

Annual System Balancing Report pursuant to the GaBi Gas 2.0 ruling for GY 2023/2024

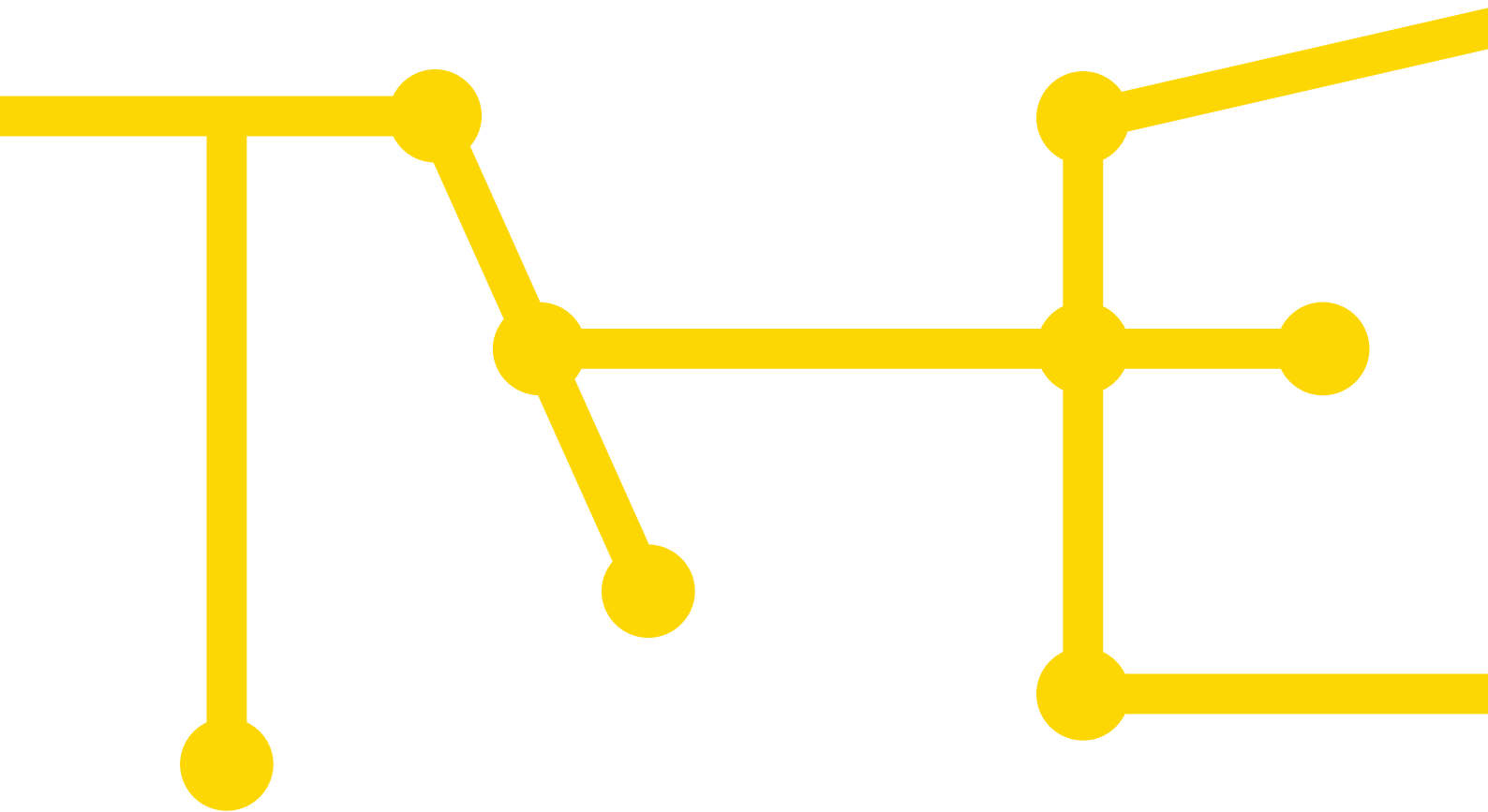


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List of abbreviations and acronyms

BH	bank holiday
BGM	balancing group manager
BMWi	German Federal <i>Ministry for Economic Affairs and Energy</i> (until December 2021)
BMWK	German Federal Ministry for Economic Affairs and Climate Action (<i>Bundesministerium für Wirtschaft und Klimaschutz</i>)
DA	day-ahead
EEX	European Energy Exchange
Federal Network Agency	German national regulatory authority (<i>Bundesnetzagentur – BNetzA</i>)
GaBi Gas 2.0	administrative ruling on gas balancing handed down by the Federal Network Agency on 19 December 2014 (ref: BK7-14-020)
GTG	Gastransport Nord GmbH
GTS	Gasunie Transport Services B.V.
GUD	Gasunie Deutschland Transport Services GmbH
GY	gas year
IP	interconnection point
LTO	Long-Term Options
MAM	market area manager
MOL	merit order list
NWG	Nowega GmbH
RoD	rest-of-the-day
SA	Saturday
SCB	Short-Call Balancing Services
STB	Short-Term Balancing Services
SU	Sunday
THE	Trading Hub Europe
TSO	transmission system operator
TTF	Title Transfer Facility
VIP	virtual interconnection point
WD	within-day

1 Introduction

Operative part 9(a) of the decision of Ruling Chamber 7 of the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway (BNetzA) on gas balancing of 19 December 2014 (BK7-14-020; GaBi Gas 2.0) obliges the market area manager (MAM) to submit an annual report to Ruling Chamber 7 of the BNetzA on the procurement and use of internal and external balancing gas.

This System Balancing Report covers gas year (GY) 23/24 and is the third System Balancing Report for the single German market area Trading Hub Europe (THE).

In terms of balancing actions, GY 23/24 marks a shift towards balancing gas purchases. After two gas years dominated by balancing gas sales generating revenues, GY 23/24 saw balancing gas costs exceed revenues, resulting in a negative balance of EUR 508.7 million. Gas prices stabilised substantially in GY 23/24. Balancing gas use showed high balancing gas sales quantities on the low-CV side coinciding with high balancing gas purchases on the high-CV side. This situation was mainly caused by high conversion quantities from low-CV gas to high-CV gas and also amplified by a considerable undersupply of biogas.

In the course of GY 23/24, the Flexibility Service product was merged with the SCB product, which is why it has been included in this annual system balancing report for the last time.

2 Internal balancing actions

This chapter describes the internal balancing actions in THE's market area. Internal balancing reduces the need for external balancing transactions that come with a fee, and should therefore be prioritised in accordance with regulatory requirements.

The following charts illustrate the positive and negative internal balancing actions taken across both gas qualities (high-CV and low-CV gas) for the individual months of GY 23/24.

The most extensive use of high-CV gas for positive and negative internal balancing actions was recorded in January 2024, while GY 22/23 had seen a peak in October 2022. In total, 49,467 GWh of high-CV gas for positive and 50,834 GWh of high-CV gas for negative internal balancing actions were used in GY 23/24. Compared to GY 22/23, the use of high-CV gas for positive balancing actions has remained relatively unchanged (down by 0.01 %) while the use of high-CV gas for negative balancing actions increased by 1.32 %.

The most extensive use of low-CV gas for positive internal balancing actions was also recorded in the month of January 2024, while the most extensive use of low-CV gas for negative internal balancing actions occurred in December 2023. GY 22/23, however, had seen the most extensive use of low-CV gas for positive and negative internal balancing actions peak in October 2022. In total, 6,020 GWh of low-CV gas for positive and 6,113 GWh of low-CV gas for negative internal balancing actions were used in GY 23/24. Compared to GY 22/23, the use of low-CV gas for positive and negative balancing actions fell by 15.8 % and 13.6 %, respectively. This fall is due to the ongoing market area conversion to high-CV gas, which coincides with a reduction in the available low-CV gas linepack.

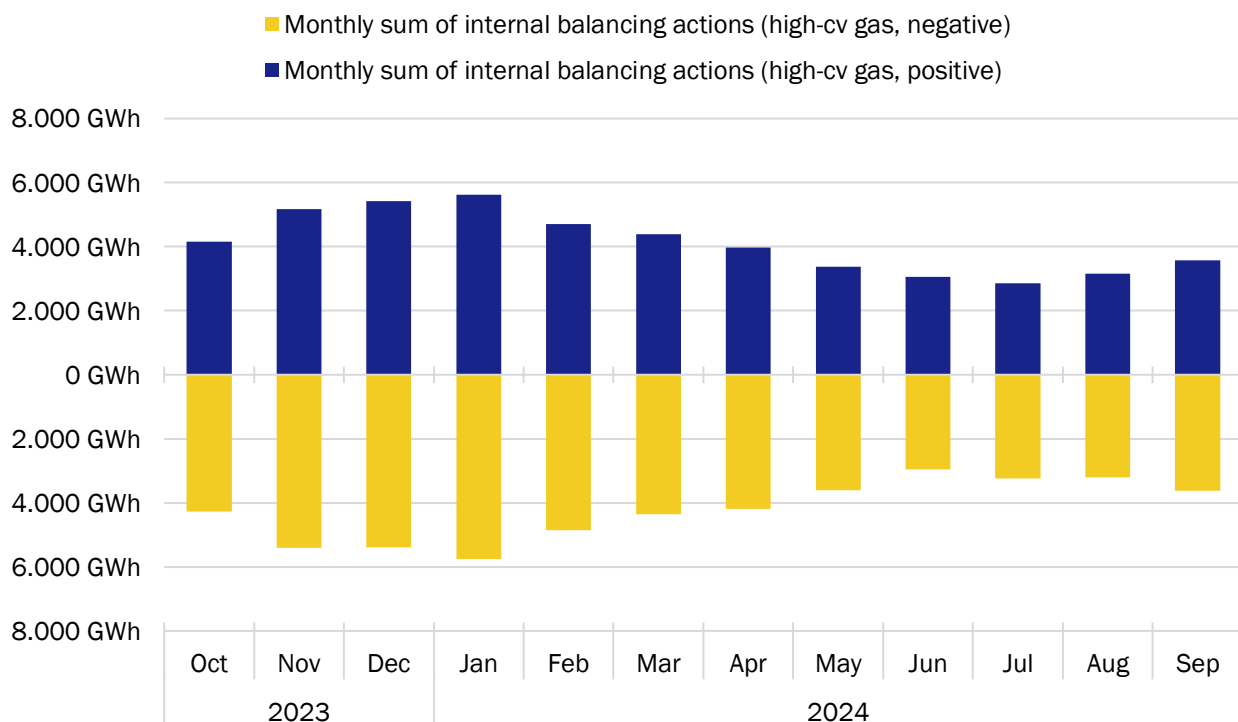


Figure 1: Use of high-CV gas for internal system balancing

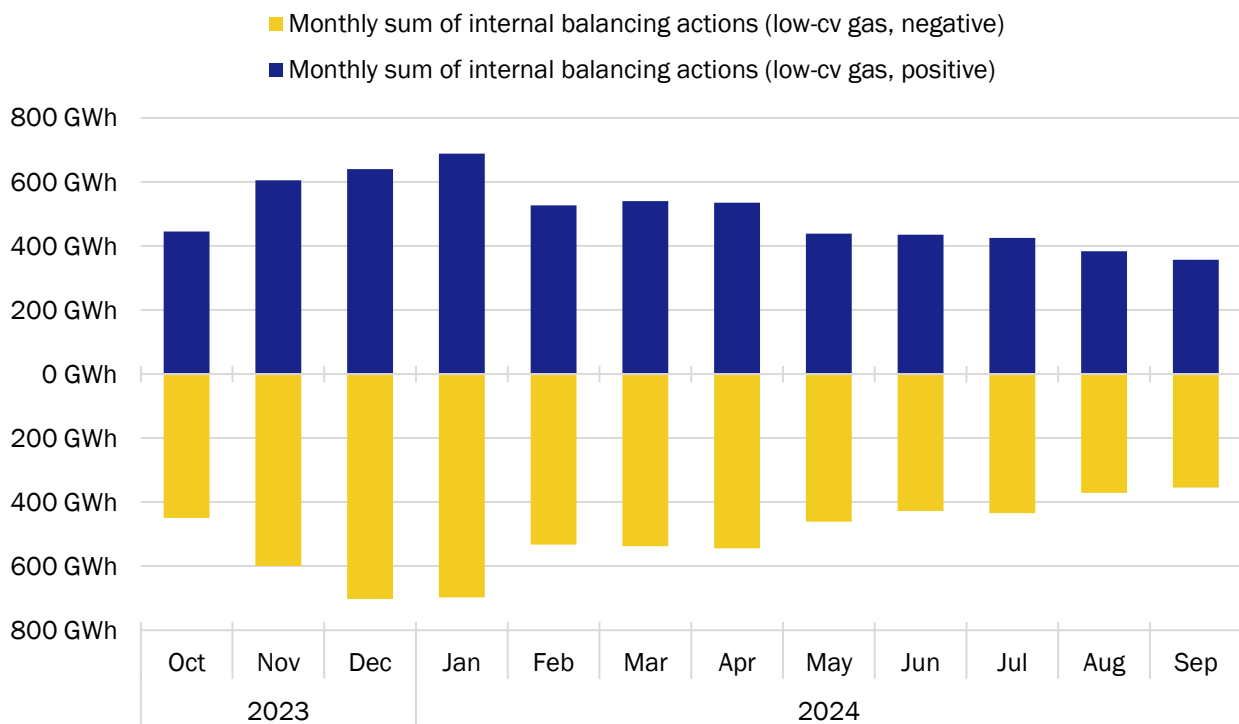


Figure 2: Use of low-CV gas for internal system balancing

3 External balancing actions and related procurement activities

3.1 Overview of SystemBuy and SystemSell transactions by MOL

3.1.1 General overview

Figure 3 provides an overview of external balancing for each of the months of GY 23/24.

A total of 32,588 GWh of balancing gas was bought and a total of 26,108 GWh of balancing gas was sold during GY 23/24, while in GY 22/23 a total of 32,243 GWh of balancing gas had been bought and 55,383 GWh of balancing gas had been sold in the THE market area, which is a level similar to GY 21/22 and a decrease of about 33 % from GY 22/23. The main driver here were the lower balancing gas sales volumes compared to the previous gas year. The months of May, June and September 2024 saw a high level of balancing gas use that was unusual for the season and due to high entries on the low-CV gas side and subsequent conversion from low-CV gas to high-CV gas. In addition, balancing gas use was influenced by atypical undersupply situation in biogas balancing groups.

In monetary terms, GY 23/24 was a return to balancing gas purchases on a level similar to the gas years before the Russian war of aggression against Ukraine, with spending for external system balancing (excluding capacity charges) totalling EUR 1,142 million for the full gas year (vs. EUR 2,066 million in GY 22/23) while income from SystemSell transactions amounted to EUR 846 million (vs.

