

ACER



Agency for the Cooperation
of Energy Regulators



GAS BALANCING: THE SECOND ACER REPORT ON CODE IMPLEMENTATION

Network Codes Team, Gas Department

- **EFFECTIVENESS AND LEGAL COMPLIANCE** - What is the role of Implementation Monitoring?
- **OUR OPINION**: That Article 9(1) of the Gas Regulation foresaw to check effectiveness. In the case of Balancing this is key, given the complexity of the design that shall be implemented:
 - The application of **inconsistent rules would hinder an effective application**.
 - The check of **mere legal compliance check** sheds less understanding about the balancing regimes in the EU and provides **limited learning**.
 - A critical and standardised view over important elements of the regime should allow for an open debate that leads to improvements or the evolution of the rules.

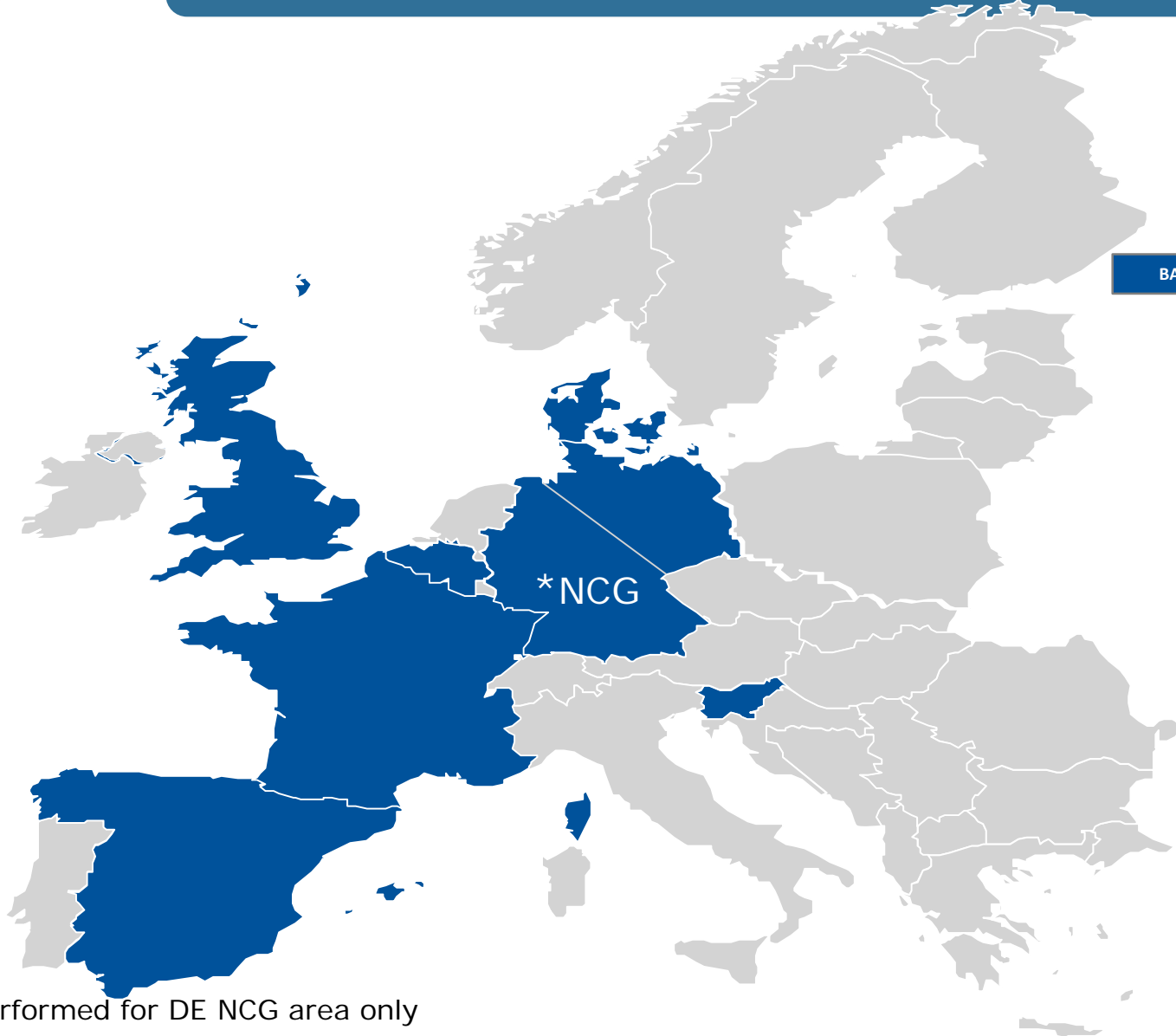
THE FIRST (2016) REPORT,

- covered a wide range of critical design elements of balancing implementation
- and found major differences in the extent to which different Member States had implemented the Code.
- Proposed to monitor the progress in each country and called for improved knowledge sharing and dialogue across EU.

THE SECOND (2017) REPORT,

- the Agency developed a ***Balancing Analytical Framework*** to measure regime performance - to which **extent balancing regimes are functioning effectively**, given the local circumstances.
- the *Framework* derives several indicators and charts illustrating the functioning of individual regimes, and compares them -> **to assess whether and if so, how, balancing regimes could evolve.**
- **7 selected balancing zones**: National Grid Group (UK-GB), the H-Cal Zone Fluxys (BeLux), NCG (Germany), Energinet.dk (Denmark), GRTgaz Nord (France), Plinovodi (Slovenia) and Enagas (Spain).
- **enhanced the qualitative assessment review for 26 EU balancing zones.**

