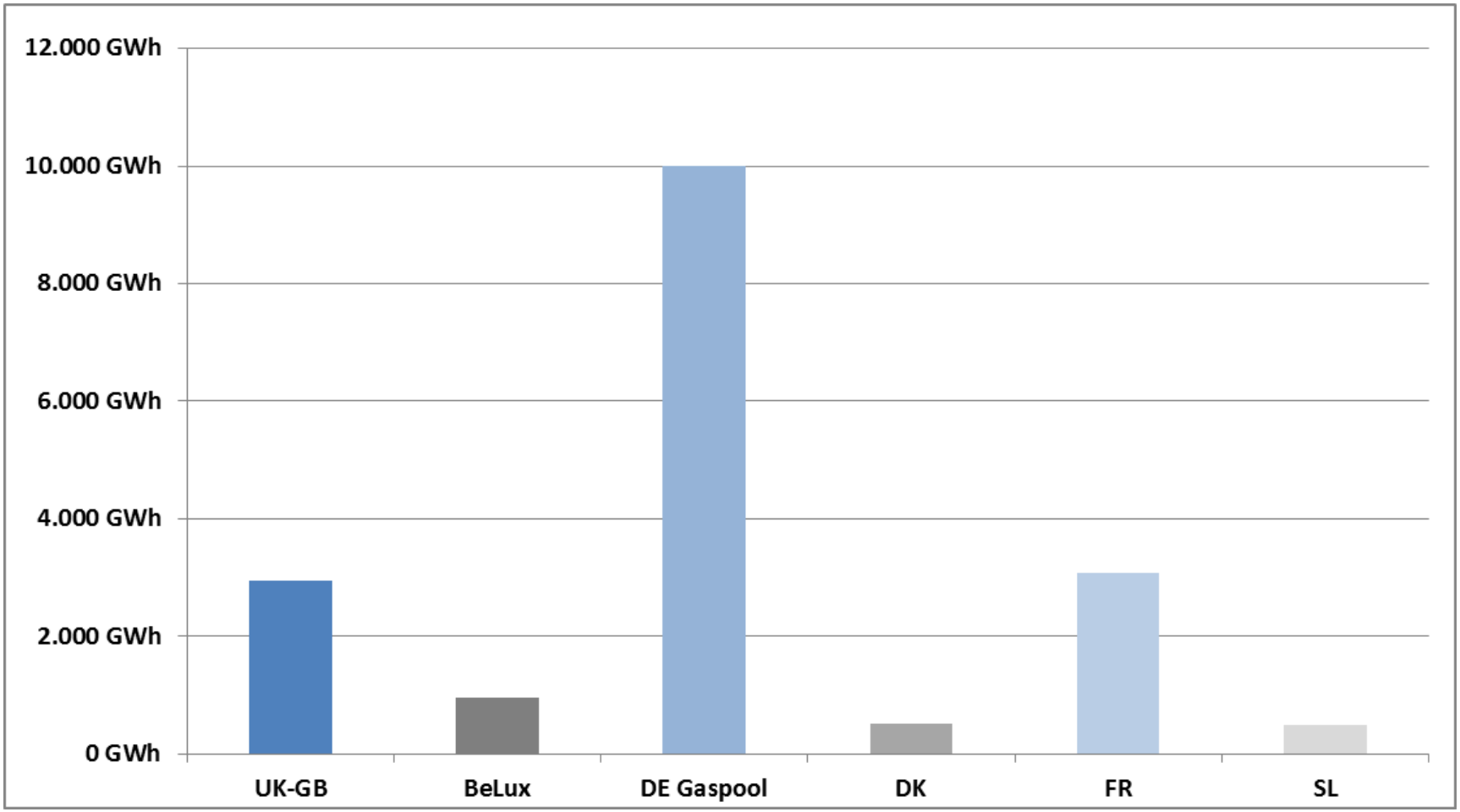


Source: Bundesnetzagentur, Monitoring Report 2017

2008 2009 2010 2011 2012 2013 2014 2015 2016

... but also requires balancing actions

Total Balancing Action Quantities GY 15/16



Data source: ACER
Own calculations

2.2 Operational Balancing

TSO is undertaking balancing actions

in order to:

- maintain the transmission network within its **operational limits**;
- achieve an end of day **linepack position** in the transmission network different from the one anticipated on the basis of expected inputs and off-takes for that gas day, consistent with economic and efficient operation of the transmission network.

through:

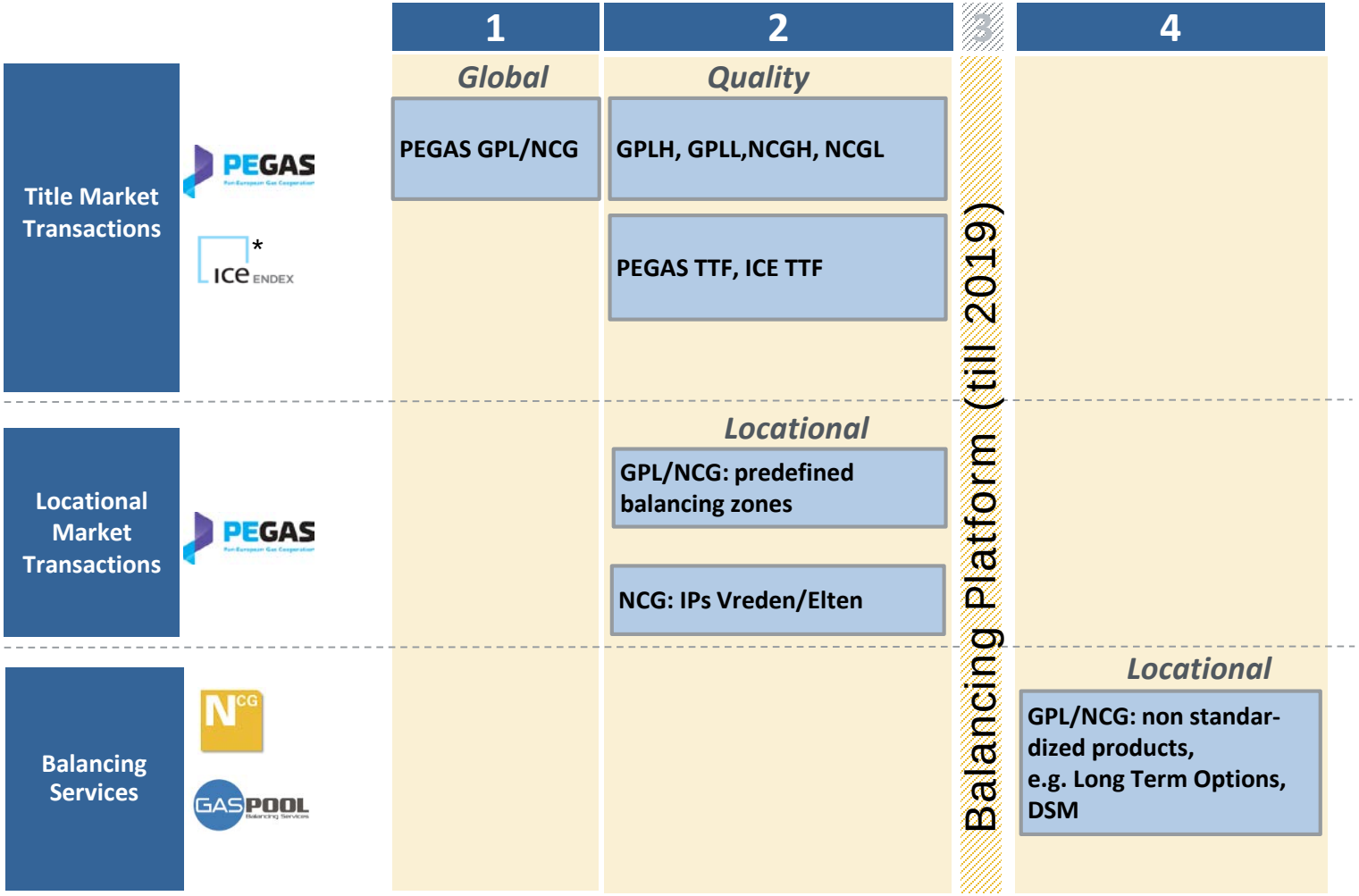
- purchase and sale of **short term standardised products** on a trading platform
- the use of balancing services.