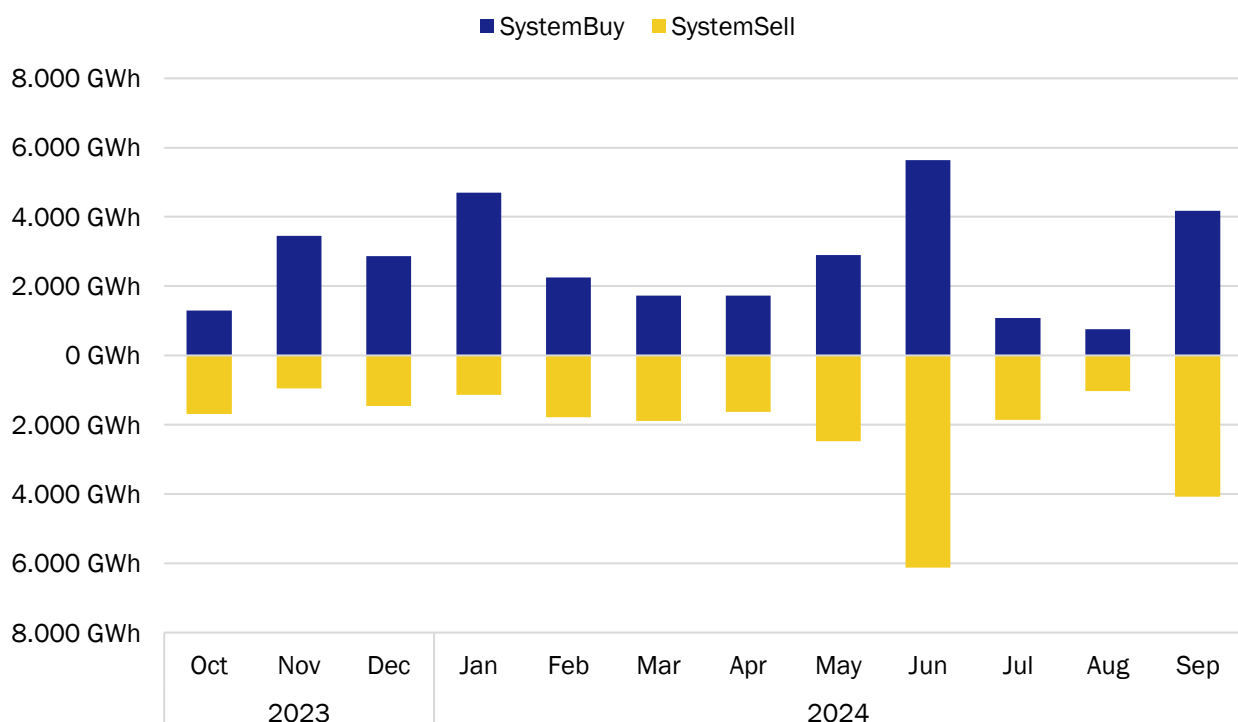


Figure 3: Use of high-CV and low-CV gas for external system balancing

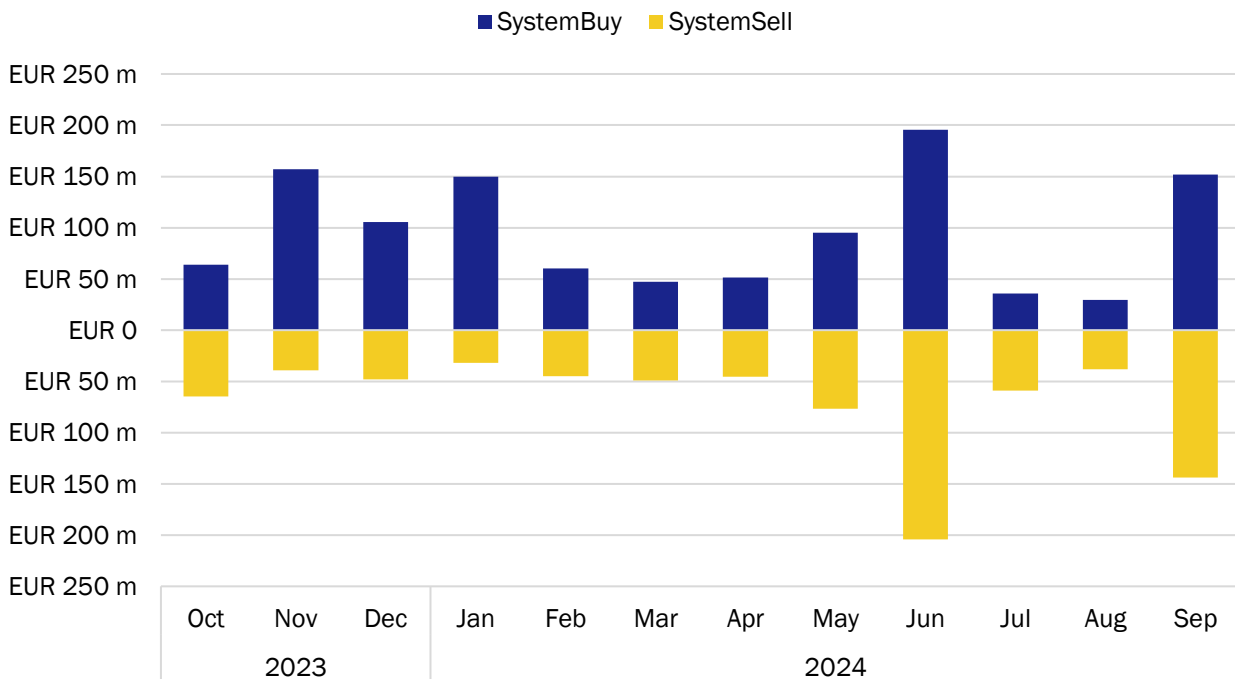


Figure 4: External system balancing costs and revenues for high-CV and low-CV gas

EUR 3,253 million in GY 22/23:). Figure 4 provides an overview of the external system balancing costs and revenues for both high-CV and low-CV gas.

Even with the capacity charges taken into consideration, balancing gas costs in GY 23/24 exceeded revenues by EUR 508.7 million. After two successive gas years dominated by gas sales, the picture is thus back to normal. The exceptional sales situation in GYs 22/23 and 21/22 had led to surpluses of EUR 739.2 million in GY 22/23 and EUR 888.1 million in GY 21/22.

3.1.2 Areas and zones in THE market area

THE's market area is divided into the following areas and zones:

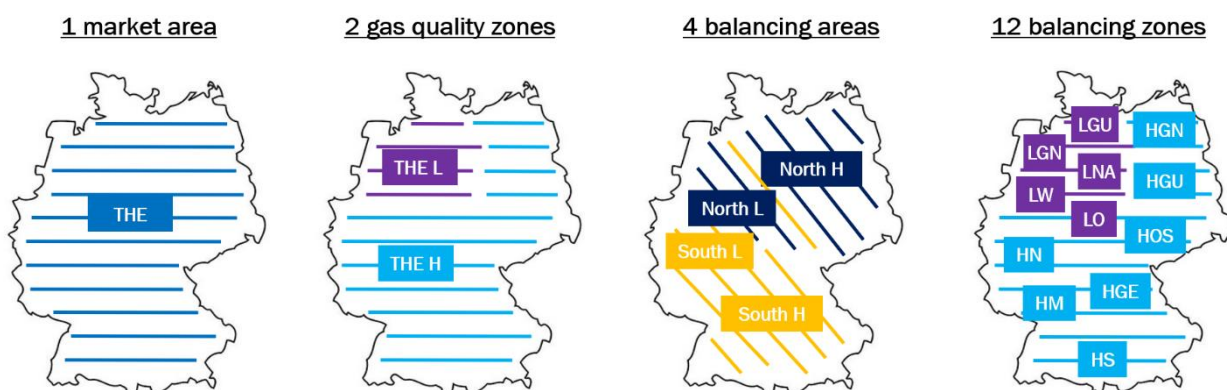


Figure 5: Areas and zones in the market area

The layout of the individual areas and zones is based on the list of points published on the THE website.

3.1.3 Product portfolio available for balancing actions

Our balancing actions and related procurement activities are conducted in accordance with regulatory requirements according to a defined merit order list (MOL) which focuses on the short-term, exchange-based procurement of the balancing gas quantities needed. In addition to the use of exchange-traded products, the MAM also concludes contracts for bilateral balancing products.

Figure 6 shows the products used in the THE market area in GY 23/24 as arranged by MOL and balancing criterion.

As regards the exchange-traded products, it should be noted that different order books are used for "day-ahead" (DA), "within-day" (WD), "Saturday" (SA), "Sunday" (SU) and "bank holiday" (BH), depending on the trading time or the delivery period. This differentiation is not made for the remainder of this report. The report only distinguishes between the product variants "day-ahead" (DA) and "rest of the day" (RoD) for daily products and "Hour" for hourly products. The DA product variant also includes all SA, SU and BH contracts for exchange-based transactions, while WD contracts are always allocated to the RoD product variant.

In MOL ranks 1 and 2, the MAM trades directly on the exchange. The MAM is authorised to use the EEX as a trading platform. So far, THE has only used the TTF to procure balancing gas in an adjacent market area. It is also authorised to use the ICE trading platform.

During the course of GY 23/24, the foundations were laid for using other neighbouring European trading hubs to procure balancing gas at optimal prices, with due consideration for the relevant transportation costs. At the end of GY 23/24, test call orders were successfully executed at trading hubs in Denmark (ETF) and Belgium (ZTP). All information on system balancing actions is published on the THE website.

		Merit-Order			
		1	2	3	4
Title Market Transactions	Products	Global	Quality		
	eex ice WD, DA, SA, SU, BH	EEX THE	EEX THE H, EEX THE L, EEX TTF, ICE TTF		
	eex Hour	EEX THE	EEX THE L		
Locational Market Transactions	Products		Local		
	eex WD, DA, SA, SU, BH		EEX THE North H/North H Cluster EEX THE South H/South H Cluster EEX THE North L/South L EEX THE North H VIP BE/South H VIP BE EEX THE North H VIP NL/South H VIP NL		
	Hour		EEX THE L West/East		
Balancing Services	THE				Local
	RoD (LTO/STB)				Demand-based contracting for balancing energy (sub)zones
	LRD				7 zones high-cv gas:
	Hour (LTO)				HGN, HGU, HOS, HN, HGE, HM, HS
	Hour (SCB)				5 zones low-cv gas:
	Flex				LGU, LGN, LNA, LW, LO

Figure 6: Overview of balancing products

For the products in MOL 4, tenders are organised via THE GmbH's Balancing Services Portal. These tenders are open to all pre-qualified providers. All tender invitations are announced on the THE website and the tender results are published. The prequalification rules, product descriptions and other contract documents can also be found on the THE website.

The North L (Hour) product originally planned for structuring purposes has not been introduced as yet. THE GmbH will inform market participants in good time of any changes in this regard.

3.1.4 Quantities supplied/received and associated costs by MOL

Below we describe the gas quantities supplied and received in the course of our external balancing actions in the THE market area in GY 23/24 as well as the associated costs and revenues, with the corresponding information being provided separately for SystemBuy balancing actions (purchases of gas for system balancing purposes) and SystemSell balancing actions (sales of gas for system balancing purposes) as well as by MOL. A tabular overview of all MOL ranks can be found in the appendix to this document.

Figure 7 shows the balancing gas quantities we procured on a day-ahead and rest-of-day basis (product variants DA and RoD) by MOL, month and direction (SystemBuy/SystemSell) along with the associated costs and revenues¹.

99.99 % of the balancing gas quantities in the RoD/DA segment were procured on the exchange, with 8.7 % procured globally within MOL 1. External system balancing actions within MOL 1 are only an option if there is sufficient capacity for technical conversion between the high-CV gas and low-CV gas quality zones and if there are no conflicting quality-specific requirements. The proportion MOL 2 quantities procured was 91.3 %.

Due to the adequate availability of MOL 1 and MOL 2 balancing products, long-term MOL 4 balancing products (LTO in the RoD product variant, see chapter 5.2) did not have to be used as part of regular RoD and DA procurement practice. In February and March 2024 there were a total of five call orders for test purposes (see details on MOL deviations in this chapter 3.1 and on LTO test call orders in chapter 5.2.6).

Figure 7 also shows that the balancing gas was primarily deployed via MOL 2, with most of the quantities recorded on the procurement side as high-CV gas (26,551 GWh) and low-CV gas quantities dominating on the sales side (29,268 GWh). A comparison of the quantities deployed in MOL 2 shows that 54.2 % of the total MOL 2 quantities were purchased and 45.8 % were sold.

¹ Since DA quantities are normally procured between 02:00 and 03:00 hrs. in the morning and since trading between the 24-hour intra-day order book and the DA order book is purely price-optimised, this report largely dispenses with separate presentation of the quantities and costs/revenues for the DA and RoD product variants.



Figure 7: External balancing actions: quantities and costs/revenues by MOL (DA and RoD, by month)

Figure 8 shows the external system balancing actions used to meet **hourly structuring requirements (Hour product variant)** and the resulting costs and revenues. The quantities procured via products designed to meet hourly requirements in GY 23/24 totalled 1,609 GWh. During the same period, 2,200 GWh were sold via the Hour product. Given the ongoing market area conversion, it can be assumed that structuring requirements will decrease in the future. On the monetary side, EUR 59.7 million in costs for the use of Hour balancing products in the THE market area were more than offset by EUR 67.1 million in revenues in GY 23/24. Revenues therefore exceeded costs by EUR 7.4 million, resulting in a net surplus of EUR 34.8 million.

As with the RoD and DA balancing requirements, the structuring requirements were also almost completely (98,62 %) met by exchange-based products (GY 22/23: 99.86 %). With the exception of test call orders, balancing gas is only traded “over the counter” (products in MOL 4) if the products in MOL ranks 1 and 2 are not available or not sufficiently available (in practice, particularly if the exchange is unavailable) or are not suitable for meeting demand (see chapter 5.2.4). The SCB product with a particularly short lead time used for structuring purposes is also treated as an Hour product in the general analyses in this chapter (for details on the product design and the use of the SCB product, please refer to chapter 5.4).

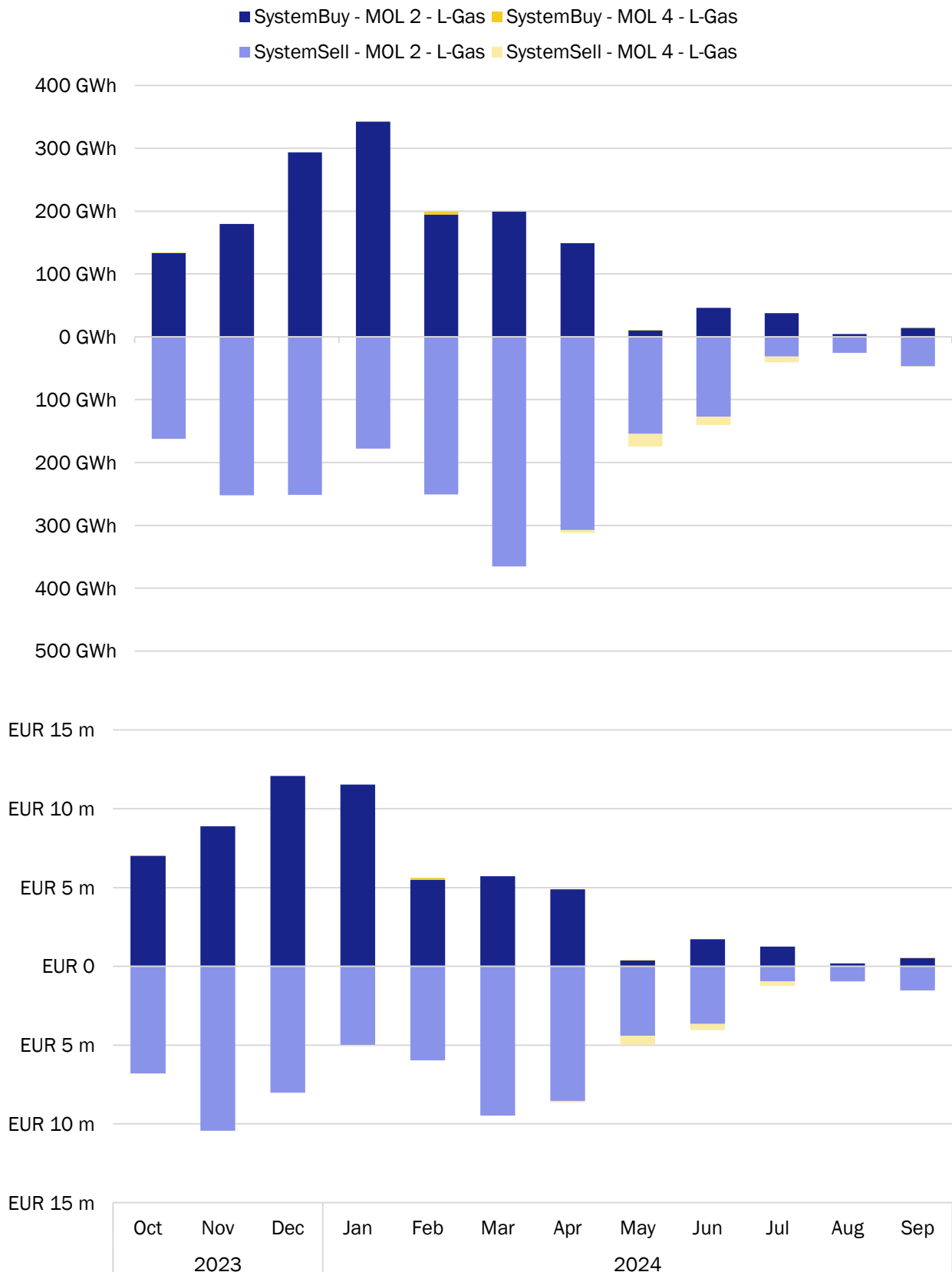


Figure 8: External balancing actions: quantities and costs/revenues by MOL (Hour, by month)

Figure 9 shows the delivery rate called off in relation to the duration of the balancing action. The highest delivery rate was called off in the day-ahead segment for a period of 21 to 24 hours, with day-ahead trading being possible until 02:00 hrs. In the rest-of-the-day segment, the highest delivery rates were called off over periods of 17 to 20 hours and 9 to 12 hours.