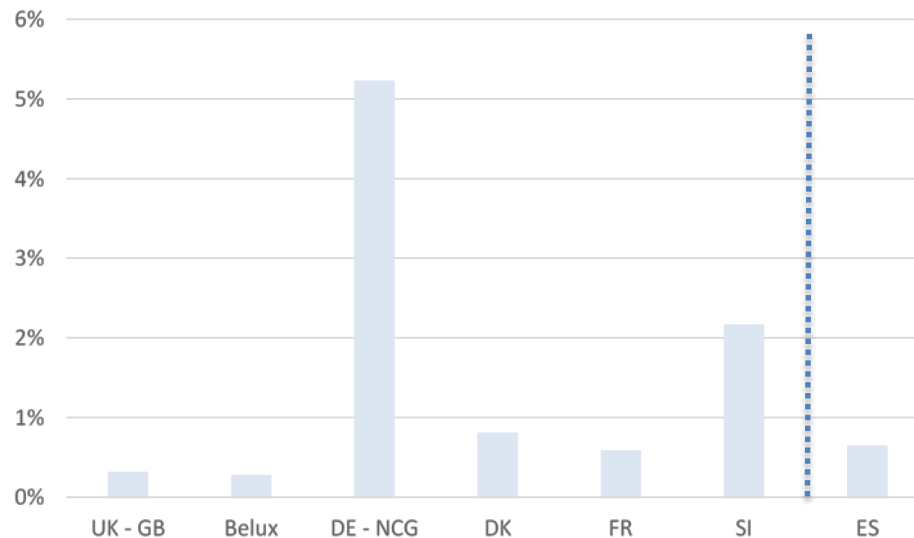
- **SECOND REPORT* DIVES DEEP IN EFFECTS ANALYSIS.**
- It introduces the *BALANCING ANALYTICAL FRAMEWORK* to provide a framework for *EFFECTIVE BALANCING REGIME COMPARISON (+INDIV. REGIME PERFORMANCE)*.
 - Daily data has been collected covering:
 - TSO Balancing Actions;
 - Network Users' Imbalances;
 - Volumes of daily Opening Linepack, where available.
 - Based on this data, we calculated:
 - Neutrality quantities, cashflows and net positions;
 - & compared, where possible, Linepack changes against Cumulated Commercial Imbalance Position changes.
- **WE EXPLORED THE POSSIBLE MEANING OF THE DATA/INDICATORS:**
 - Giving a review of the *NATIONAL REGIMES* and through a *CROSS-REGIONAL COMPARISON*.
 - The framework *DOES NOT DETERMINE A PREFERRED DESIGN*; rather it analyses and reflects on the outcomes the regimes deliver.



* Analysis performed for DE NCG area only

- **Definition:** TSO/MAM balancing actions mean that the TSO is buying or selling on behalf of the system (System Buys & System Sells).
- Considerations: to measure whether TSO is a residual player
 - contributor data to the neutrality energy transactions.

Total Balancing Action Quantities (% of zone entry quantities, GY 2015/16)

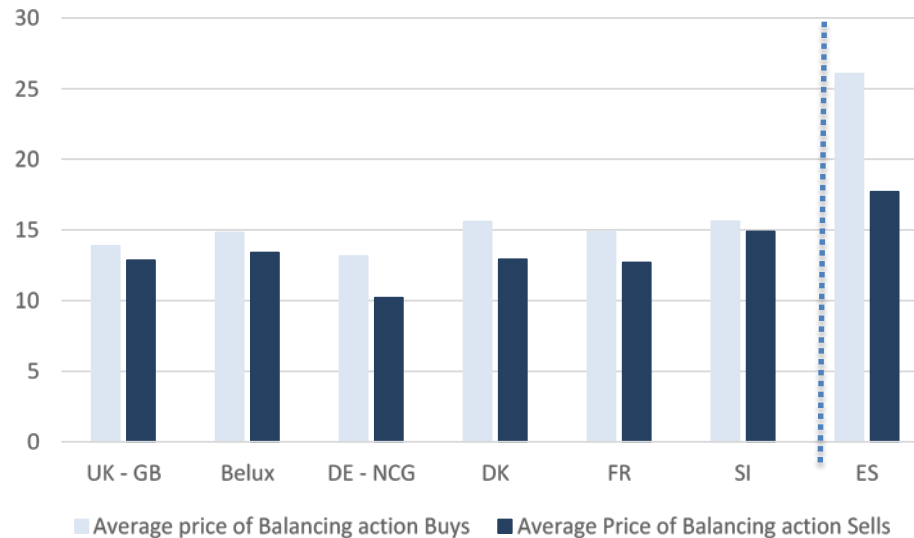


Source: ACER

* Data for Spain refer to a later and shorter period (1 Oct 2016 – 31 Mar 2017) therefore the values in the table are not directly comparable.

- **Definition:** TSO/MAM Buy and Sell Prices.
- Considerations: from modest to considerable differences
 - Contributes to the costs the balancing regime generates;
 - Completes the picture on whether the TSO plays a residual role.

Figure 7-4: Average Prices of Balancing action Buys and Sells (EUR/MWh, GY 2015/16)

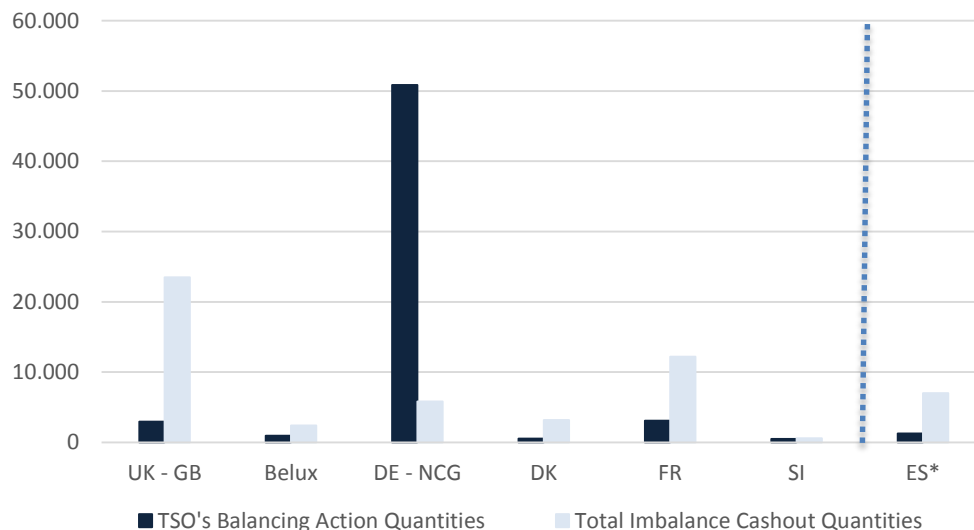


Source: ACER

* Data for Spain refer to a later and shorter period (1 Oct 2016 – 31 Mar 2017) therefore the values in the table are not directly comparable.