Two step approach

1. MAMs are obliged to meet an existing need for balancing gas **initially** through the use of **internal balancing gas** (in particular linepack).

2. If the use of internal balancing gas is not expedient or **not sufficient** to meet demand, MAMs shall procure and use **external balancing gas**
   - MAM to apply strict MOL

Balancing Gas – Merit Order List



Source: Gaspool, NCG

* NCG only

2.3 Imbalance Charges

II. Imbalance Charges: NC BAL

Daily Imbalance Charge =

daily imbalance quantity x marginal buy/sell price

daily imbalance quantity = inputs – off-takes

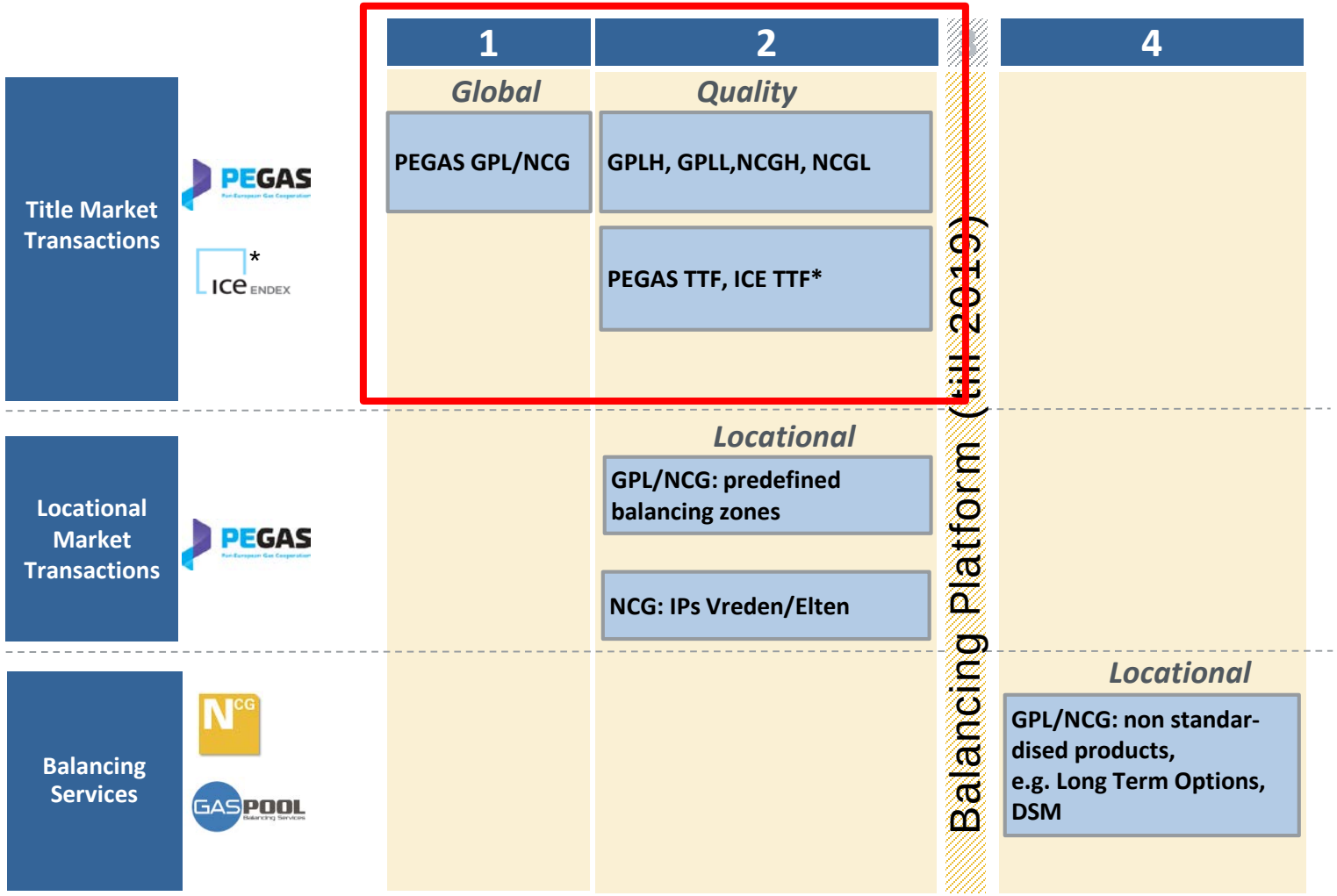
marginal buy price is the higher of:

- the highest price of any purchases of title products in which the transmission system operator is involved in respect of the gas day; or
- the weighted average price of gas in respect of that gas day, plus a small adjustment.

marginal sell price is the lower of:

- the lowest price of any sale of title products in which the transmission system operator is involved in respect of the gas day; or
- the weighted average price of gas in respect of that gas day, minus a small adjustment.

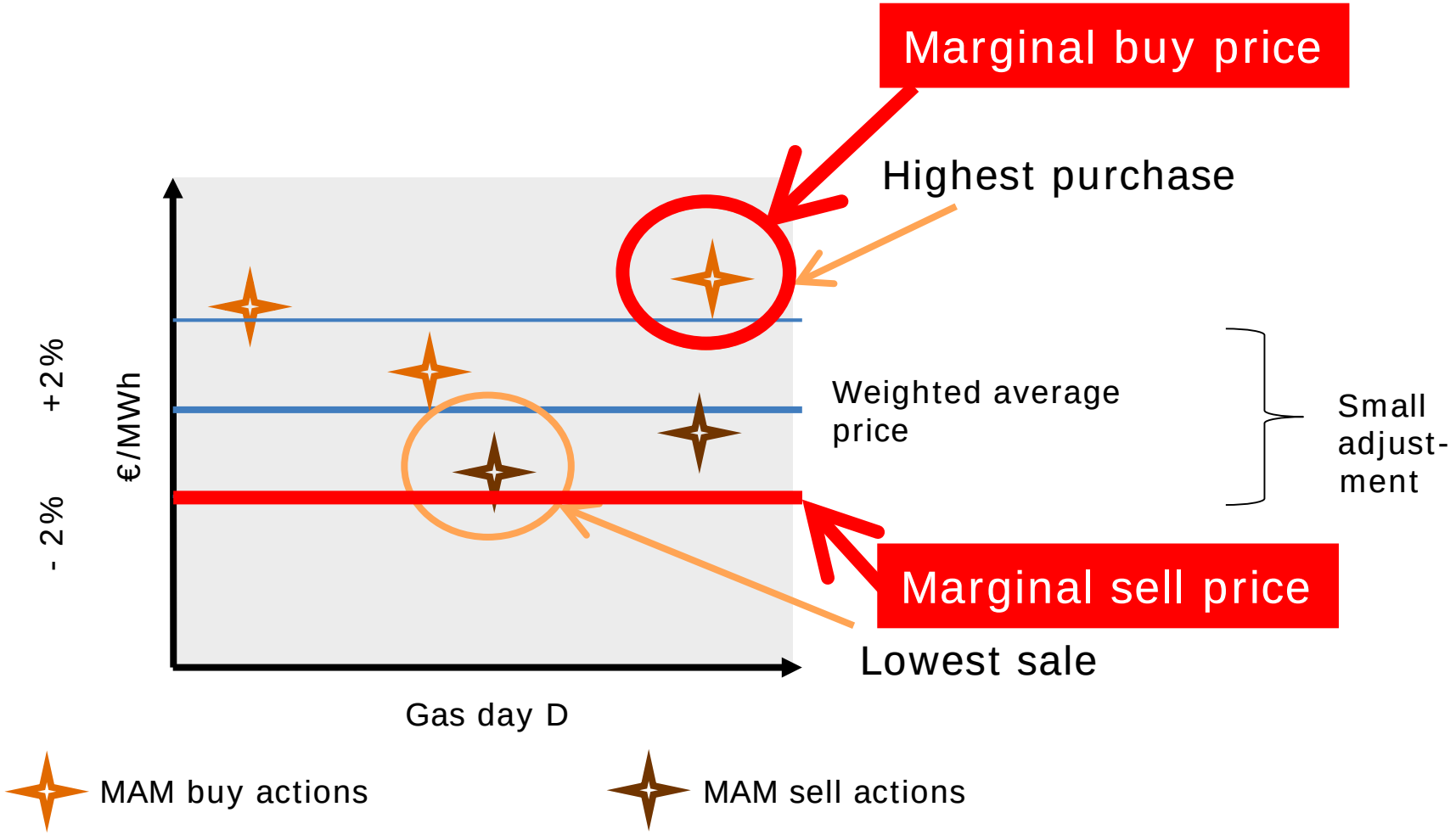
II. Imbalance Charges: GaBi 2.0



Source: Gaspool, NCG

small adjustment = +/- 2%

II. Imbalance Charges: GaBi 2.0



2.4 Within-Day-Obligations

III: Within-Day-Obligations: NC BAL

Within day obligations are

- a set of rules imposed by a TSO on its shippers with regard to their inputs and off-takes within the gas day

TSOs are entitled to apply WDOs

- in view of **ensuring** the **system integrity** of its transmission network and
- **minimising** its need to undertake **balancing actions**.

III: Within-Day-Obligations: NC BAL

Within day obligations can be applied to

- **the system position**
  - to keep the system within certain limits
- **a shipper´s position**
  - to keep it within a certain range
- **specific entry-exit points**
  - to limit flows or flow variations (e.g. ramp rates)

III: Within-Day-Obligations: GaBi 2.0

German approach aims to strike a balance between TSO/system requirements and shipper´s needs

TSO

- Ensure system integrity at any time
- Balancing gas availability
- Incentives for *appropriate shipper behavior* within day
- Minimise balancing actions
- Cost recovery

Shipper

- No (trade) limitations within day
- Sufficient information provision
- Access to flexibility
- No cross subsidisation

III: Within-Day-Obligations: GaBi 2.0

Key features of the German WD incentive regime:

- Within day charges only apply if MAM has to **buy and sell** balancing gas on MOL1 on the respective gas day and MAM faces **costs** from this balancing actions
- Within day tolerance for **Intraday Metered offtakes** (7,5 % with regard to the daily offtake)
- Cost reflective within day charge
- The daily balancing regime is not affected by the WD regime
  - no end of day tolerance!