A tabular overview of the costs and revenues per MOL rank can be found in the appendix.

3.1.5 Development of SystemBuy and SystemSell prices by MOL

In this chapter we provide information on the lowest (“min”), highest (“max”) and average (“mean”) monthly procurement prices we paid and received within each MOL rank to meet our respective SystemBuy and SystemSell balancing requirements.

On the high-CV gas side, the average price in MOL rank 1 for SystemBuy transactions was just under EUR 50/MWh at the start of GY 23/24, gradually falling during the winter to below EUR 27/MWh in February. From there, it moved sideways, rising again to over EUR 30/MWh in May and just under EUR 39/MWh at the end of September. It was only at the beginning and end of GY 23/24 that the mean MOL 2 price for SystemBuy transactions deviated by a significant margin from the mean value of the MOL 1 price for SystemBuy transactions.

The mean MOL 1 price for SystemSell transactions on the high-CV gas side showed a concave trend from just under EUR 36/MWh in October to just under EUR 26/MWh in February and to just over EUR 31/MWh in August. It was only in November that the mean MOL 2 price for SystemSell transactions deviated by a significant margin.

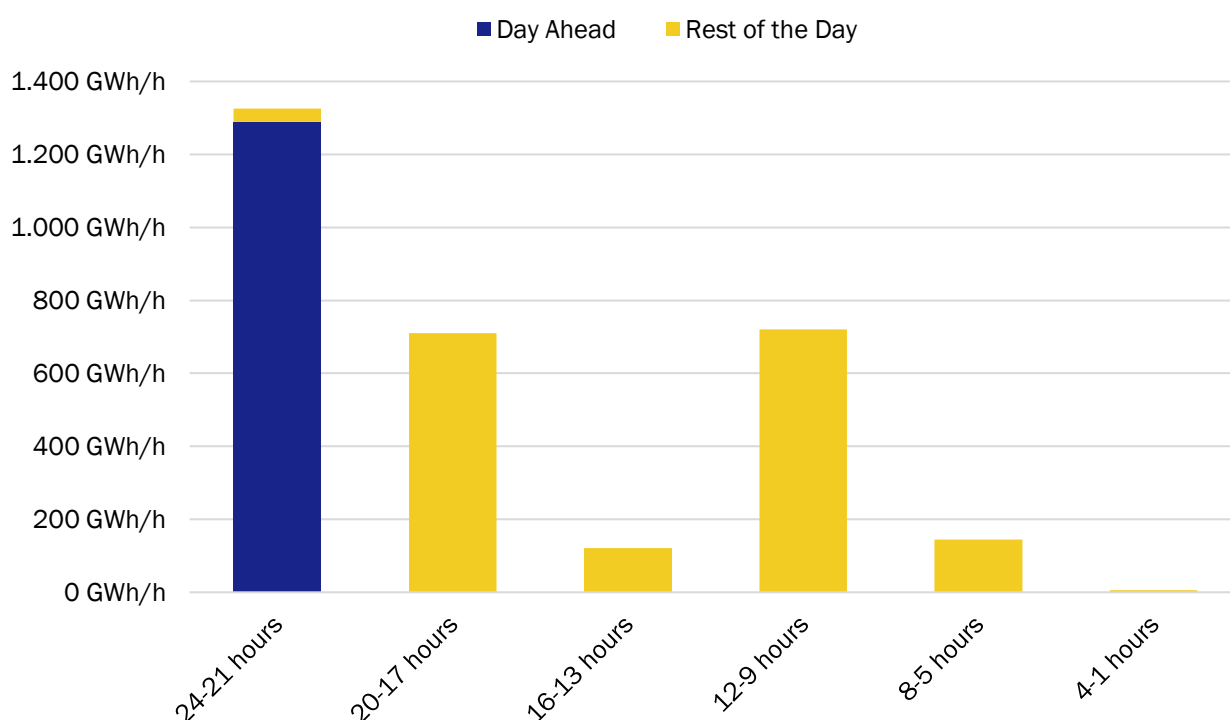


Figure 9: External balancing actions: Delivery rate in relation to duration of balancing action (DA and RoD)

Over 90 % of the average volume-weighted procurement prices (buy/sell) for RoD and DA balancing gas actions in THE's market area were again within a price corridor of $\pm$ EUR 2/MWh relative to the respective volume-weighted average prices on the gas exchange. For the year as a whole, 97 % was procured within the aforementioned price corridor in MOL 1 (vs. 58 % in prior year) and 93 % in MOL 2 (vs. 49 % in prior year).

Figure 10 and Figure 11 show the procurement prices we paid and received for RoD, DA and Hour balancing actions separately for the high-CV gas and low-CV gas network areas (MOL 1, MOL 2 and MOL 4²) in GY 23/24.

The price development on the low-CV gas side for DA and ROD system balancing in MOL 2 in SystemBuy transactions was similar to that for high-CV gas, although no low-CV gas quantities were procured in MOL 2 in October and December. From January onwards, the average MOL 2 price in SystemBuy transactions was just under EUR 30/MWh, increasing over the course of the gas year to just under EUR 37/MWh at the end of September. The average price for system balancing in MOL 2 for SystemSell transactions was just under EUR 40/MWh at the beginning of the gas year. After reaching over EUR 40/MWh in November, the price dropped to just over EUR 26/MWh in March 2024. From May, the average price rose back above EUR 30/MWh, reaching just under EUR 35/MWh at the end of the gas year.

The development of the mean price for MOL 2 Hour products in SystemBuy transactions was similar to that for the products described above. It dropped from over EUR 52/MWh in October to just over EUR 28/MWh in March, exceeding the EUR 30/MWh mark in April and then reaching just over EUR 37/MWh at the end of GY 23/24. For the Hour product in SystemSell transactions, the mean MOL 2 price reached levels of just over EUR 40/MWh at the beginning of the gas year, dropping to below EUR 30/MWh over the course of the winter and to just over EUR 25/MWh in March. From March onwards, the mean price increased again, reaching EUR 38/MWh at the end of the gas year. Hourly balancing frequently shows higher deviations from average prices, with even higher outlier prices occurring in some procurement situations.

² The bilateral short-term balancing gas products in merit order rank 3 were discontinued as of 1 January 2018 (see section 8 of the System Balancing Report for GY 17/18); merit order rank 3 has therefore no longer been listed in the tables since the System Balancing Report for GY 18/19.

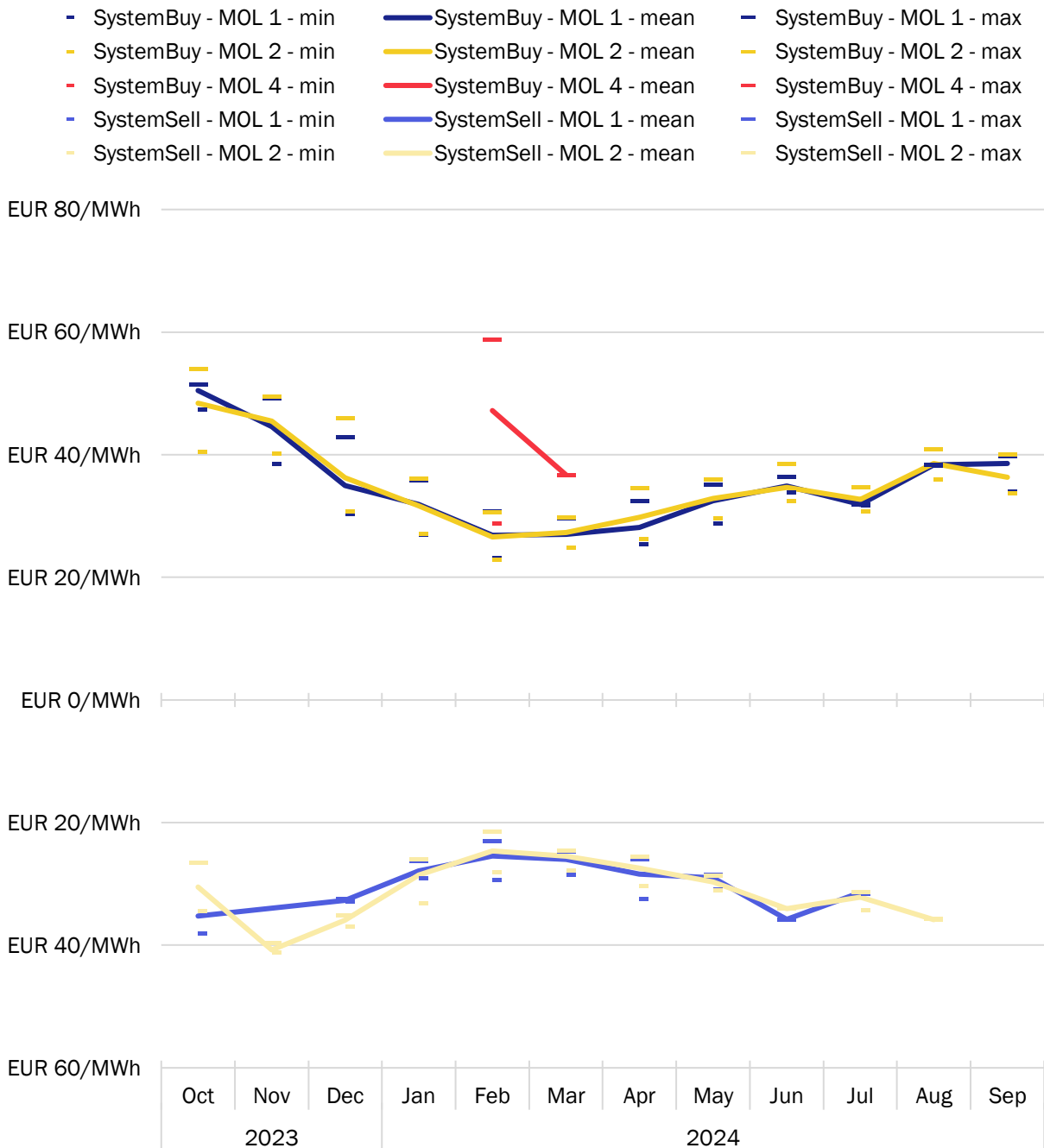


Figure 10: External balancing actions – high-CV gas prices (DA and RoD by MOL and month)

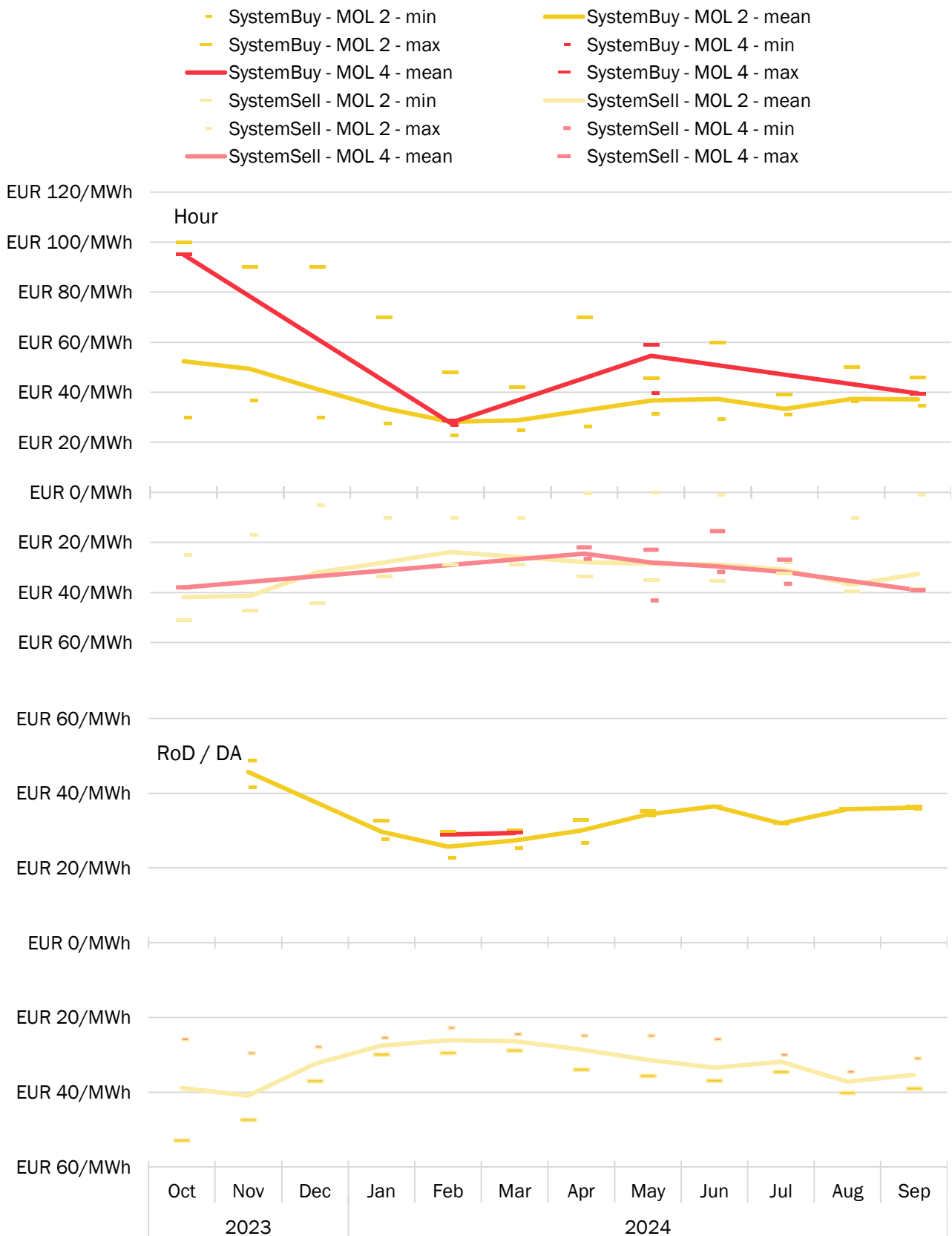


Figure 11: External balancing actions - low-CV gas prices (DA, RoD and Hour by MOL and month)

3.1.6 Deviations from merit order

Our external balancing actions and related procurement activities are carried out in accordance with a pre-defined merit order set out in the GaBi Gas 2.0 ruling. In exceptional circumstances, however, the regulatory framework also permits deviations from this merit order. In particular, these include the issuance of test call orders pursuant to the LTO product description (see chapter 5.2). The following table shows the deviations from the MOL that occurred in the THE market area in GY 23/24³:

Date	MOL affected	MOL used	Reasons for deviation
17 October 2023	MOL 2 RoD	MOL 4	Based on two test call orders, contracted LTOs were called off in the Hour variant
7 February 2024	MOL 2 RoD	MOL 4	Based on three test call orders, contracted LTOs were called off in the RoD variant
20 February 2024	MOL 1 RoD	MOL 2 RoD	Operational problems (incorrect human behaviour)
6 March 2024	MOL 2 RoD	MOL 4	Based on two test call orders, contracted LTOs were called off in the RoD variant
17 May 2024	MOL 2 RoD	MOL 4	Based on two test call orders, contracted LTOs were called off in the Hour variant
9 September 2024	MOL 2 Hour	MOL 4	Based on one test call order, contracted LTOs were called off in the Hour variant
18 September 2024	MOL 2 RoD	MOL 4	Based on one test call order, contracted LTOs were called off in the Hour variant

Table 1: Overview of deviations from merit order

3.2 Procurement of gas for balancing purposes in adjacent market areas

3.2.1 Procurement of gas for balancing purposes in adjacent market areas (pursuant to Article 9(3) of the BAL Code)

The option to procure gas for balancing purposes in adjacent market areas provides an appropriate way for us to balance our market area because it allows us to provide a targeted response, whether globally across our market area, in a specific gas quality and/or locally by trading title products for delivery at the Title Transfer Facility (TTF). We achieve this response by booking the required transportation capacity and nominating the corresponding flows at the relevant cross-border interconnection points (IPs) or virtual interconnection points (VIPs). The option to procure gas for balancing purposes in adjacent market areas therefore represents a suitable additional balancing tool complementing the product portfolio available for balancing actions in our own market area.