- Network users are tasked primarily to keep the system balanced on a daily basis, by being balanced individually at the end of the Gas Day ('GD').
- If the operational safety is in danger, the TSO acts as a residual player and buys gas for a short system or sells gas if the system is long.

Figure 7-5: Total TSO's balancing actions and Network Users' Imbalances (GWh, GY 2015/16)



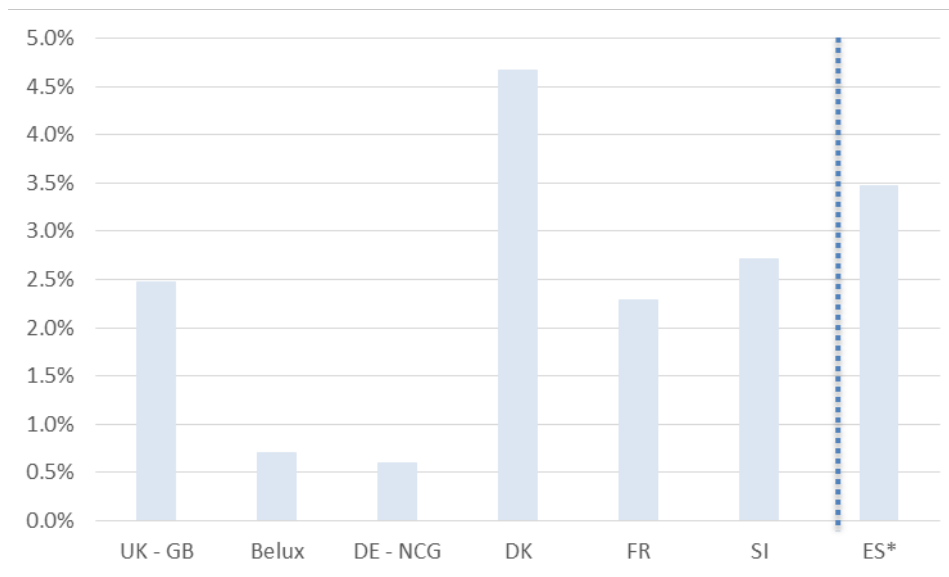
Source: ACER

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- **Definition:** The difference between each network user's injections into and withdrawals from the transmission network, plus the net gas exchanged at the VTP, defines the network user's imbalance.
- Considerations: The individual network users' imbalances are not publicly available. The Report analyses their aggregated behaviour.
 - Network Users' Imbalances contribute to the neutrality energy transactions, cumulated over the period of analysis: Network User Imbalances Long & Short Positions.
 - The end-of-day Imbalance Short Positions to indicate whether there is any bias (systemic bias) in their behaviours.
 - Spread of Short and Long Prices may give an indication of the strength of the incentive to achieve balance (large differentials).
 - Comparisons across countries and indicators put in perspective against each other.
- What is important that the market is convinced that the TSO is playing a residual role and prices reasonably incentivise balancing.

- At the end of the GD, if a network user injected less gas than it has withdrawn, it is cashed out for the missing gas at the marginal buy price.
- At the end of the GD, if a network user injected more gas than it withdrew, it is cashed out for the excess gas at the marginal sell price.

Figure 7-6: Total Imbalance Cash-out Quantities (% of zone entry quantities, GY 2015/16)

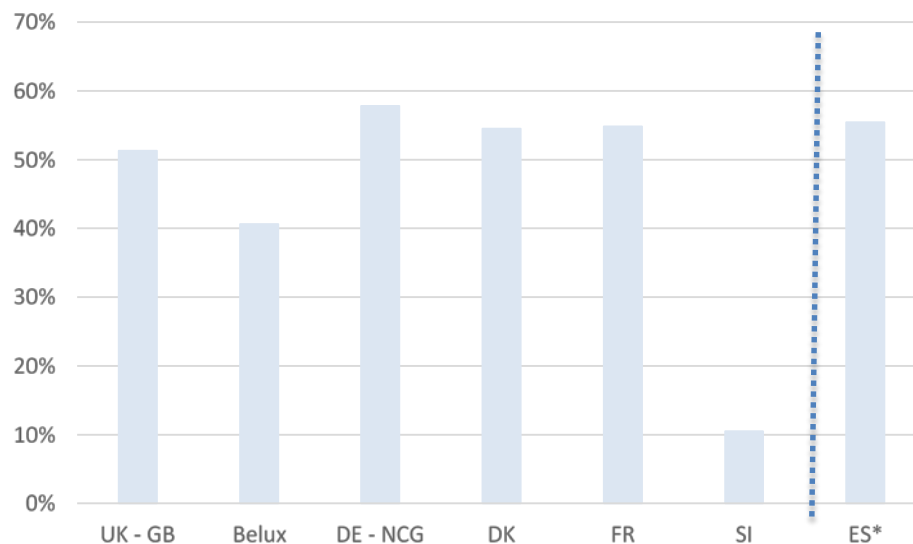


Source: ACER

* Data for Spain refer to a later and shorter period (1 Oct 2016 – 31 Mar 2017) therefore the values in the table are not directly comparable.

