

# **Report on the system balancing actions and related procurement activities in the GASPOOL market area in the gas year 2018/2019**

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## 1 Introduction

The administrative ruling on gas balancing handed down by the German national regulatory authority Bundesnetzagentur (below referred to as the “Federal Network Agency”) on 19 December 2014 (the so-called “GaBi Gas 2.0” ruling) places an obligation on the German market area managers (MAMs) to report on their system balancing activities once each year. In their annual reports the MAMs are to provide an account of their balancing experiences in the context of their internal and external balancing actions and related procurement activities carried out in the relevant gas year (GY). This report describes our system balancing activities and related balancing quantities for each rank of the applicable merit order for balancing actions (usually shortened to “MOL” for “merit order list”) along with the associated costs and revenues. Please note that all data and charts also include balancing actions that were taken for gas quality conversion purposes, which are not considered separately.

In addition, this report describes our use of balancing services, our balancing-related procurement activities in adjacent market areas, namely at the Title Transfer Facility (TTF), as well as our use of our balancing platform. We also provide a summary of our experiences in connection with the implementation of the 2015 policy paper on measures to improve natural gas supply security published by the German Federal Ministry for Economic Affairs and Energy (throughout this report referred to as the “BMW i policy paper”). The present document contains the fourth System Balancing Report published by GASPOOL.

## 2 Internal balancing actions

In this chapter of the GASPOOL System Balancing Report we describe the so-called “internal” balancing actions carried out in the market area GASPOOL (i.e. balancing actions effected by network operators by way of linepack and network storage measures). Use of the internal balancing tools available in our market area reduces our need for balancing products offered in the market – in return for a fee – by third-party balancing providers (those would be what we refer to as “external” balancing actions) and is the preferred option.

### 2.1 Graphical presentation of internal balancing actions and related positive and negative balancing quantities

The chart below shows the internal balancing actions carried out in both directions (positive/negative) in aggregate for both gas qualities (high-cal gas – below referred to as “high CV gas” – and low-cal gas – below referred to as “low CV gas”) for each calendar month in GY 2018/2019. The quantities shown here also include the quantities transferred between the two quality sectors of the multi-quality market area by the transmission system operators (TSOs).