Under section 6(b)(bb) of the operative provisions of the GaBi Gas 2.0 ruling, permission has been given to procure gas for balancing purposes in an adjacent market area. This allows EEX or ICE Endex spot contracts for delivery at the Dutch TTF to be used for the THE market area.

³ The MOL deviations are also always published on the MGX website.
<https://www.tradinghub.eu/en-gb/Publications/Balancing-gas/Merit-order-exceptions>

In GY 23/24, test quantities were procured on the EEX at the trading points in Belgium (ZTP) and Denmark (ETF). The trading points had already been integrated into the THE systems as part of the implementation of the requirements of Regulation (EU) 2017/1938 ('SoS Regulation'). The ZTP and ETF trading points are to be used in the same way as the TTF, subject to price-optimised procurement, which means that short-term or interruptible capacities have to be booked for gas transportation from or into the adjacent market area, and cost efficiency must be taken into account.

The Belgian trading point offers a high level of reliability in terms of supply security thanks to the national LNG infrastructure and its physical connection to North Sea gas reserves. The Danish trading point is also physically connected to North Sea gas reserves, but can also draw on high national biogas production volumes.

3.2.2 Quantities supplied and associated costs

In GY 23/24, external balancing requirements were also met by the MAM in the adjacent market area at the Dutch TTF. The monthly quantities are shown in Figure 12 and, for the sake of completeness, also include the small quantities procured or sold for test purposes in Denmark and Belgium which, however, are not shown separately as they are too insignificant. A total of 83.0 GWh was purchased and 241 GWh was sold.

Costs totalling EUR 2.7 million and revenues of EUR 8.16 million were recorded over the entire GY 23/24 (see Figure 13). Compared to GY 22/23, the quantities procured in the adjacent market area in the period under review were at a similar level (-9 %). Sales volumes, on the other hand, were significantly higher than in the previous gas year (+875 %). The high sales volumes are related to the high low-CV gas deliveries into the system.

3.2.3 Contracted transportation capacity and capacity utilisation

Transportation capacities were contracted for the employment of balancing gas in GY 23/24. Table 2 provides an overview of the terms and product type. Firm freely allocable capacity was always booked. The day-ahead term is always 24 hours.

Network point	Direction	DA/WD	Booked capacity (MWh)	Capacity costs (EUR)
VIP TTF-THE-H (GUD/GTS)	Entry	DayAhead	76,992	173,889.38
VIP TTF-THE-L (TG/GTS)	Entry	WithinDay	15	31.05
VIP TTF-THE-L (TG/GTS)	Exit	DayAhead	126,096	182,466.23
VIP TTF-THE-L (TG/GTS)	Exit	WithinDay	115,851	168,760.35
VIP DK-THE (GUD/ENN)	Entry	WithinDay	14	30.21
VIP DK-THE (GUD/ENN)	Exit	WithinDay	24	43.43
VIP THE-ZTP (OGE/FLXB)	Entry	WithinDay	15	20.72
VIP THE-ZTP (OGE/FLXB)	Exit	DayAhead	24	21.51
VIP THE-ZTP (OGE/FLXB)	Exit	WithinDay	17	20.83
Total			319,048	525,283.71

Table 2: Transportation capacities by product type and term

According to Figure 14, the capacity used over the entire period was 311,006 MWh. Taking into account the total booked capacity of 319.048 MWh, this corresponds to a utilisation rate of 97% (vs. 75 % in GY 22/23).

The costs for the booked capacities are shown in Figure 15. The total costs for the booked capacities were EUR 525,284 (vs. EUR 820,706 in GY 22/23).

3.2.4 Our approach to contracting transportation capacity

As required under sentence 3 of Article 9(3) of the BAL Code, the MAM reviews the terms and conditions applicable to the trading of title products at the TTF on an annual basis. For this purpose, we have examined the terms and conditions applicable to trades in the ICE TTF and EEX TTF order books as well as the relevant provisions governing our corresponding bookings/nominations, and have found them to be in order. Moreover, we conducted an initial review of the terms and conditions applicable to trades in the EEX ZTP and EEX ETF order books prior to the start of trading.

In addition, we have reviewed whether the conditions for procuring gas in adjacent market areas are still met. In our view the availability of this option is still necessary and appropriate. The requirements set out in sentence 3 of article 9(3) of the BAL Code are therefore satisfied.

We evaluate the applicable terms and price components relevant to our balancing-related procurement activities in adjacent market areas on an annual basis and adjust our procurement approach to reflect any changes in circumstances.

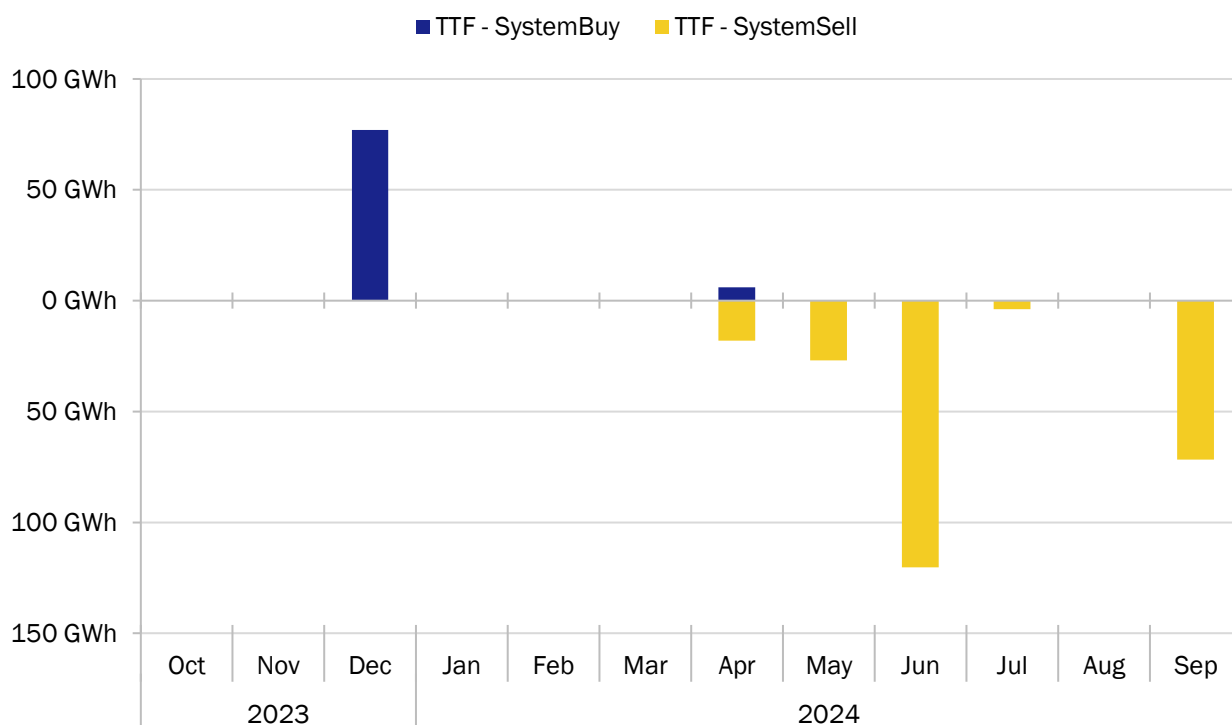


Figure 12: External balancing actions via TTF (quantities, DA and RoD by month)

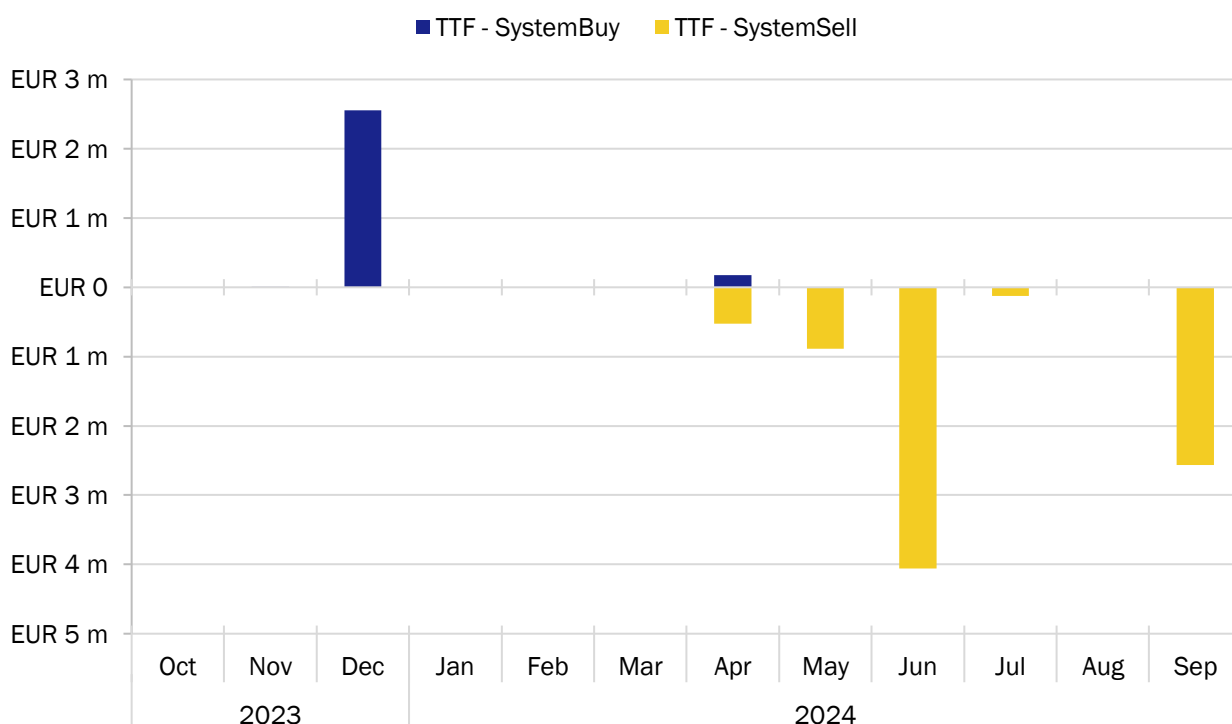


Figure 13: External balancing actions via TTF (costs and revenues; by month)

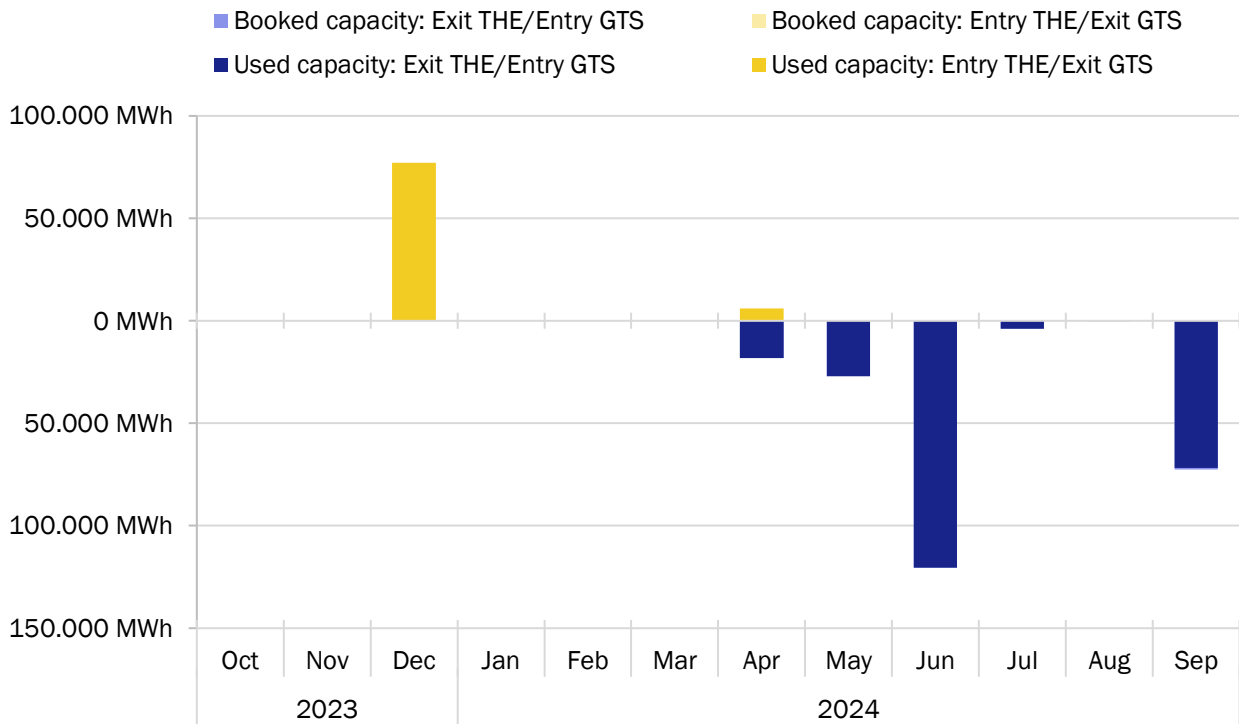


Figure 14: Contracted transportation capacity and capacity utilisation (by direction and day)

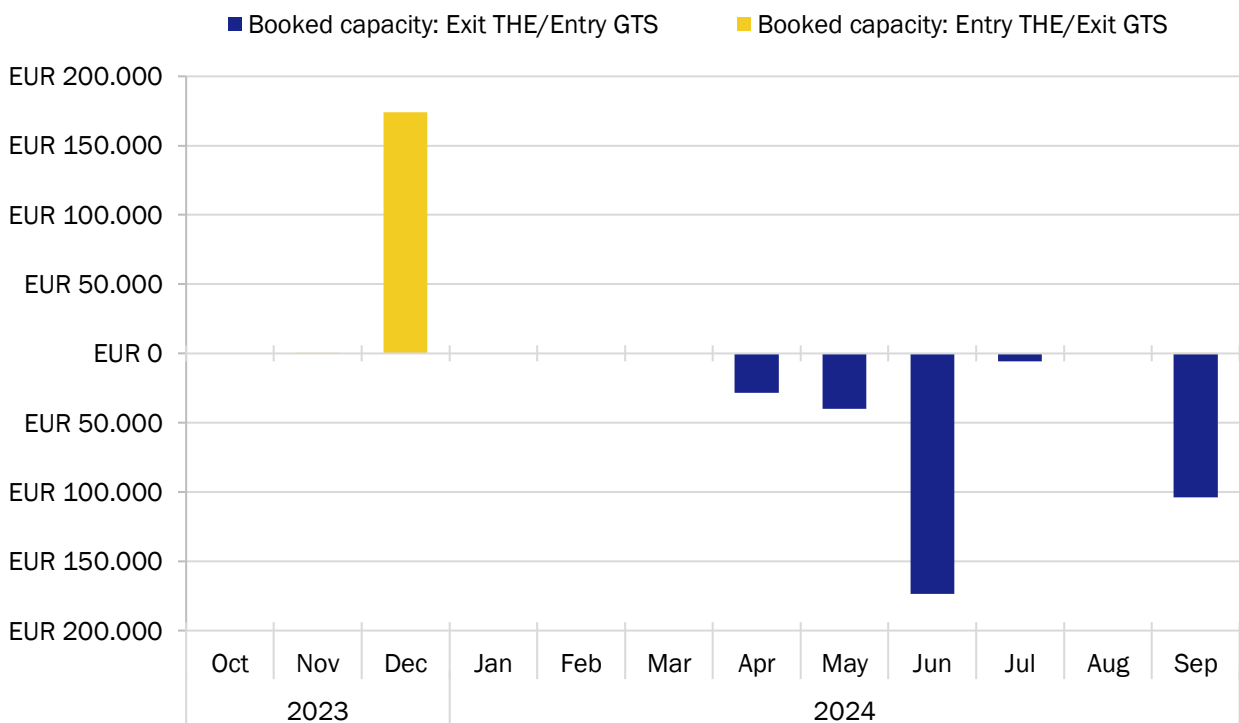


Figure 15: Costs for contracted transportation capacity (by direction and month)

3.2.5 Calculation methodology used to calculate transportation markups and markdowns

According to the last sentence of section 6(b)(bb) of the operative provisions of the GaBi Gas 2.0 ruling, the transportation costs incurred for the receipt or supply of gas from or to an adjacent market area have to be appropriately taken into account by the MAM. The resulting transportation markups and markdowns are included in the MAM's calculations in addition to the relevant commodity costs or revenues incurred or generated in the adjacent market area when determining the applicable positive and negative daily imbalance prices.