- Slovenia stands out as a regime, where a high proportion of network user’s cash-out quantity arise from an over-delivered position.

Percentage of Total Network Users' Buy Quantities (of all Cash-Out Imbalance Quantities, GY 2015/16)

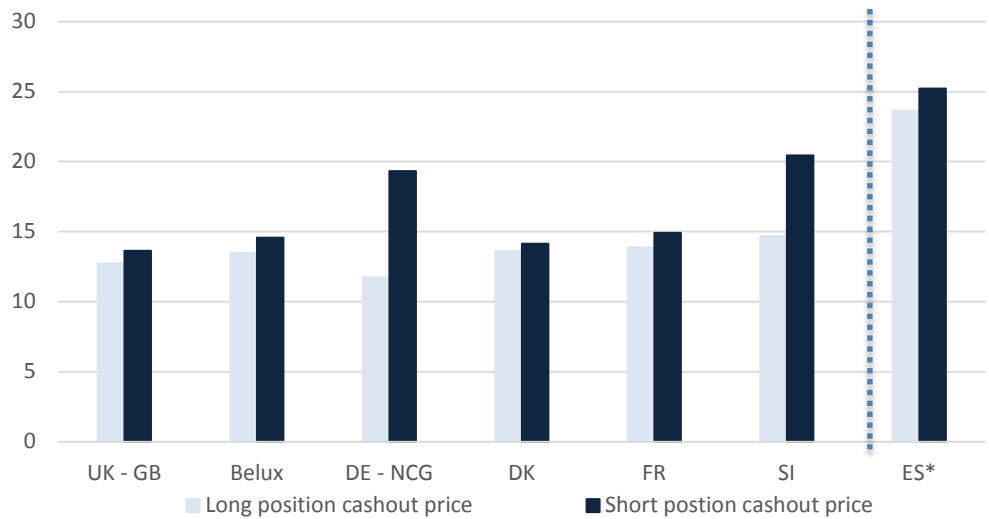


Source: ACER

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- several countries have average price differentials just above 1 EUR/MWh (2 exceptions).
- wide variations may warrant investigation and explanation - on how widely differing average imbalance costs contribute to a well-functioning regime?

Figure 7-8: Network Users' Imbalance Cash-out average prices (EUR/MWh, GY 2015/16)



Source: ACER

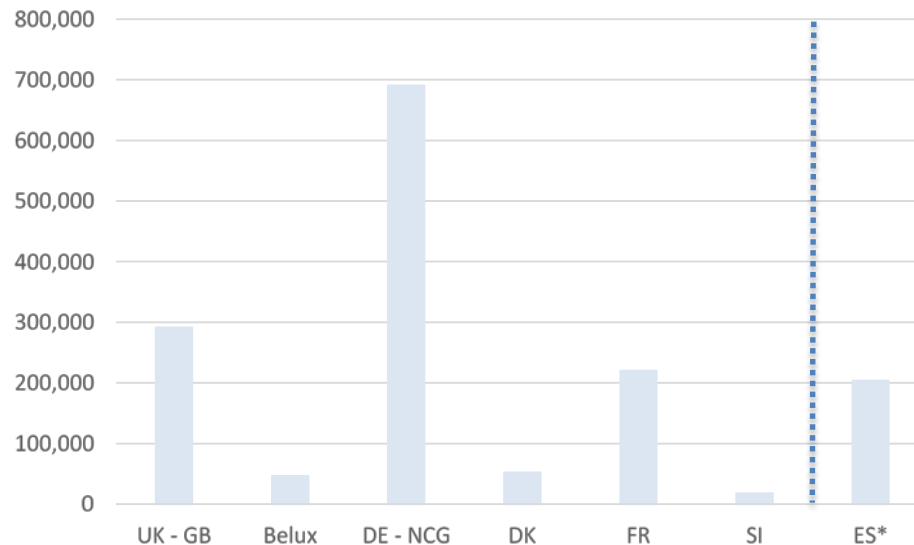
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- **Debate:** Is it sufficient that the TSO is neutral? How could the specific provisions of Articles 29 and 30 be adopted at national level?
- Our opinion is: to deliver objectively on the neutrality the following play a role:
 - The neutrality cashflows are not split and users are charged in the same way.
 - The charges are not targeted back at imbalances. There is a reason for this: net costs/revenues cannot be precisely debited/credited back to individual users, therefore should be redistributed over a large tax/credit base to avoid any distortions.
 - Neutrality is charged separately, so users know how much it costs. Explanations for the costs and revenues are appropriately given. Relevant data publication on neutrality is aligned with charging the users (no less than once/ month).
- What is important that the market is convinced that the TSO is neutral and that charges/revenues are applied uniformly to network users using the above principles.

(The cash-out price being the only incentive applied.)

- The Neutrality account gets money when the TSO is selling gas to the system (when *system short*) and from the network users' short positions that are cashed out.
- The Neutrality account pays money when TSO is buying gas from the system (when *system long*) and from the network users' long positions that are cashed out.