- IPs
- Storage
- Production
- VTP

Allocation = nomination

No forecast risk for shippers > No need for a tolerance

- NDM

Allocation = D-1 forecast

- IDM

Allocation = Measured flows

forecast risk for shippers remains> WD tolerance provided

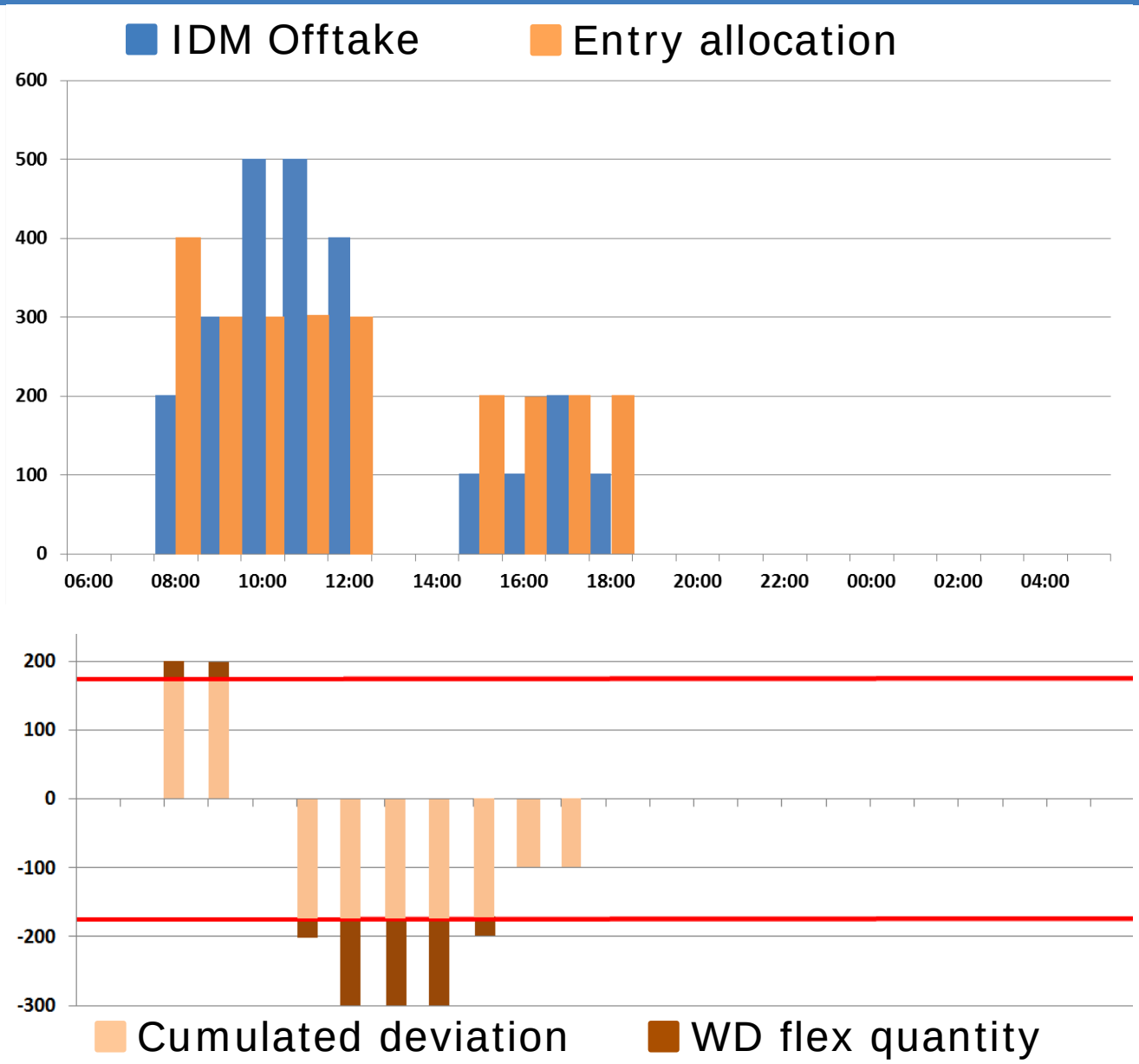