Separate monthly transportation markups and markdowns are calculated for SystemBuy and SystemSell balancing transaction directions, respectively. For SystemBuy transactions the MAM applies a transportation markup and for SystemSell transactions a transportation markdown. The calculated markups and markdowns determined for each of the above mentioned market areas are published on the THE website for the respective delivery months.

The methodology used for calculating the transportation markups and markdowns is described in detail in the document "Calculation methodology of the transportation markups and markdowns", which is available on the THE website⁴.

3.3 Number of trades executed for balancing purposes (pursuant to Article 9(4) of the BAL Code)

Below we provide an overview of our monthly trading activities in the THE market area for balancing purposes (in accordance with Article 9(4) of the BAL Code) in GY 23/24 by MOL rank⁵. Within MOL 2, trading transactions in the own market area and in the neighbouring market area are also shown separately.

3.3.1 Our approach to determining the number of trades executed for balancing purposes

We have determined the number of trades executed to meet our balancing requirements on the basis of the data published for the THE market area for each hour of each gas day based on defined balancing criteria. Where several trades were entered into for the same term in response to the same balancing criterion, these are shown as a single trade. Where several trades were entered into for the same hour but in response to different balancing criteria, these are treated as individual trades. The trades thus determined are then summed up over the relevant period of analysis. Figure 16 and Figure 17 show the number of call orders for balancing products of the DA/RoD and Hour product types.

⁴ Link to document (in German): [Berechnungsmethodik Transportkostenaufschlag/Transportkostenabschlag \(tradinghub.eu\)](https://tradinghub.eu/Berechnungsmethodik_Transportkostenaufschlag/Transportkostenabschlag)

⁵ For MOL 3 see footnote 2

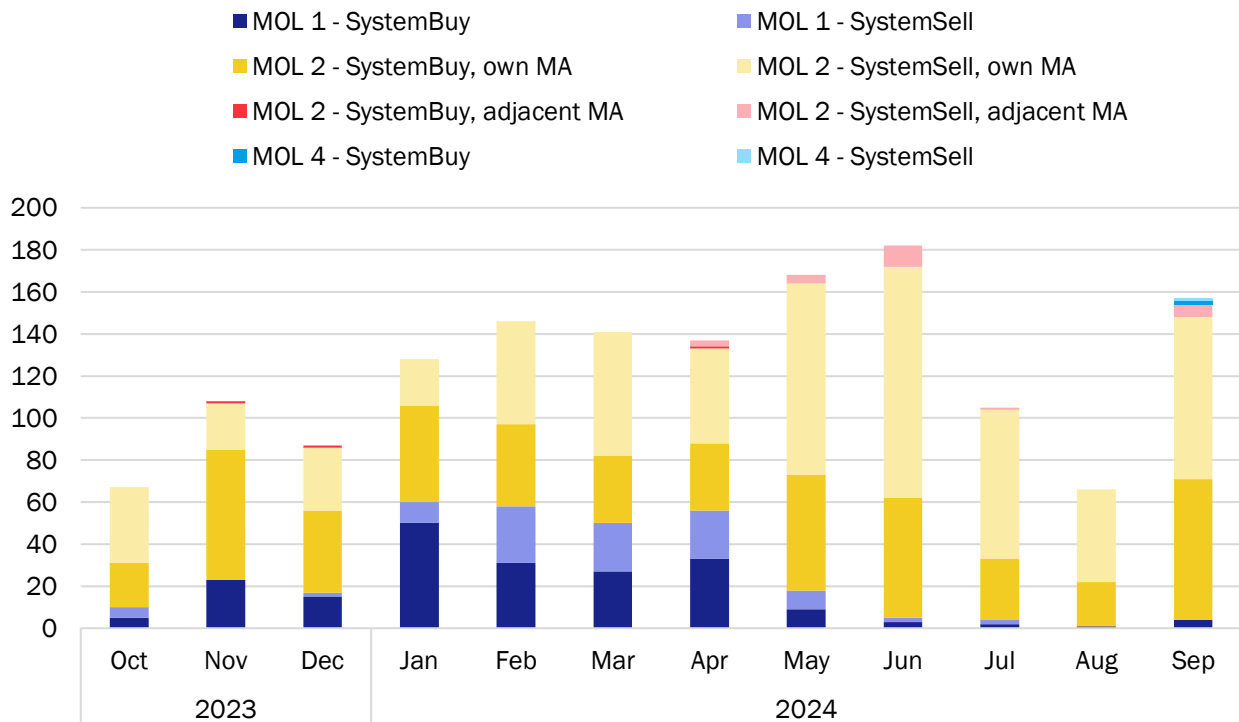


Figure 16: Number of trades (DA and RoD, by month)

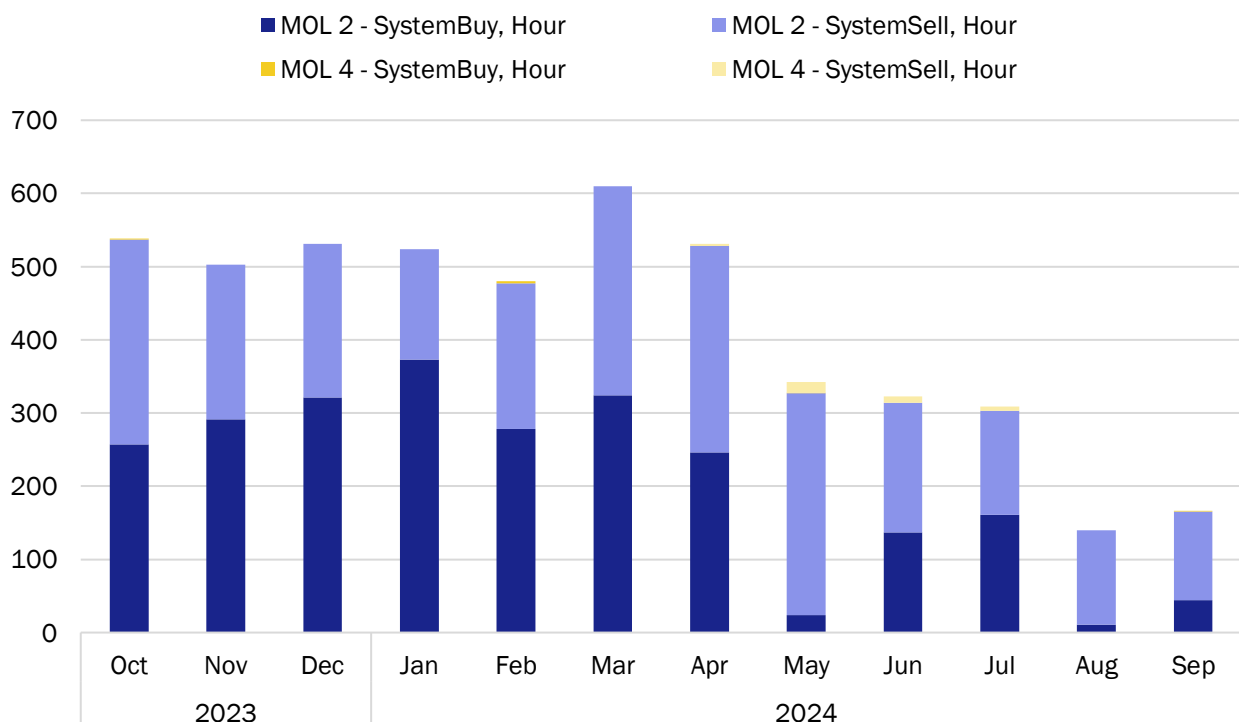


Figure 17: Number of trades (Hour, by month)

4 Effect and application of within-day obligation rules

4.1 Preliminary remark

Pursuant to the GaBi Gas 2.0 ruling, the system of within-day obligations also applies in the THE market area.

This chapter looks at the development of our within-day balancing actions carried out in opposite directions (i.e. gas days on which we have had to act on both sides of the market by both buying and selling gas for balancing purposes) as well as the evolution of the within-day flexibility quantities and within-day flexibility charges.

The instrument of within-day obligations is intended to incentivise the BGMs to strive for a balanced balancing group even during the gas day. For this purpose, hourly deviations between entry and exit quantities in the balancing group are recorded and aggregated over the day. If a defined limit is exceeded, these hourly quantities (referred to as a "flexibility quantity") can be billed. However, billing will only take place if the MAM has also incurred costs on this day due to balancing gas transactions in the opposite direction in merit order rank 1. For all RLM customers, the BGMs receive an hourly tolerance of 7.5 % of the daily RLM quantity offtaken, so that not every forecast inaccuracy potentially leads to billing. There is no tolerance for all other data series.

4.2 Within-day balancing actions in opposite directions by MOL

From a cumulative perspective, GY 23/24 is characterised by a significant oversupply of low-CV gas with a simultaneous conversion surplus in the direction from low-CV gas to high-CV gas.

Figure 18 shows the within-day system balancing actions taken in opposite directions per merit order rank (within MOL 1 and within MOL 2 for each gas quality) for GY 23/24⁶, with January 2024 showing the most extensive system balancing actions in opposite directions while no system balancing actions in opposite directions were taken in October and December 2023.

There is no clear systematic relationship between balancing actions in opposite directions, which can develop differently from year to year and within years, depending on the behaviour of market participants. The availability of network-related measures (especially swaps), which can only be taken by network operators on an 'as available' basis, can also have an effect on system balancing in opposite directions.

⁶ The chart summarises the DA and RoD system balancing actions, see footnote 1.

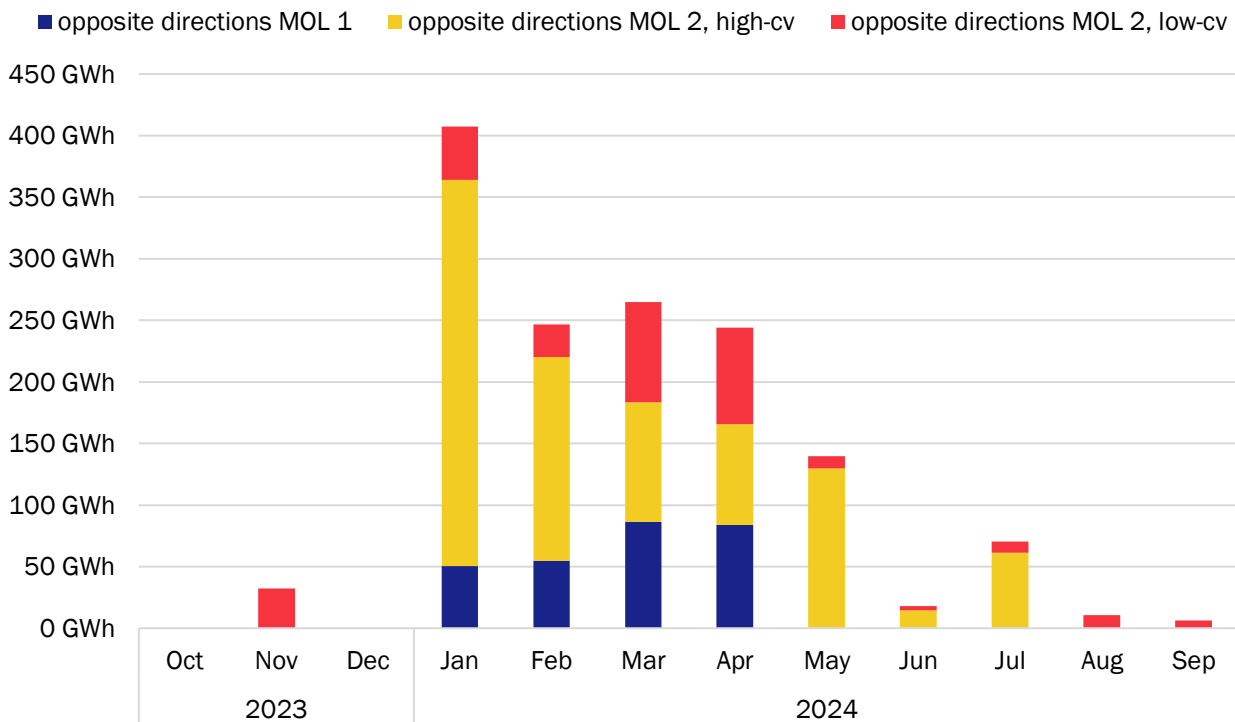


Figure 18: Within-day system balancing in opposite directions

4.3 Development of aggregate flexibility quantities

The “within-day flexibility quantity” represents the daily sum of the cumulative hourly imbalances outside the applicable tolerance limits as they have been determined for a balancing group. On this quantity the MAM levies a “within-day flexibility charge”, which is determined based on the average price difference between the corresponding balancing transactions effected in opposite directions within MOL 1 on the gas day in question. The within-day flexibility quantities are therefore only invoiced on gas days on which balancing actions have been taken in opposite directions within MOL 1.

Figure 19 shows the aggregate within-day flexibility quantities in GY 23/24 for each month. Compared to the previous GY 22/23, they have dropped by 31 % (see Annual System Balancing Report for GY 22/23). Contrary to the prior gas year, there were within-day balancing actions in opposite directions in merit order rank 1 in GY 23/24. Figure 20 shows the resulting flexibility cost contributions greater than EUR 0/MWh. The number of days on which a flexibility cost contribution was calculated was 21 (vs. 0 in GY 22/23). While these days are comparatively few in number, they remain erratically distributed, making the flexibility cost contribution a suitable way of providing incentives. The price difference between the purchase and sales prices is the decisive factor determining the level of the flexibility cost contributions calculated in each case.