Absolute sum of cashflows (thousand EUR, GY 2015/16)

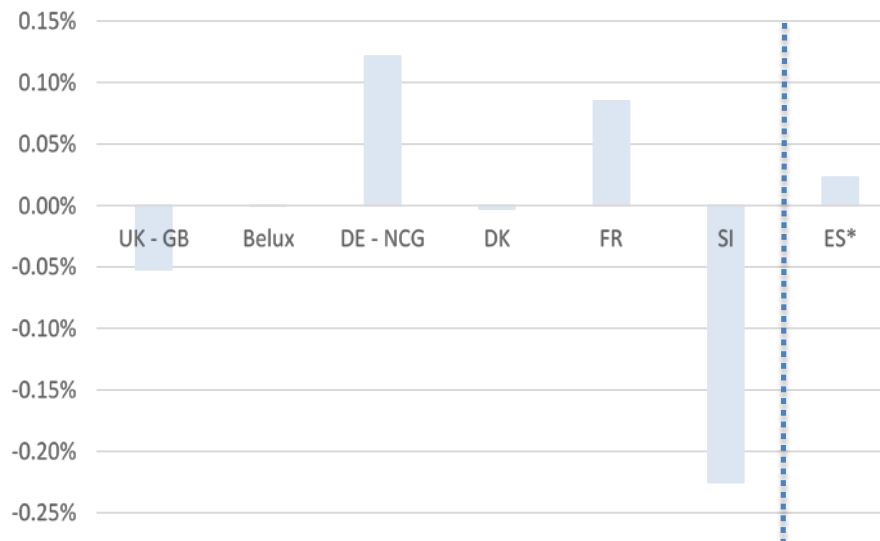


Source: ACER

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- Another way to look at neutrality cash flows is netting the balances for the payments explained above.
- **Three types** of net positions could be calculated:
 - (1) **net energy** stands for the net effects on the gas quantity/volumes from the 4 types of transactions (SEE THE SLIDE BEFORE ON THE 4 COMMERCIAL TRANSACTION TYPES)

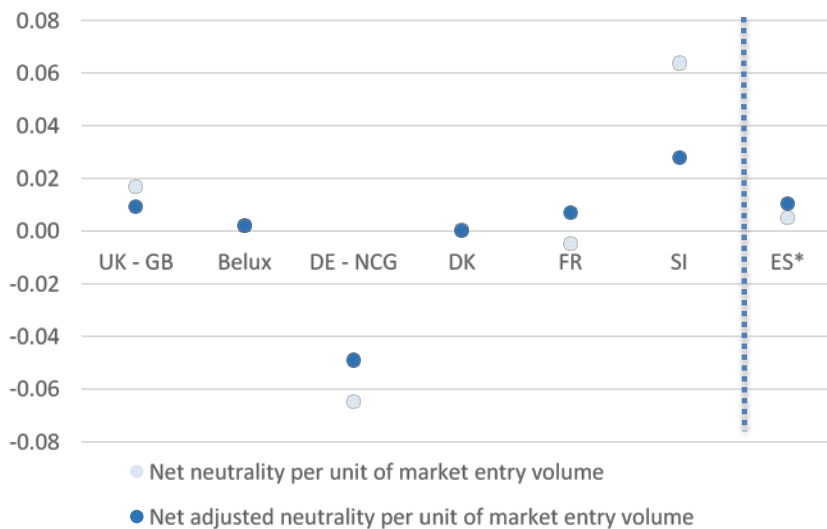
Figure 7-11: Statistic 2 - Net energy position (% of market entry volume, GY 2015-16)



Source: ACER

- (2) **net financial neutrality** (LIGHT BLUE DOT): shows the net sum of cashflows represented by revenues – costs being part of neutrality.
- (3) **net adjusted (financial) neutrality** (DARK BLUE DOT): shows neutrality volume neutral, and attributes financial value only to the unmatched (separate) purchased (or sold) volumes.

Net financial and net financial adjusted neutrality per unit of market volume (EUR/MWh, GY 2015/16)



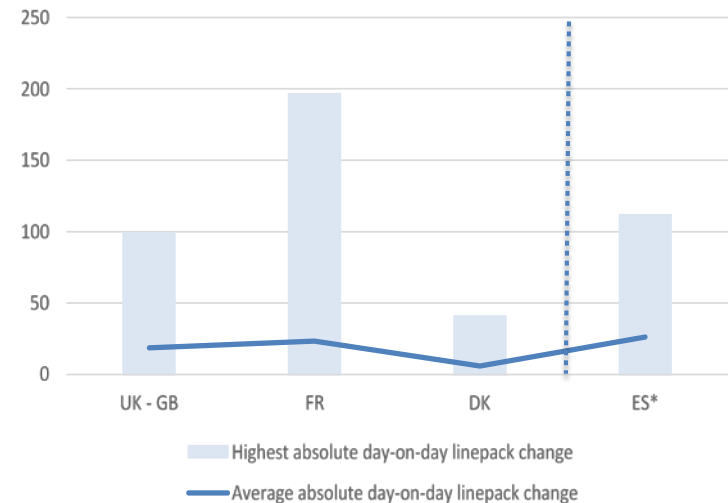
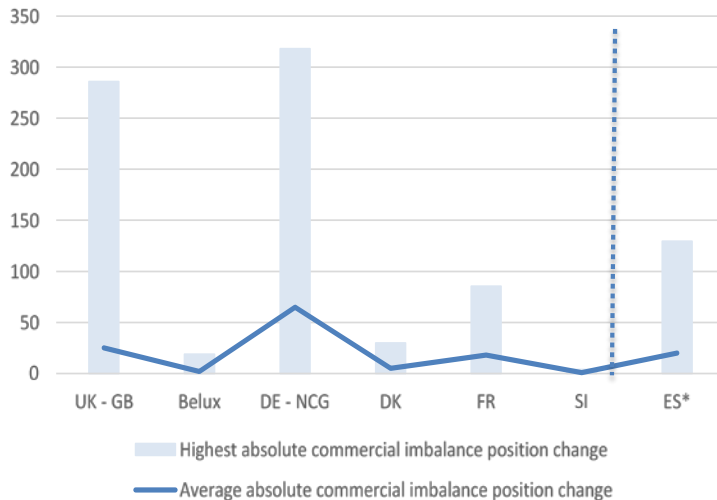
Source: ACER