III: Within-Day-Obligations: GaBi 2.0

- IDM Offtake = Entry 2.400

➡ Tolerance

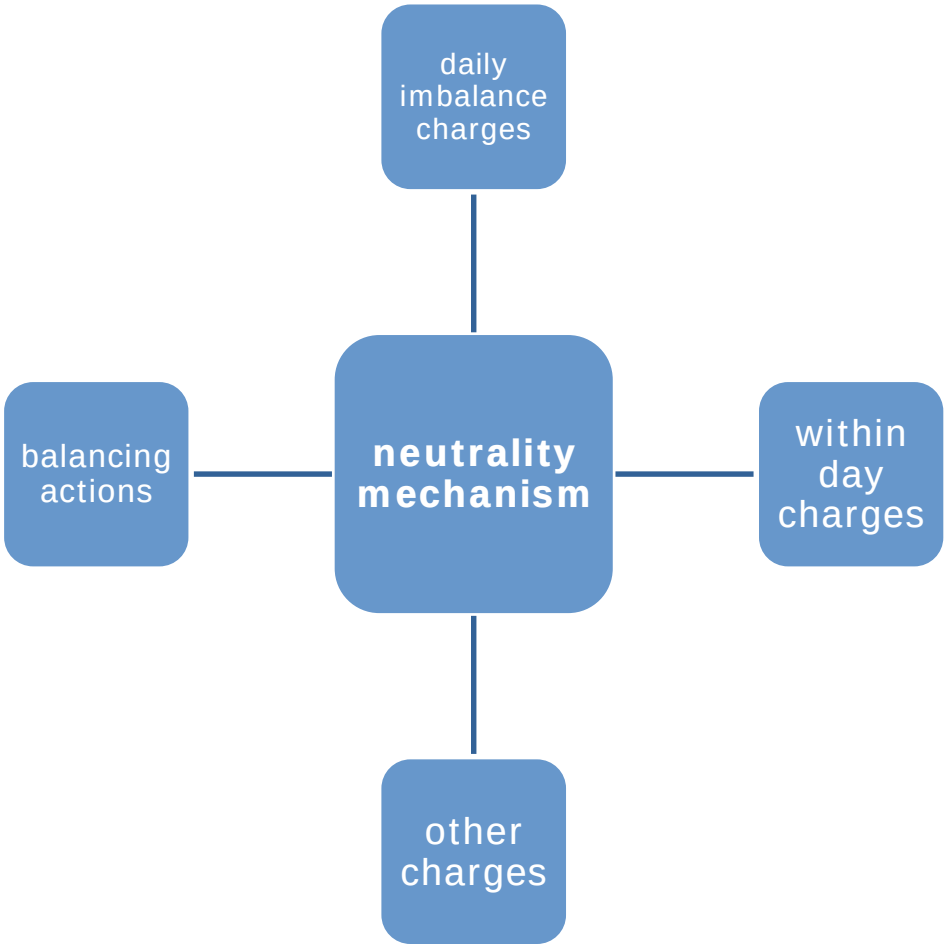
- 2400 * 7,5% =180

- Volumes beyond tolerance will be charged if MAM will buy and sell balancing gas during the day and will face costs from that balancing actions