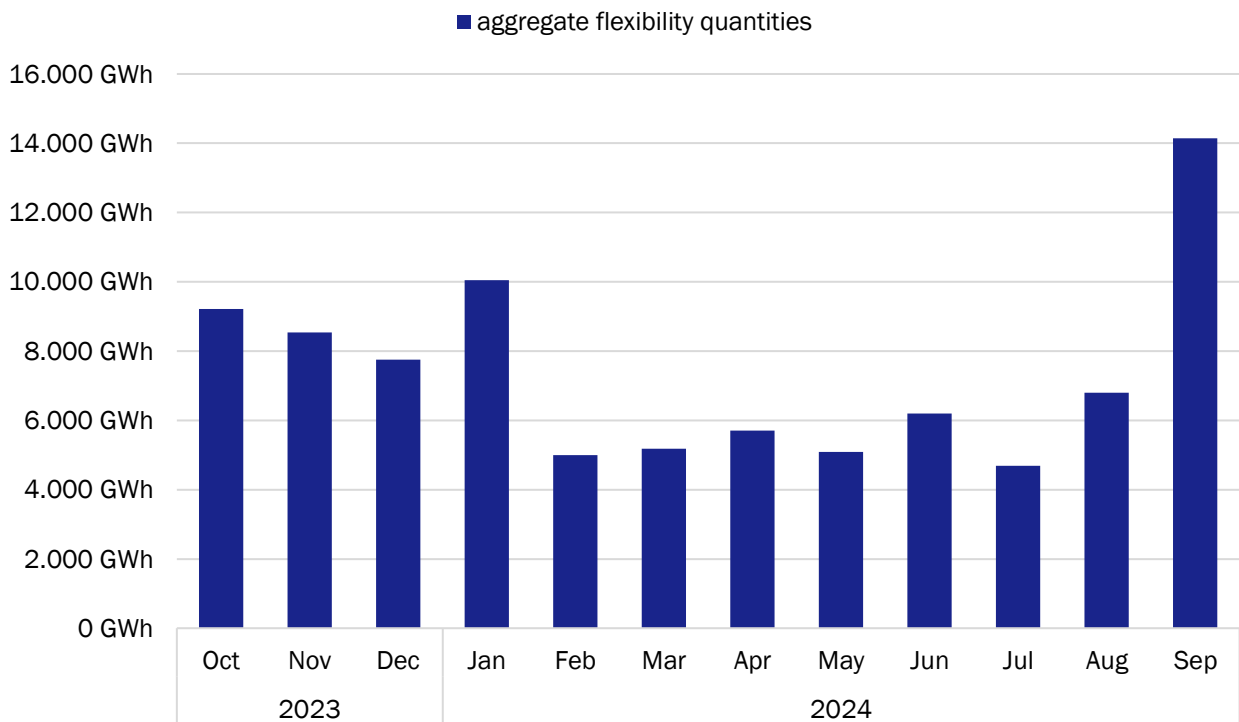


Figure 19: Virtual within-day flexibility quantities

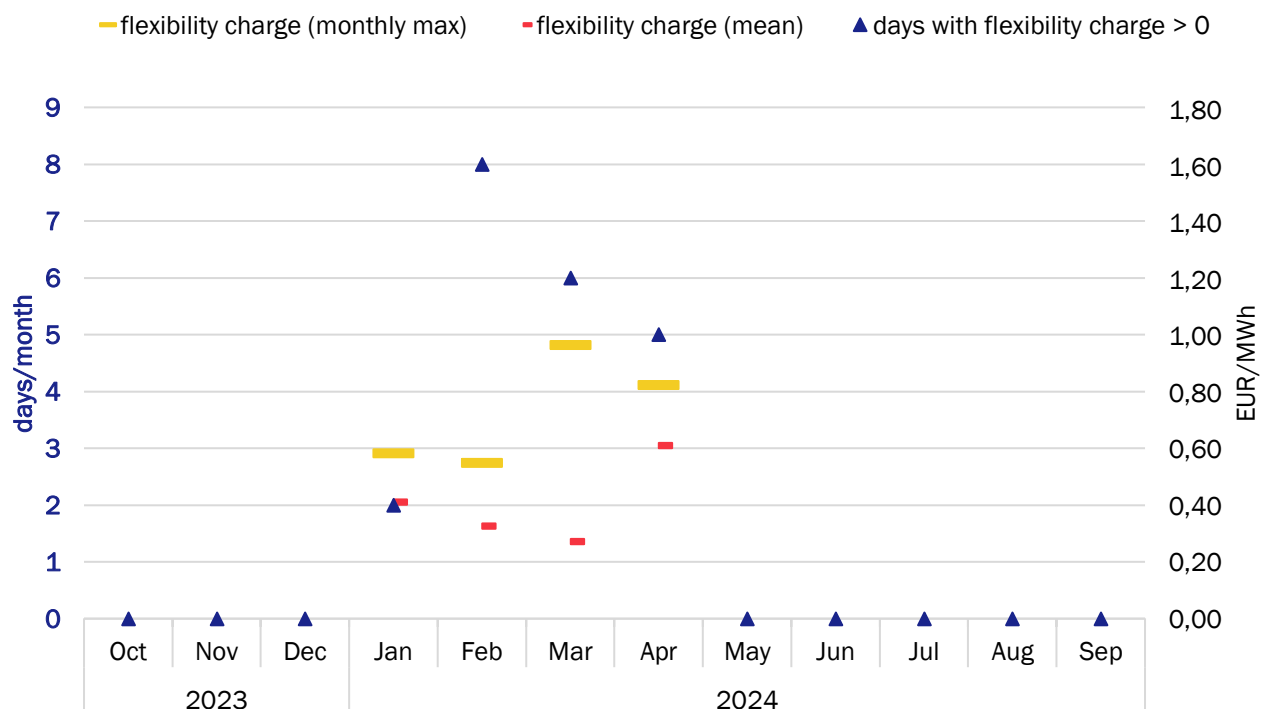


Figure 20: Within-day flexibility charges greater than EUR 0/MWh

5 Procurement and use of balancing services (MOL 4)

5.1 Introduction

MOL 4 products are used to hedge any balancing requirements in case the relevant requirements cannot be met via the exchange.

The following chapters provide an overview of the design of the different products, the tenders carried out and how the products are used. In addition, the reduction is examined in accordance with Article 8(6) of the BAL Code.

5.2 Long-term options

5.2.1 Product description

The bilateral balancing product Long-Term Options (LTO) serves to procure long-term reserves to help meet our balancing requirements, and it awards the MAM the right to buy or sell (as the case may be) gas to or from the relevant provider at any time throughout the agreed contract period. There are two product variants in the THE market area. THE has made a number of amendments to its contractual terms and conditions (Long-Term Options product description / Terms and Conditions for Balancing Actions) for GY 2023/24.

According to these amendments, connection points to LNG plants are no longer a permissible fulfilment option for both product variants for contract periods from 1 April 2024 in the same way as domestic production plants. Moreover, in the Hour product variant for contract periods from 1 July 2024, the fulfilment requirements for the first hour of a call order deviate from the so-called H-1 paragraph. This means that for hour 6-7 only, the reference value for assessing physical fulfilment is the nomination status at the time of the call order rather than the allocation of the previous hour. This change was implemented in consultation with the supplier side to take account of existing market conditions.

Where an LTO is contracted on an **RoD basis**, the relevant provider has an obligation to supply or receive a specified gas quantity at a constant hourly rate on a specified gas day on receiving an instruction to this effect from the MAM (this instruction is referred to as a “call order”), starting from the hour stated in the call order up until the end of the relevant gas day. This product variant is put out to tender on a zone-specific basis and serves to increase supply security in accordance with the BMWK policy paper (see chapter 5.7).

The following table provides an overview of the current product parameters of the RoD product variant:

LTO parameters	Specifications
Product variant	Rest of the Day (RoD)
Product category	Locational
Bid delivery rate	10 MWh/h per lot (minimum) (thereafter increments of whole numbers up to 1,000 MWh/h max.)
Price	Capacity charge and Commodity Charge Surcharge
Required service availability	Every gas day during the entire contract period (up to the maximum number of call days)
Call criterion	Exhaustion/technical unavailability of the higher merit order ranks
Lead time	3 hours

Table 3: LTO RoD product parameters

The **Hour product variant** serves to provide a long-term back-up for balancing purposes to help structure gas flows in the tendered balancing zones, with the option of calling off the delivery rate held by the provider on an hourly basis for the entire contract period.

The following table provides an overview of the current product parameters of the Hour product variant:

LTO parameters	Specifications
Product variant	Hour
Product category	Locational
Bid delivery rate	10 MWh/h per lot
Price	Capacity charge and commodity charge
Required service availability	Every hour throughout the entire contract periods
Lead time	3 hours

Table 4: LTO Hour product parameters

The contracting of LTOs – both in the **RoD product variant** and in the **Hour product variant** – takes place as part of a transparent tender process. The gas requirements to be put out to tender in each case are published beforehand as required under the GaBi Gas 2.0 ruling and the BAL Code. Bids for LTO contracts may be submitted by all BGMs who have successfully prequalified as a provider of balancing gas. Each LTO provider may specify a capacity charge that will be applied throughout the relevant contract period so as to remunerate them for procuring their availability to supply (SystemBuy) or receive (SystemSell) gas.

5.2.2 Tendering and use of RoD LTOs

The requirements put out to tender for the various LTO contract periods for the RoD product variant and the associated tender results are listed below⁷.

The tender results are shown in Table 5.

⁷ Any special LTO tenders are described separately in chapter 5.2.7.

Contract period	Balancing zone	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h) ⁸	Capacity charge (EUR) ⁹	Average commodity charge surcharge (EUR/MWh) ¹⁰
January 2024	HN, HM, HS, HOS, LW, LO, LGN, LGU, LNA	—	—	—	—	—
February 2024	HN, HM, HS, HOS, LW, LO, LGN, LGU, LNA	15.424	76,865	14,408	41,908,551	6.74
March 2024	HN, HM, HS, HOS, LW, LO, LGN, LGU, LNA	15.604	76,220	14,408	48,502,456	7.12

Table 5: THE tender for LTO RoD (SystemBuy)¹¹

Given the high storage levels and the reductions in gas consumption observed during the previous two gas years, only the months of February and March 2024 were put out to tender for GY 23/24 in consultation with the Federal Network Agency and the Federal Ministry for Economic Affairs and Climate Action.

The tendered requirements were fully met.

The contracted LTOs in the RoD product variant were only called off as part of test call orders in GY 23/24. The quantities called off as well as the associated costs and revenues are shown in the table below:

Month	SystemBuy quantity called off [MWh]	SystemBuy amount [EUR]	SystemSell quantity called off [MWh]	SystemSell amount [EUR]
February 2024	1.278	54,855.23	0	0.00
March 2024	780	27,315.54	0	0.00

Table 6: LTO RoD: quantities supplied/received

5.2.3 Review of options for reducing our use of LTO RoD pursuant to Article 8 (6) of the BAL Code

LTOs in the RoD product variant are a zone-specific balancing product and as such serve to ensure availability of gas in all balancing zones on a long-term basis. The required LTO reserves to be put out to tender are determined on the basis of the measures to improve security of supply as set out by the BMWK in its policy paper of 16 December 2015 (see chapter 5.7). The total supply capacities to be secured via LTOs in the RoD product variant are determined according to a logic agreed with the BMWK on the basis of historical data and are therefore subject to fluctuations.

We currently assume that the LTO quantities will continue to be put out to tender in the same way as for this gas year and the gas year before. However, against the backdrop of developments in GY 21/22 and GY 22/23 (especially the historically unique price developments, the Russian war of aggression against

⁸ Deviations between the stated requirements and the contracted service are due to the batch sizes offered.

⁹ The performance prizes awarded per lot are published on the MGV website.

¹⁰ Due to the large number of offers, each with different labour prices, the individual labour prices per lot have not been presented for the sake of clarity. The contracted labour prices per lot are published on the MGV website.

¹¹ A breakdown of the requirements and contracted services for the individual RE zones can be found in the appendix.

Ukraine, which was still ongoing at the time of going to press, and new statutory measures to ensure security of supply), it may be necessary to adjust the quantities put out to tender.

5.2.4 Tendering and use of Hour LTOs

The following provides an overview for the individual contract periods of the hourly balancing requirements LTOs in the Hour product variant and the tender results for each balancing zone.

The Hour product variant is used for hedging structuring requirements over the long term. However, except for the month of September 2024, tenders for the Hour product variant were only carried out for the low-CV West balancing zone, as the long-term hedging of structuring requirements in the low-CV gas East balancing zone is usually provided by the SCB product (for details, please refer to chapter 5.4). In September 2024, pre-planned extended maintenance work on the pipeline transmission system made it necessary to tender LTO Hour volumes in the low-CV gas East balancing zone.

Contract period	Direction	Balancing zone	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity charge (EUR)	Avg. commodity charge (EUR/MWh)
Q4 2023	SystemBuy	low-CV West	1,000	4,050	1,000	3,645,036	67.05
Q1 2024	SystemBuy	low-CV West	500	2,930	500	993,600	33.00
Q2 2024	SystemBuy	low-CV West	500	4370	500	675,974,40	32.54
Q3 2024	SystemBuy	low-CV West	500	4770	500	523,134	43.21
Sep 2024	SystemBuy	low-CV East	1,500	9,200	1,500	264.486	41.00

Table 7: LTO Hour contracts for low-CV West: SystemBuy (summary)

Contract period	Direction	Balancing zone	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity charge (EUR)	Avg. commodity charge (EUR/MWh)
Q4 2022	SystemSell	low-CV West	1,000	5,000	1,000	1,217,490	35.16
Q1 2023	SystemSell	low-CV West	500	2,500	500	649,328	27.50
Q2 2023	SystemSell	low-CV West	500	3750	500	451,939	20.72
Q3 2023	SystemSell	low-CV West	500	3660	500	470,000	29.79
Sep 2024	SystemSell	low-CV East	1,500	7,420	500	271,084	37.31

Table 8: LTO Hour contracts for low-CV: SystemSell (summary)

In GY 23/24, test call orders were issued in October 2023 and September 2024 in the SystemSell direction and in the SystemBuy direction. In May 2024 test call orders were issued in the SystemBuy direction only. Table 9 shows the quantities called off in each case and the associated revenues and costs.

Month	Balancing zone	SystemBuy quantity called off [MWh]	SystemBuy amount EUR]	SystemSell quantity called off [MWh]	SystemSell amount [EUR]
Oct. 2023	low-CV West	200	19,000.00	200	7,608.00
Nov. 2023	low-CV West	0	0.00	0	0.00
Dec. 2023	low-CV West	0	0.00	0	0.00
Jan. 2024	low-CV West	0	0.00	0	0.00
Feb. 2024	low-CV West	0	0.00	0	0.00
Mar. 2024	low-CV West	0	0.00	0	0.00
Apr. 2024	low-CV West	0	0.00	0	0.00
May 2024	low-CV West	130	7,097.30	0	0.00
Jun. 2024	low-CV West	0	0.00	0	0.00
Jul. 2024	low-CV West	0	0.00	0	0.00
Aug. 2024	low-CV West	0	0.00	0	0.00
Sep. 2024	low-CV West	0	0.00	100	3,910.00
	low-CV East	100	3,950.00	0	0.00

Table 9: LTO Hour contracts for low-CV West: quantities supplied/received

5.2.5 Review of options for reducing our use of Long-term Options (Hour) pursuant to Article 8(6) of the BAL Code

The LTOs contracted on an Hour basis are currently the only fallback option in MOL 4 in situations where the exchange is down or the products traded on EEX and used for structuring purposes are available only in insufficient quantities. The lead times specified for the “NextHour” spot contract traded on ICE Endex for delivery at the TTF are so short as to make it impossible to meet the (re)nomination deadlines applicable at the VIPs, which means that the product cannot be used to meet our structuring requirements.

THE could therefore only dispense with securing additional reserves for structuring purposes via MOL 4 if it was ensured that the existing MOL 2 balancing products offered on the exchange for the delivery of gas in individual hours were available at all times under any scenario. Given the maintenance windows that will continue to occur also in GY 23/24 (usually at least one hour) and the unscheduled exchange downtimes that sometimes occur, we cannot currently do without this additional security.

As regards the supply capacities to be secured via MOL 4 to structure gas flows in the low-CV network in our market area, we currently generally expect the requirements to be gradually reduced as the gas quality switchover process progresses.

5.2.6 LTO test call orders

The MAM is entitled to issue test call orders on RoD and Hour LTO contracts (MOL 4) in accordance with section 9.4 of the Long-Term Options product description. The purpose of these LTO test call orders is to verify whether balancing providers comply with their contractual communication and fulfilment obligations in order to ensure security of supply and warrant that the contracted balancing services are rendered in conformity with the agreed contracts.

The LTO providers to whom a test call order is to be issued are selected on a non-discriminatory basis according to pre-defined criteria agreed with the Federal Network Agency. A test call order to a provider

can be issued in particular where considerable time has passed since an LTO call order was last issued to the provider, if it the provider is a new provider or if there is evidence indicating that the provider may not duly comply with its obligations on receiving a call order. No advance notice of a test call order is given to the providers affected; instead, test call orders are treated as a deviation from the prescribed merit order and are published as such on an ex-post basis on the website. In addition, test call orders are only carried out in situations where we have an actual balancing requirement in the relevant direction.

In GY 23/24, a total of eleven LTO test call orders were issued with the same number of providers. Four call orders were issued for the LTO Hour product variant for SystemBuy transactions and two for SystemSell transactions. The LTO RoD SystemBuy product variant was called off five times. One infringement was identified and a contractual penalty was imposed. The remaining call orders were duly fulfilled.