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- **Debate:** Why is it in the Report? Can this be important?
- Changes in the linepack position (i.e. difference between the opening and closing linepack position) should at least partly reflect the net daily commercial imbalance position changes. (We focused on day-on-day.)
- Our opinion is: It is important to understand how the commercial activities of gas balancing align with the physical system.
 - Very little information is available about this. The daily linepack variability could inform on the extent to which zones can absorb substantial imbalances (under some circumstances). –Transport flexibility
 - Linepack flexibility: critical design element of balancing design. Having access to economic and efficient amount of flexibility without unduly constrain network user's freedom.
 - Where day-on-day physical linepack changes are not close to the anticipated effect arising from the day's commercial imbalances, the reasons should be investigated and explained to ensure confidence in the operation of the regime. – Interaction of the two
 - Linepack is in the core of TSOs' business. If anyone, TSOs are the ones to explain how it works, what the constraints are, and whether certain constraints are necessary or not. – Economic & efficient operation

- The Network Users' Imbalances and TSO Balancing Actions together constitute the Commercial Imbalance Position.
- The Cumulated* Commercial Imbalance Changes contribute to Linepack Changes (but not-exclusively).
- CCI=LC under certain circumstances & if there are no other change factors.
- Deviations between commercial and physical gas accounting may be due to technical reasons. Deviations could have repercussion on the commercial side, so they may need to be explained.

Figure 7-18: Statistics 6 and 7 - Highest and average absolute commercial imbalance position change (GWh, 2016) Figure 7-17: Statistics 4 and 5 - Highest and average absolute day-on-day linepack changes (GWh, GY 2015-16)



Source: ACER

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- BASIC NEUTRALITY is a key indicator for wider REGIME PERFORMANCE and a tool for robust GAS ACCOUNTING.
- DISCREPANCIES ACROSS the normalised values of country indicators and between the physical and commercial indicators should be assessed by all actors to help improve the effectiveness of the regime.
- We would like to cooperate with NRAs who did not take part in this year's analyses, but wish to do so.
- We would like to see ENTSOG using this analytical framework and take part in a broader data collection (INCLUDING IMBALANCE PRICES, LINEPACK DATA).
- CONCERNING COUNTRY ASSESSMENTS
- We are concerned about PROGRESS IN SOME COUNTRIES APPLYING INTERIM MEASURES. We believe that those who do not set up a functioning platform by end-2017, WILL NOT MEET THE LEGAL DEADLINE OF CODE IMPLEMENTATION OF APRIL 2019.

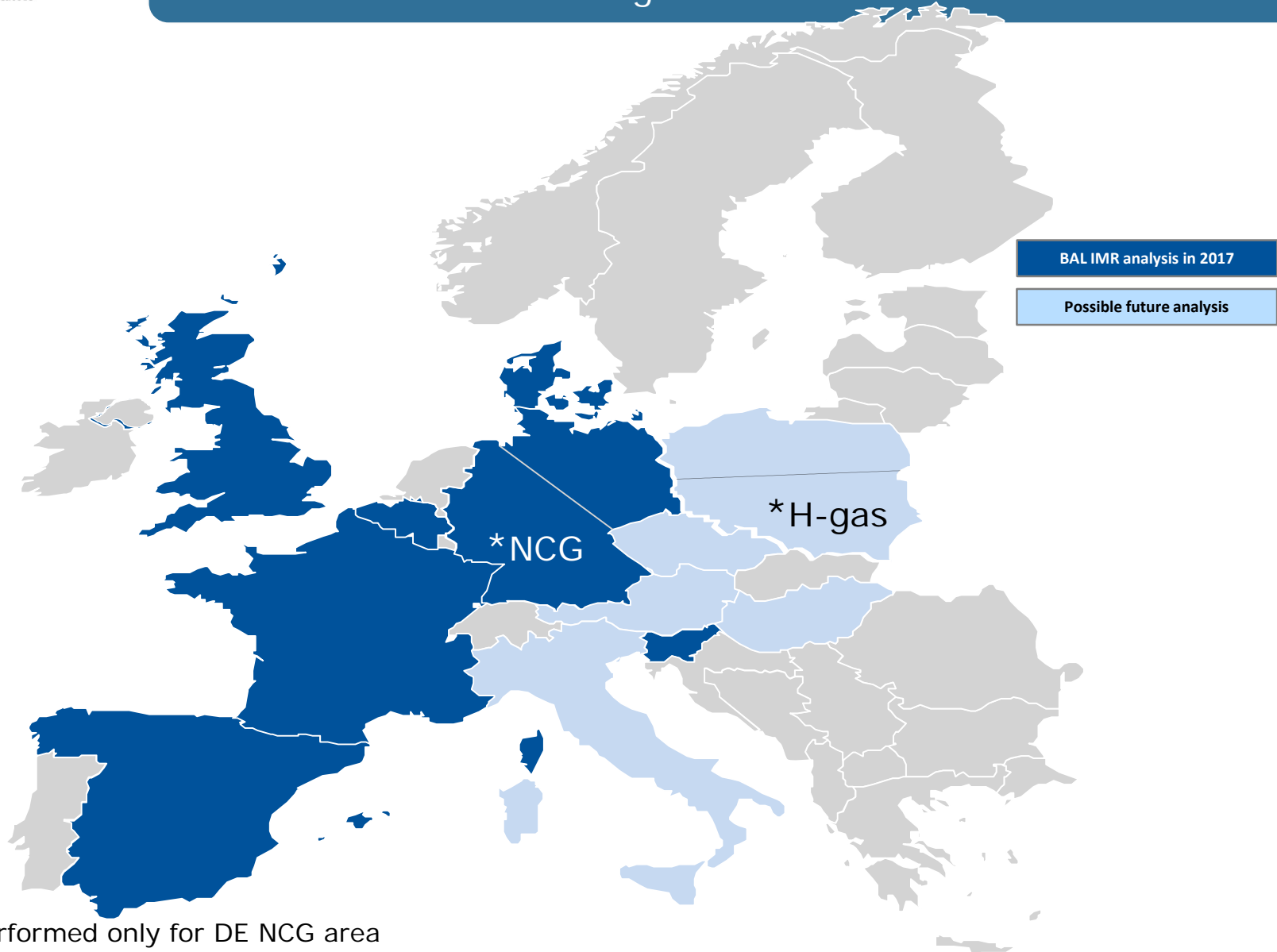
Finally,

- The *Balancing Analytical Framework* should become an integral part of regime performance monitoring. The necessary data limit the application of the framework.
- The Agency promotes the use of the *Balancing Analytical Framework*, where the relevant data is available.
 - The relevant data should be available;
 - In the interim countries, additional parameters might be needed (e.g. tolerances).