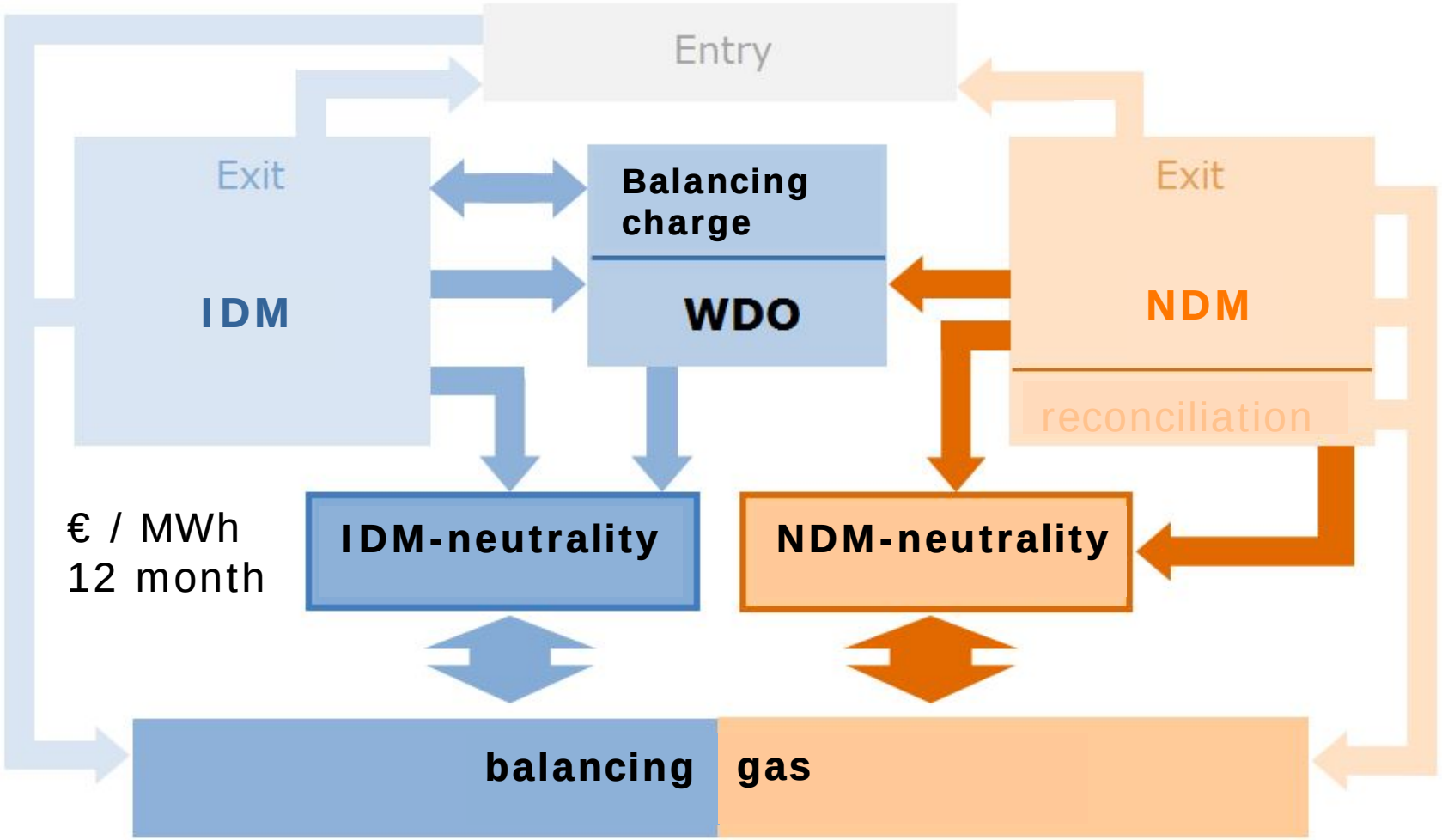
2.5 Neutrality Arrangements

Neutrality Mechanism: NC BAL



- NC BAL identifies four financial streams
- TSO / MAM must remain cost neutral
- TSO / MAM might apply usage-dependent neutrality charge
- If „variant 2“ applies, separate neutrality charge for NDM to be implemented

Neutrality Mechanism: GaBi 2.0



3. Summary

- Provisions of NC BAL fully implemented as of October 2015 in Germany (Ruling GaBi. 2.0)
- NC BAL provides some leeway for Regulators to develop national balancing rules
  - Information provision
  - Within-day-obligations
  - Short term standardised products
  - Balancing charges calculation
  - ...
- Variant 2 information model can act as a driver for retail competition and foster market liquidity

- GaBi Gas 2.0: https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1BK-Geschaeftszeichen-Datenbank/BK7-GZ/2014/2014_0001bis0999/2014_001bis099/BK7-14-0020_BKV/BK7-14-020_Beschluss_englisch.pdf?__blob=publicationFile&v=3 (English version)
- Best practice guidelines on the use of standard load profiles for demand estimation purposes ("*Leitfaden Abwicklung von Standardlastprofilen*"): https://www.bdew.de/internet.nsf/id/ABEAHK-3-leitfaeden-de/$file/160630_Leitfaden_Abwicklung_von_Standardlastprofilen_Gas.pdf (German version)

Thank you for your attention!

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