5.2.7 Special LTO tenders

No special LTO tenders were carried out in GY 23/24.

5.3 Short-Term Balancing Services

5.3.1 Product description

The Short-Term Balancing Services (STB) balancing product is a non-standardised, short-term balancing product in MOL 4.

The STB product involves the supply of gas quantities to, or the receipt of gas quantities from, the MAM at a constant hourly delivery rate from the specified hour until the end of the gas day¹². It can only be offered by prequalified providers of balancing gas as part of short-term tenders. The call order is issued in the event of short-term local supply bottlenecks after the previous merit order ranks have been exhausted.

Balancing gas providers can also use the STB product to offer current flexibilities in the consumption of industrial end consumers that they cannot offer securely via the LTO product due to the fixed product parameters of the LTO product (in particular the lead time of 3 hours from call-off). The most important product parameters are summarised in the following table.

¹² On the days of the time change, it is a maximum of 23 and 25 hours, respectively.

STB parameters	Specifications
Product variant	Rest of the Day (RoD)
Product category	Locational
Bid delivery rate	10 MWh/h per lot (minimum) (thereafter in increments of whole numbers up to 1,000 MWh/h max.)
Price	Commodity charge
Required service availability	Short-term as per specified period
Call criterion	In case of short-term local supply constraints after exhaustion or technical unavailability of the higher merit order ranks
Call lead time	Flexible, can be selected by provider (1 to 23 hours)

Table 10: STB product parameters

5.3.2 Tendering and use

As a rule, the STB product is only used when there are short-term local supply constraints or when higher merit order ranks are unavailable for technical reasons, and only if the use of this product is urgently necessary to maintain security of supply. No tender for the STB product was carried out in the THE market area in GY 23/24.

5.4 Short-Call Balancing Services

5.4.1 Product description

The balancing product called “Short-Call Balancing Services” (SCB) is a flexibility service with a particularly short lead time, which is used for structuring purposes. It ranks at MOL 4.

The requirements to be met via the SCB product are put out to tender in the low-CV East balancing zone on a monthly basis. The tender is open to pre-qualified balancing providers who can provide the required delivery rates according to the product specifications at storage points (storage Epe-L) or exit points to industrial customers in the low-CV East balancing zone. The service is called as and when required with a lead time of no more than 60 minutes in direct coordination between the MAM or (possibly) the network operator involved and the storage operator or industrial customer.

The contractual framework for service provision at storage points is shown in Figure 21:

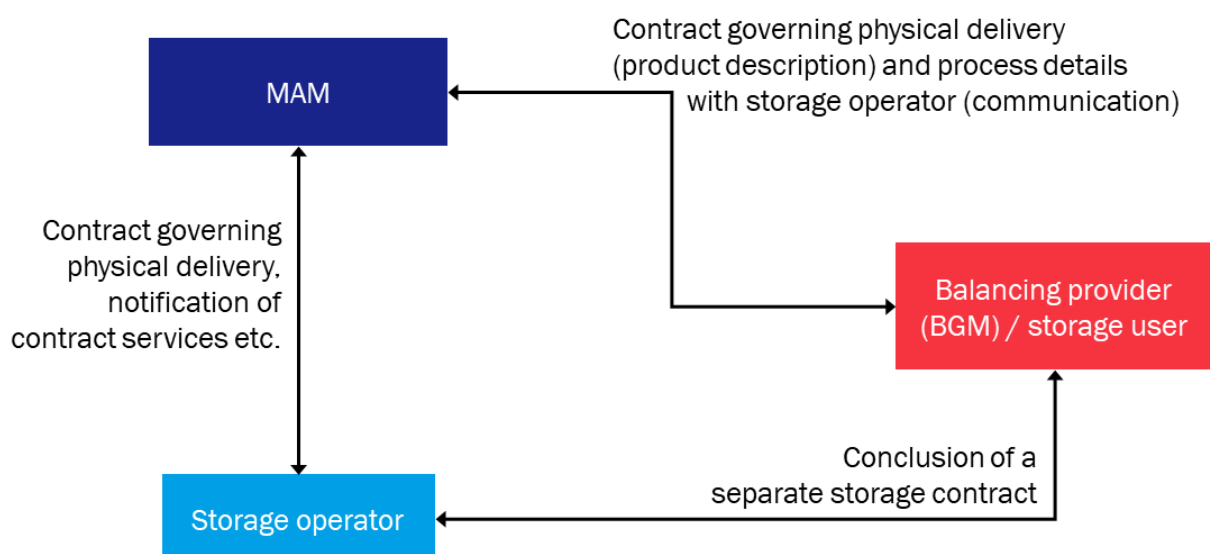


Figure 21: Contractual framework for SCB services offered at storage points

The number of possible call orders was increased from four to twelve per day with effect from 1 April 2024, subject to a maximum of 60 call orders per month. For contract periods that are not tendered for full months, the number of possible call orders overall is based on the published terms and conditions of the tender.

The current product specifications are shown in the following table:

SCB parameters	Characterisation
Product variant	Hourly
Product category	Locational
Bid delivery rate	10 MWh/h per lot
Point of delivery	At storage points (Epe-L) or exit points to industrial customers in the balancing zone low-CV East (LO)
Price	Capacity charges for provision and labour price for call-offs
Required service availability	No more than 12 call orders per lot per gas day during the contract period, limited to a total of 60 call orders per month
Call lead time	60 minutes (max.)
Call	Directly coordinated between MAM or (possibility) network operator and storage operator or industrial customer (no nomination process), where applicable taking into account a specified minimum call rate
Call criterion	Structuring needs requiring a lead time of less than 3 hours

Table 11: SCB product parameters

5.4.2 Tendering and use

The capacity costs and commodity charges resulting from the monthly tenders for the SCB product are shown in the following tables for each call direction.

Contract period	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity costs ¹³ (EUR)	Avg. commodity charge ¹⁴ (EUR/MWh)
Oct. 2023	1,500	5,000	1,500	696,228.00	35.74
Nov. 2023	1,500	4,910	1,500	597,664.00	48.51
Dec. 2023	1,500	4,750	1,500	620,399.00	45.88
Jan. 2024	1,500	4,660	1,500	615,308.55	34.41
Feb. 2024	1,500	3,980	1,500	599,416.00	27.77
Mar. 2024	1,500	4,500	1,500	584,489.00	26.17
Apr. 2024	1,500	4,440	1,500	537,956.00	25.73
May 2024	1,500	4,490	1,500	518,768.00	28.05
Jun. 2024	1,500	4,160	1,500	464,947.00	29.72
Jul. 2024	1,500	4,540	1,500	452,458.00	36.98
Aug. 2024	1,500	4,540	1,500	428,886.00	32.89
Sep. 2024	3,000	7,240	3,000	277,198.18	40.28

Table 12: SCB contracts: SystemBuy (summary)

Contract period	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity costs (EUR)	Avg. commodity charge (EUR/MWh)
Oct. 2022	1,500	1,640	1,500	4,892,998.00	35.54
Nov. 2022	1,440	1,440	1,440	8,127,778.00	46.13
Dec. 2022	1,500	2,380	1,500	8,457,683.00	47.31
Jan. 2023	1,500	1,830	1,500	8,636,388.00	35.96
Feb. 2023	1,500	2,880	1,500	5,478,162.00	28.63
Mar. 2023	1,500	2,900	1,500	3,932,437.00	26.11
Apr. 2023	1,500	2,240	1,500	2,961,621.00	24.50
May 2023	1,500	3,040	1,500	2,809,439.00	27.97
Jun. 2023	1,500	2,660	1,500	2,845,126.00	29.66
Jul. 2023	1,500	3,040	1,500	2,806,355.00	31.76
Aug. 2024	1,500	3,040	1,500	2,662,056.00	29.66
Sep. 2023	2,850	5,740	2,850	2,368,362.60	32.36

Table 13: SCB contracts: SystemSell (summary)

The capacity charges have tended to decrease over the course of GY 23/24.

The SCB product was called off in the SystemSell direction on a total of nine days in GY 23/24. It was partly used in response to substantial short-term renominations by a single market participant. For the same reason, it was used in the SystemBuy direction on one day in GY 23/24.

¹³ The capacity charges per lot are published on the MAM website.

¹⁴ Due to the large number of offers, each with different commodity charges, the individual commodity charges per lot have not been presented for the sake of clarity. The contracted capacity charges per lot are published on the MAM website.

Table 14 shows the quantities used in the SCB call orders per month in detail for GY 23/24. In Figure 22 they are shown as a year-on-year comparison.

Month	SystemBuy quantity called off [MWh]	SystemBuy amount [EUR]	SystemSell quantity called off [MWh]	SystemSell amount [EUR]
Oct. 2023	0	0.00	0	0,00
Nov. 2023	0	0.00	0	0,00
Dec. 2023	0	0.00	0	0.00
Jan. 2024	0	0.00	0	0.00
Feb. 2024	4,500	124,956.60	0	0.00
Mar. 2024	0	0.00	0	0.00
Apr. 2024	0	0.00	4,500	110,233.50
May 2024	0	0.00	20,400	573,037.00
Jun. 2024	0	0.00	13,500	400,554.00
Jul. 2024	0	0.00	9,000	285,865.20
Aug. 2024	0	0.00	0	0.00
Sep. 2024	0	0.00	0	0.00

Table 14: Use of SCB: Quantities supplied/received

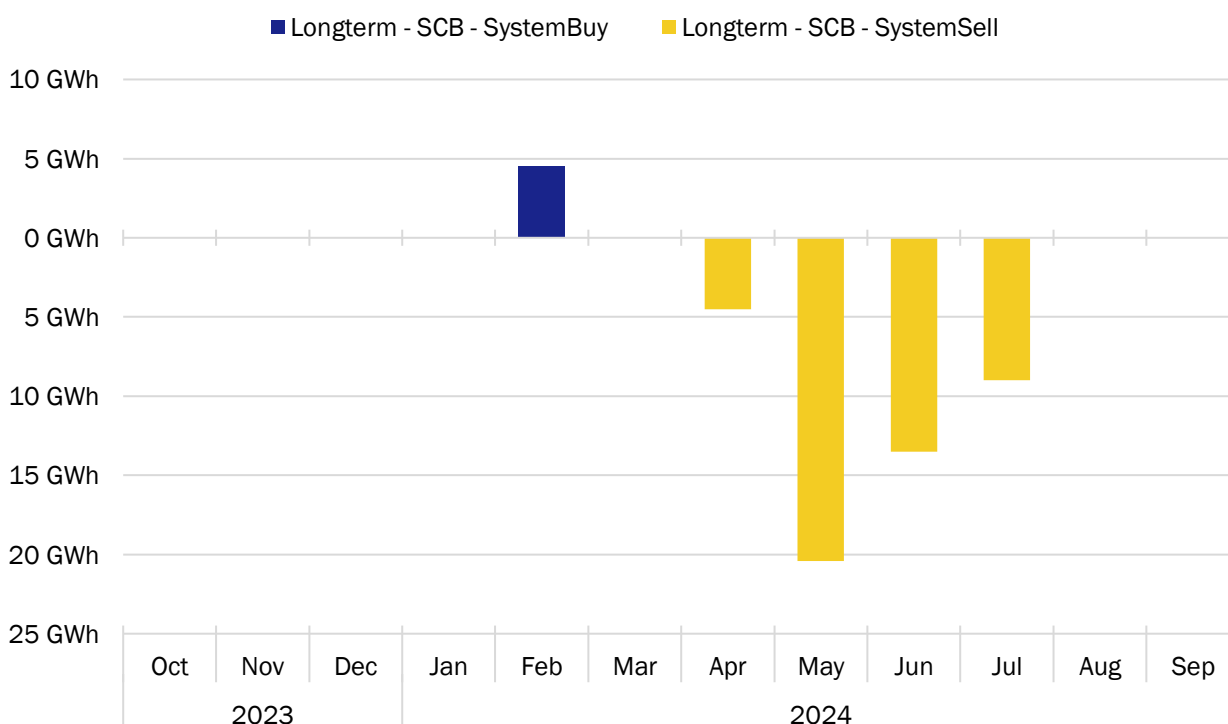


Figure 22: Use of SCB: Called-off quantities (by month)

5.4.3 Review of options for reducing our use of SCB pursuant to Article 8(6) of the BAL Code

External balancing requirements in the low-CV gas network of the THE market area can only be forecast to a limited extent with the lead time of three hours that applies to the other balancing products. In the past, short-term structuring requirements that require a shorter lead time were largely covered by the linepack of the low-CV gas network and by bilateral agreements between the German gas TSOs and the Dutch company GTS as part of an agreement on network operation. However, the linepack in the low-CV gas network area is not always sufficient to meet such structuring requirements, and structuring requirements can also only be taken into account as part of bilateral arrangements on an availability basis. The SCB product was introduced in May 2020 and has been used regularly since then to ensure that these short-term balancing requirements can be met, even against the backdrop of the ongoing market area conversion. As the market area conversion is still underway and given the experiences with the short-term high renominations of GY 23/24, there is still a need for the product.

5.5 Flexibility Services

5.5.1 Product description

The Flexibility Services product is a product allowing surplus/shortfall gas quantities in THE market area to be "parked" and "borrowed" on a short-term basis. Both the MAM and the provider can supply or receive gas quantities. The following directions are available:

- "to THE" means that the MAM temporarily receives gas quantities from the provider and returns the gas quantities received to the provider ("borrowing")
- "from THE" means that the MAM temporarily supplies gas quantities to the provider and takes the supplied gas quantities back from the provider ("parking")

The Flexibility Services product is a combined "borrowing/parking product", i.e. there is no transfer of title to the gas used. The service is used or made available within a few minutes, but at the latest within 90 minutes of the MAM's request. Thanks to this short lead time, the flexibility product can bridge the gap between short-term requirements and the delivery of commodities with a standardised three-hour lead time.

There is no call/nomination process by the MAM. Instead, a call is made directly by the relevant network operator. The gas quantities are supplied/received at specific physical entry or exit points with kWh accuracy and can only be offered for one network area of the market area-wide network operators in the THE market area.

The gas quantities supplied/received by the provider are taken back/returned at the place where they were originally supplied/received.

The period during which the provider must ensure the availability of the service product can be organised on a monthly, quarterly, half-yearly or annual basis. In addition, short periods can also be agreed in

specific cases determined by the MAM. Both fixed and interruptible products can be tendered and contracted.

The minimum lot size for the bids corresponds to a capacity of 50 MWh/h, above which the capacity offered can be increased in steps of ten MWh/h. In its offer for a fixed product, the provider can specify a positive constant price for the entire contract period, as well as a positive commodity charge.

5.5.2 Tendering and use of Flexibility Services

One tender was held for the Flexibility Services product on a fixed basis exclusively for low-CV gas for GY 23/24, whereby the individual months were tendered separately as contract periods.

The tender for the months of October 2023, November 2023, December 2023, January 2024, February 2024 and March 2024 was announced on 20 June 2023.

The tendered demand (firm availability in the balancing zones GUD-L, GTG-L and NWG) amounted to 1,300 MWh/h for the months of October 2023 and November 2023, 1,900 MWh/h for December 2023 and 2,300 MWh/h for each of the months of January 2024, February 2024 and March 2024.

Table 15 shows the details on the flexibility contracts concluded on a fixed basis in GY 23/24.

Contract period	Tendered capacity (MW)	Offered capacity (MW)	Contracted capacity (MW)	Capacity charge costs (EUR)
Oct. 2023	1,300	4,180	1,300	2,149,250
Nov. 2023	1,300	4,180	1,300	2,148,161
Dec. 2023	1,900	4,780	1,900	3,965,573
Jan. 2024	2,300	4,080	2,300	10,608,400
Feb. 2024	2,300	4,080	2,300	12,584,390
Mar. 2024	2,300	3,880	2,300	14,265,396
Apr. 2024	0	0	0	0
May 2024	0	0	0	0
Jun. 2024	0	0	0	0
Jul. 2024	0	0	0	0
Aug. 2024	0	0	0	0
Sep. 2024	0	0	0	0

Table 15: Firm flexibility contracts (low-CV gas only)

The contracted output for the “Flexibility Services” product did not have to be utilised on any day in GY 23/24, meaning that it does not need to be presented in a separate chart.