GIVEN THAT THIS FRAMEWORK COULD BE USED BY MANY, THE AGENCY WOULD WELCOME FEEDBACK FROM INDUSTRY STAKEHOLDERS ON THE MERITS OF THE **FRAMEWORK**.

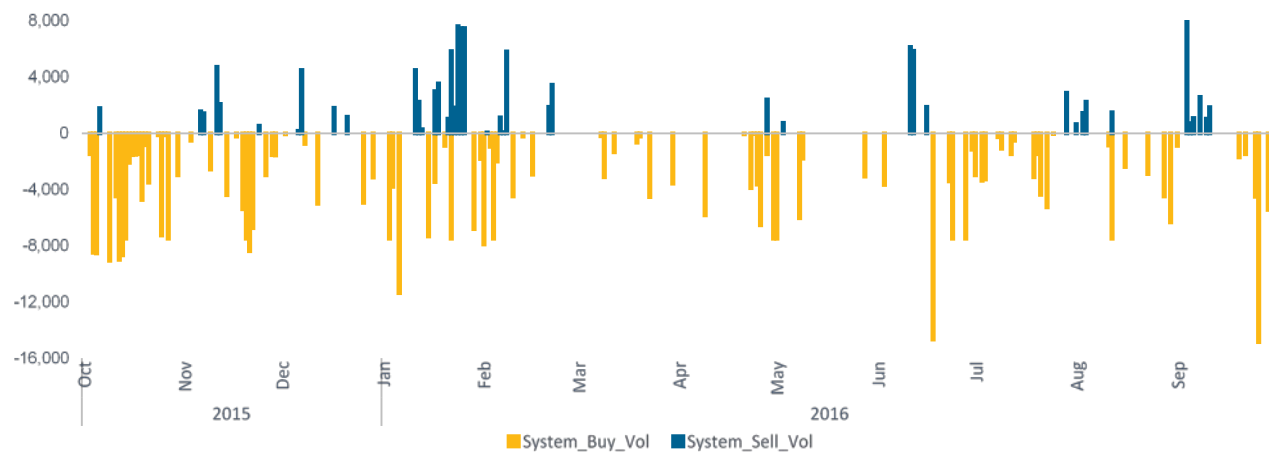
Going further?

What could be the next region to be looked at?



* Analysis performed only for DE NCG area

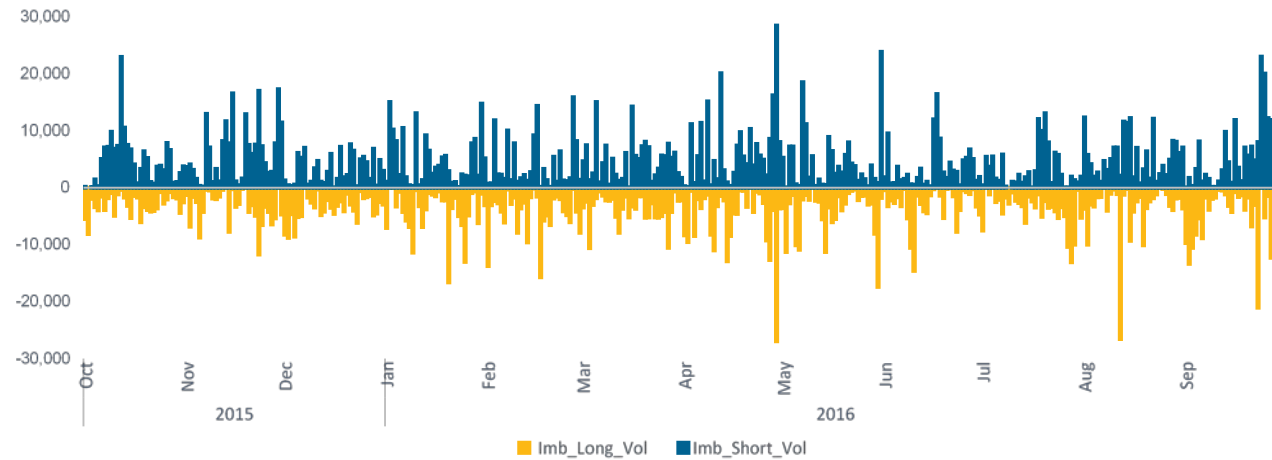
TSO's balancing action, Denmark (MWh)



TSO's balancing actions statistics, Denmark

	Annual quantity MWh	Share of annual market %	Number of days n°	Average daily quantity MWh	Max daily quantity MWh	Share of activity %	Average price EUR/MWh
System Buys	406,530	0.60	102	3,986	14,880	77.3	15.59
System Sells	119,400	0.17	43	2,777	9,150	22.7	12.91
Total	525,930	0.77	141				