5.5.3 Review of options for reducing our use of Flexibility Services pursuant to Article 8(6) of the BAL Code

In the course of the harmonisation of the “Flexibility Services” and Short Call Balancing Services (SCB) products and in view of the ongoing market area conversion, THE, in consultation with the TSOs and BNetzA, decided to phase out the “Flexibility Services” balancing product in favour of the SCB balancing product at the end of GY 23/24. This made it possible to stop tending for the flexibility product after the winter period.

5.6 LRD product

5.6.1 Product description

The “Load Reduction” (LRD) balancing product places a special focus on activating the disconnection potential of industrial consumers for balancing actions and thus enables industrial consumers to offer their demand-side potential to the market area manager at any time. However, the offer is not submitted directly via the industrial consumer, but via the MAM as a pre-qualified provider of balancing gas.

If there is a corresponding demand for balancing gas, it is called up at short notice for the gas day under consideration at any one time. The lot size is variable (from 1 MWh/h). In the event of a call order, the MAM would call the entire quantity offered. The provider can choose the lead time as well as the price model (daily price on call or commodity charge in EUR/MWh).

In addition, the provider can select whether, in the event of a call order for the gas day in question, call orders should also be submitted for subsequent gas days (D+1 to D+7).

The complete product description is available for download on the THE website.

5.6.2 Tendering and use of LRD products

The LRD product was not used in GY 23/24 as there was not such demand.

5.7 Supply security measures in accordance with the BMWK policy paper

On 16 December 2015 the BMWK published a policy paper on measures to improve natural gas supply security in which it called on the MAM to implement two measures aimed at strengthening the balancing market.

One of these measures was to increase the contract volumes for the existing LTO balancing product, the other measure was to launch a demand response balancing product (DSM), also to be contracted on a long-term basis. The separate DSM product was merged with the LTO product with effect from 1 January 2018 and is no longer available as an independent balancing product. Since this date, the BMWK policy paper has been implemented exclusively via the LTO product (RoD product variant).

As in previous years, the tenders issued to ensure implementation of the BMWK policy paper were coordinated with the BMWK and the Federal Network Agency. The total delivery rates to be held available for supply security purposes were calculated according to the logic agreed with the BMWK and the Federal Network Agency. Allocation of the required reserves to the individual balancing zones was carried out by the gas TSOs operating in the market area.

6 Locational balancing products

Zone-specific balancing products are used to meet external balancing requirements that relate to a specific balancing zone. Trading participants and providers trading zone-specific balancing products have an obligation to cause a physical effect in the relevant balancing zone. Zone-specific balancing products used for structuring purposes are delivered on an hourly basis in an exactly specified delivery hour (Hour product variant). For other local products, delivery can be arranged on an RoD or DA basis.

Our use of Hour balancing products for the purpose of structuring gas flows at the low-CV West and low-CV East balancing zones during the gas day is described in chapter 3.1. The quantities called off via MOL 4 (LTO and SCB) are shown in chapters 5.2 and 5.4, respectively.

In GY 23/24 no balancing products with RoD and/or DA delivery were used in the THE market area within MOL 2. Call orders issued in MOL 4 were only test calls.

7 Allocation of costs to the balancing neutrality accounts

Below we describe the methodology we use to allocate our balancing costs between the balancing neutrality accounts currently in place; we also provide a review of whether the way in which we determine the applicable annual allocation keys continues to be appropriate, which is an annual requirement under the GaBi Gas 2.0 ruling.

All system balancing costs that can be divided between the balancing neutrality accounts in accordance with the cost causation principle based on the corresponding imbalances determined for network operators' network balancing accounts or BGMs' balancing groups are allocated using the applicable daily allocation key. Annual allocation keys are applied if the relevant cost items (e.g. capacity charges payable under LTO contracts) cannot clearly be allocated according to causation. As a rule, the applicable annual allocation key is calculated as the mean of all daily allocation keys applicable during the relevant gas year. This mean may be calculated using either an arithmetic or a volume-weighted approach.

In the THE market area the arithmetic approach is applied: We consider the determination of an arithmetic mean to be an appropriate approach as the balancing quantities procured for each day cannot directly be related to the cost and revenue items that are allocated to the individual balancing neutrality accounts based on the annual allocation key. Compared with the arithmetic approach, the application of a volume-weighted mean would increase complexity without providing a better measure of causation.

Figure 23 shows the costs and revenues per neutrality charge account resulting from the allocation logic described above.

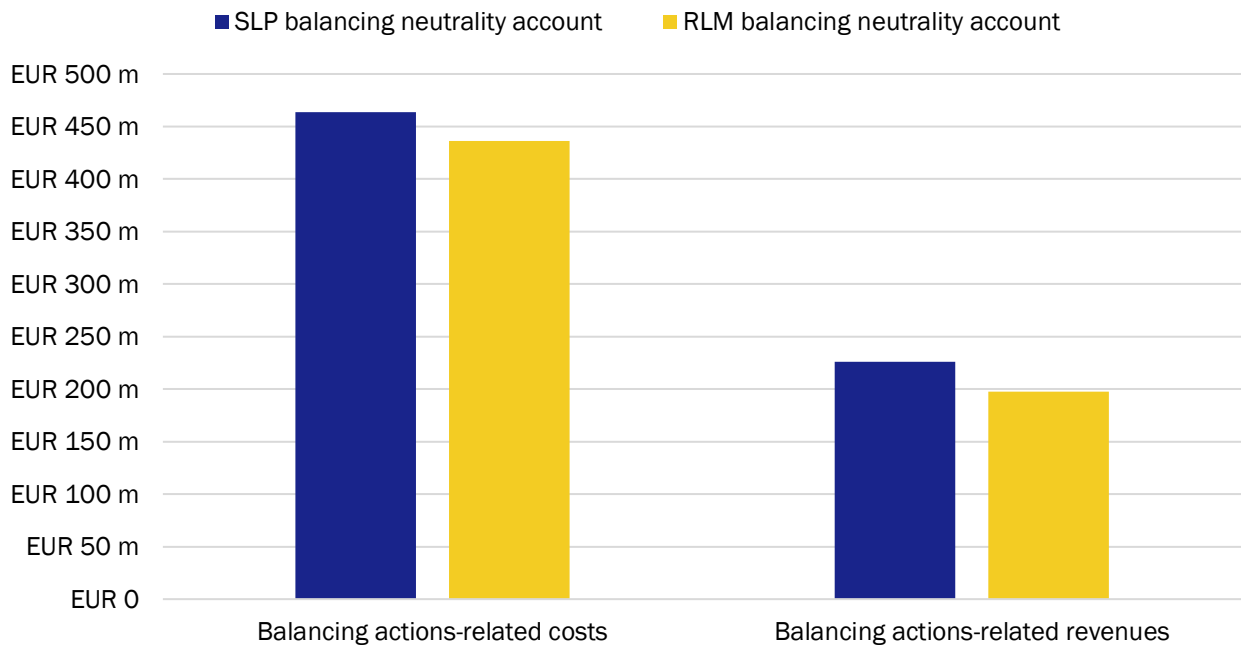


Figure 23: Costs and revenues from balancing gas per neutrality charge account¹⁵

¹⁵ The costs and revenues shown for the months of July to September 2023 have been calculated on a provisional basis and were not yet finalised at the time this report was drawn up.

8 Development of fees and charges levied in market area

Table 16 shows the fees and neutrality charges in accordance with GaBi Gas 2.0 and Konni Gas in the market area for the periods from 1 October 2023 up to and including 30 September 2024 and from 1 October 2024 up to and including 30 September 2025, respectively.

Fees/neutrality charges	from 1 October 2023	from 1 October 2024
Conversion fee (H->L)	EUR 0.21/MWh	EUR 0/MWh
Conversion fee (L->H)	none / no longer applied according to Konni Gas	none / no longer applied according to Konni Gas
Conversion neutrality charge	EUR 0/MWh	EUR 0/MWh
RLM balancing neutrality charge	EUR 0/MWh	EUR 0/MWh
SLP balancing neutrality charge	EUR 0/MWh	EUR 0/MWh

Table 16: Fees and neutrality charges in the market area

THE expects to generate a surplus in accordance with GaBi Gas 2.0 in the RLM balancing neutrality charge account for the neutrality charge period from October 2023 to September 2024 (the ‘surplus period’) up until the editorial deadline, which under consideration the liquidity buffer, is expected to exceed the projected deficit for the upcoming neutrality charge period. This surplus will be distributed to the balancing group managers in February 2025 in accordance with the GaBi Gas 2.0 ruling and on the basis of the contractual provisions following receipt of all the final data for the potential surplus period. At the time of going to press, it is assumed that a high three-digit million amount will be distributed in total. In a first step the surplus will be distributed to the active balancing group managers in the surplus period up to the RLM balancing neutrality charge they paid during the surplus period. Any remaining surplus will then be distributed to all balancing group managers based on their RLM quantity relevant for balancing purposes in the surplus period and appropriate gross calorific value correction. Since the RLM balancing neutrality charge was 0 in the potential surplus period, there will be a distribution or offsetting in accordance with level 2. The distribution will affect the RLMoT and RLMmT data series types.

There will be no distributions for the SLP balancing neutrality charge account or for the conversion neutrality account.

More detailed information on how the fees and charges are calculated can be found in the calculation documents for the conversion fee and the conversion neutrality charge¹⁶ and for the balancing neutrality charges¹⁷. More details on the risks related to our external balancing actions and how they factored into the calculation of the balancing neutrality charges can also be found in the relevant calculation document.

¹⁶ Basis of calculation document conversion fee and conversion neutrality charge (www.tradinghub.eu)

¹⁷ Basis of calculation document balancing neutrality charges and liquidity buffer (www.tradinghub.eu)

9 Summary

In GY 23/24, as in previous years, THE engaged in system balancing transactions almost exclusively via the EEX's spot market books. A total of 32,588 GWh of balancing gas was purchased in GY 23/24 (vs. 32,343 GWh in GY 22/23) and 26,108 GWh was sold (vs. 55,383 GWh in GY 22/23). Expenditure for external balancing transactions (excluding capacity charges) totalled EUR 1,142 million in the full GY (vs. EUR 2,066 million in GY 22/23). Income from the external balancing actions totalled EUR 846 million in GY 23/24 (vs. EUR 3,253 million in GY 22/23).

GY 23/24 was dominated by gas purchases for system balancing purposes, making it a rather typical gas year. This trend was already apparent at the end of GY 22/23. For the gas year as a whole, balancing gas sales were 33% below the previous gas year, while purchases remained roughly the same. Prices continued to fall, as they did in GY 22/23. The average VTP price was EUR 34/MWh, which was below the VTP price in the previous gas year (EUR 55.43/MWh). The combination of a significant drop in sales quantities and prices meant that the system balancing costs, including capacity charges, exceeded revenues by EUR 508.7 million.

In GY 23/24, small gas quantities were used for test purposes at the trading hubs in Denmark (ETF) and Belgium (ZTP), which increases the MAM's options for price-optimised gas procurement in the future. Compared to the previous gas year, significantly more price-optimised balancing gas was sold at the TTF, which was a consequence of the oversupply of low-CV gas.

In contrast to the previous gas year, a within-day flexibility charge was levied on 21 days in GY 23/24 due to system balancing transactions in the opposite direction during the day. The SCB product too had to be used for short-term structuring on the low-CV-gas side. As in the previous gas years, LTOs were only called off for test purposes.

The “Flexibility Service” product was tendered for the last time in GY 23/24, but was not used. It was phased out in favour of the SCB balancing product at the end of GY 23/24 in consultation with the TSOs and BNetzA, and was no longer tendered after the winter period.

The LRD product in merit order rank 4 introduced in GY 22/23 was again not utilised in GY 23/24.

In February 2025, THE will distribute a surplus of the RLM charges for the 2023/2024 period to the BGMs. No distributions are made for the SLP balancing neutrality charge account or for the conversion neutrality account.

Appendix to the system balancing report for the THE market area

Overview of balancing costs and revenues in GY 23/24

Balancing costs/revenues	Costs (SystemBuy)	Revenues (SystemSell)
MOL 1	127,612,944	26,743,144
DA	34,978,597	3,321,007
RoD	92,634,347	23,422,138
MOL 2	1,014,342,131	818,049,555
DA	535,378,835	482,333,557
RoD	419,370,537	269,990,115
Hour	59,592,759	65,725,883
MOL 4	237,175	1,381,208
RoD ¹⁸	82,171	0
Hour (LTO)	30,047	11,518
Hour (SCB)	124,957	1,369,690
Total	1,142,192,249	846,173,907

Table 17: Balancing costs/revenues by MOL (DA, RoD and Hour; commodity charges only)¹⁹

Balancing costs	Capacity charge (SystemBuy)	Capacity charge (SystemSell)
Long-term options, RoD	90,411,007	0
Long-term options, Hour	7,637,762	4,539,134
Short-call balancing services	9,082,204	63,047,895
Flexibility services	48,444,771	0
Total	155,575,744	67,587,028

Table 18: Costs from MOL 4 contracts (capacity charges only)

¹⁸ The costs are made up of STB and LTO RoD commodity charges.

¹⁹ The bilateral short-term balancing products in MOL 3 were discontinued as of 1 January 2018 (see section 8 of the System Balancing Report for GY 17/18); MOL 3 has therefore no longer been listed in the tables since the System Balancing Report for GY 18/19.

Overview of balancing gas quantities in GY 23/24

Balancing gas quantities [MWh]	Quantities (SystemBuy)	Quantities (SystemSell)
MOL 1	3,832,576	951,646
DA	1,020,144	104,232
RoD	2,812,432	847,414
MOL 2	28,748,137	25,109,432
DA	15,429,464	14,394,672
RoD	11,714,493	8,562,723
Hour	1,604,180	2,152,037
MOL 4	6,988	47,700
RoD ²⁰	2,058	0
Hour (LTO)	430	300
Hour (SCB)	4,500	47,400
Total	65,175,402	52,217,556

Table 19: Balancing gas quantities by MOL (DA, RoD and Hour)

Tender results for LTO RoD per balancing zone

Contract period	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity charge (EUR)	Avg. commodity charge surcharge (EUR/MWh)
Feb. 2023	7,411	41,394	7,420	27,124,431.20	8.80
Mar. 2023	7,411	40,659	7,420	31,172,778.96	9.77

Table 20: LTO RoD contracts – SystemBuy (summary per contract period, HS zone)

Contract period	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity charge (EUR)	Avg. commodity charge surcharge (EUR/MWh)
Feb. 2023	1,151	7,561	1,151	1,230,526.46	9.70
Mar. 2023	1,151	6,721	1,151	1,877,804.92	1.91

Table 21: LTO RoD contracts – SystemBuy (summary per contract period, HN zone)

²⁰ The quantities include STB and LTO RoD calls.

Contract period	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity charge (EUR)	Avg. commodity charge surcharge (EUR/MWh)
Feb. 2023	1,151	6,551	1,151	1,272,518.00	0.00
Mar. 2023	1,151	6,551	1,151	1,501,504.00	0.00

Table 22: LTO RoD contracts – SystemBuy (summary per contract period, HM zone)

Contract period	Total required (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity charge (EUR)	Avg. commodity charge surcharge (EUR/MWh)
Feb. 2023	1,223	10,229	1,226	1,115,357.82	11.84
Mar. 2023	1,223	9,409	1,226	1,154,582.60	16.34

Table 23: LTO RoD contracts – SystemBuy (summary per contract period, HOS zone)

Contract period	Total required ²¹ (MWh/h)	Offered delivery rate (MWh/h)	Contracted delivery rate (MWh/h)	Capacity charge (EUR)	Avg. commodity charge surcharge (EUR/MWh)
Feb. 2023	3,454	11,130	3,460	11,165,717	1.78
Mar. 2023	3,454	12,880	3,460	12,795,786	2.26

Table 24: LTO RoD contracts – SystemBuy (summary per contract period, low-CV gas: LW, LO, LGN, LGU & LNA zones)

²¹ The balancing requirement for the provision of low-CV gas volumes was tendered jointly for the balancing zones low-CV West and low-CV East.

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