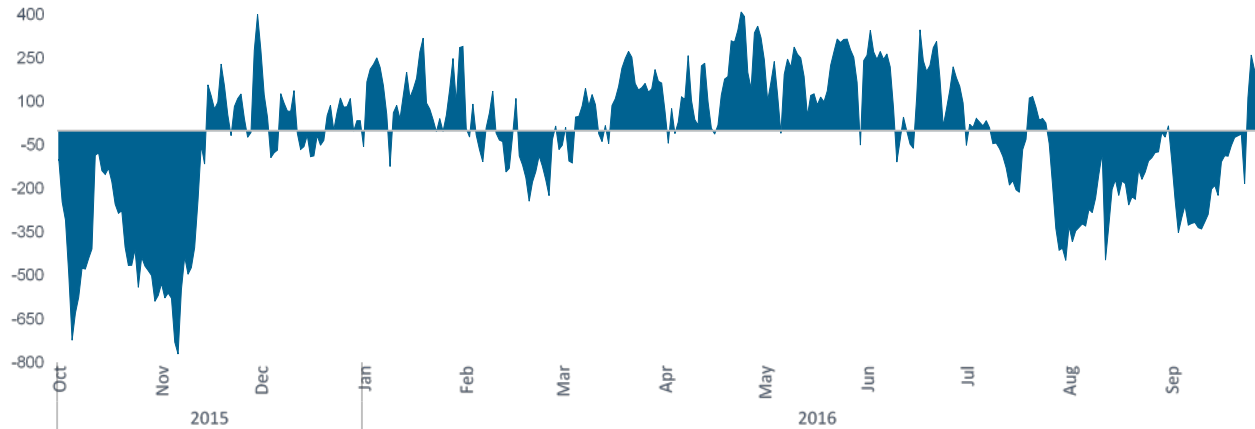
Network Users' imbalance quantities, Denmark (MWh)



Network users' imbalance statistics, Denmark

	Annual quantity MWh	Share of annual market %	Min daily quantity MWh	Average daily quantity MWh	Max daily quantity MWh	Share of activity %	Average price EUR/MWh
Network user Long	1,450,625	2.13	14	3,963	26,981	45.5	13.62
Network user Short	1,740,080	2.55	0	4,754	28,436	54.5	14.15
Total	3,190,705	4.67					

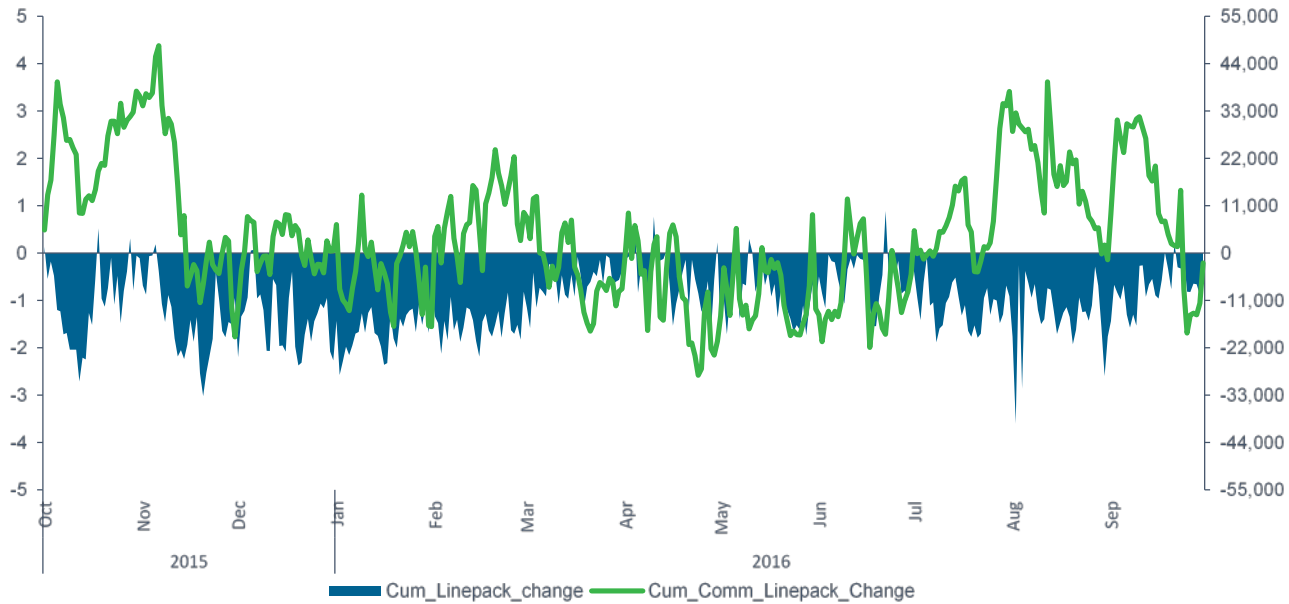
Cumulative neutrality financial position, Denmark (thousand EUR)



Cumulative *neutrality position*, Denmark

	Quantities (MWh)	Cashflows (thousand EUR)	Relative share (%)
Financial credits to neutrality			
TSO System Sells	119,400	1,542	6%
Network User Imbalance shorts	1,740,080	24,614	94%
Sub-total		26,156	
Financial debits to neutrality			
TSO System Buys	406,530	6,338	24%
Network User Imbalance longs	1,450,625	19,764	76%
Sub-total		26,102	
Net	-2,325	54	
Net neutrality per unit of market volume 0.0008 €/MWh			

Linepack (mcm, left axis) and overall commercial imbalance position (MWh, right axis), Denmark



Publication is available:

The piece of news :

<http://www.acer.europa.eu/Media/News/Pages/Second-ACER-Report-on-the-implementation-of-the-Balancing-Network-Code-available-online1116-1654.aspx>

Direct access to the Report:

Volume I:

[http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Report%20on%20the%20implementation%20of%20the%20Balancing%20Network%20Code%20\(Second%20edition\)%20Volume%20I.pdf](http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Report%20on%20the%20implementation%20of%20the%20Balancing%20Network%20Code%20(Second%20edition)%20Volume%20I.pdf)

Volume II:

[http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Report%20on%20the%20implementation%20of%20the%20Balancing%20Network%20Code%20\(Second%20edition\)%20Volume%20II.pdf](http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Report%20on%20the%20implementation%20of%20the%20Balancing%20Network%20Code%20(Second%20edition)%20Volume%20II.pdf)

Thank you for your attention!



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