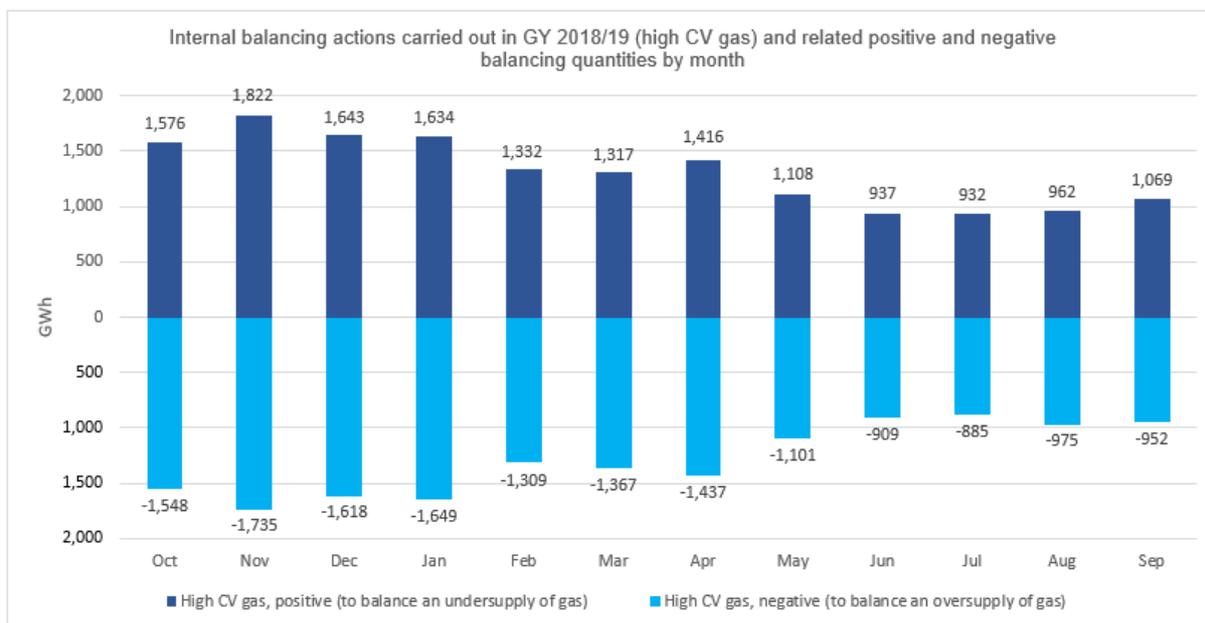


Figure 1: Graphical presentation of internal balancing actions in the high CV network areas and related positive and negative balancing quantities by month

As can be seen in Figure 1, the highest level of internal balancing activities was required in the high CV network areas in November, December and January.

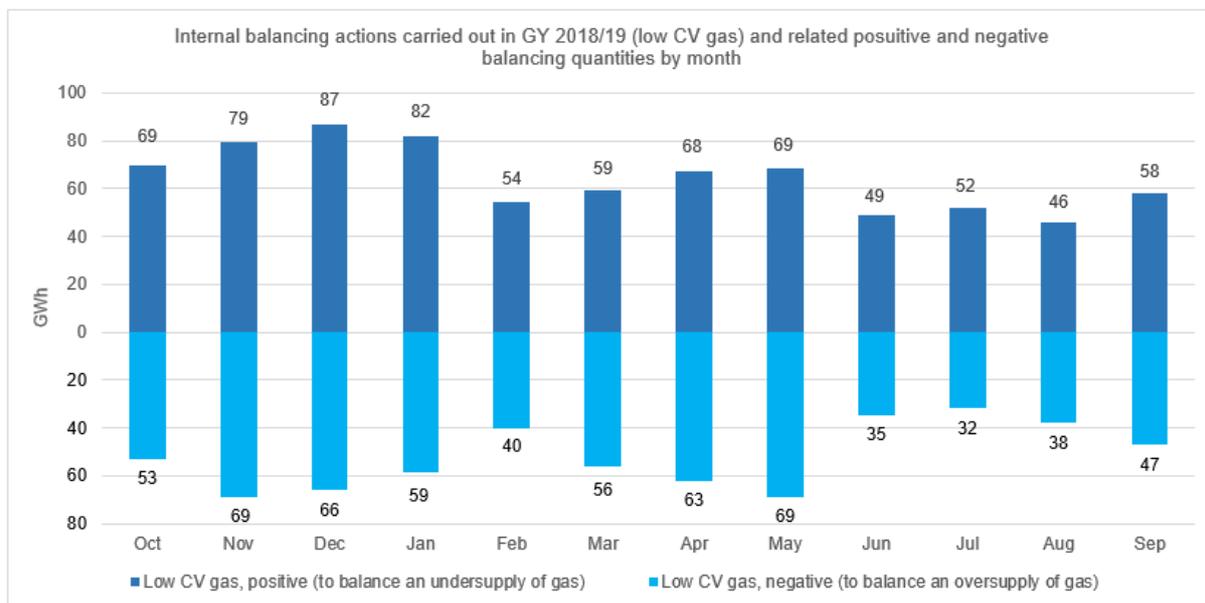


Figure 2: Graphical presentation of internal balancing actions in the low CV network areas and related positive and negative balancing quantities by month

As Figure 2 shows, the internal balancing actions taken in the low CV sector of our market area run up to around 5% of the magnitude of those taken in the high CV sector. Overall, positive internal balancing actions across both gas qualities were around 21% up from the previous year, negative internal balancing actions up 19%.

### 3 External balancing actions and related procurement activities

In this chapter of the GASPOOL System Balancing Report we describe the market-based (“external”) balancing actions carried out in the market area GASPOOL. Separate analyses are provided for the different ways in which we can take external balancing actions (purchases and sales of gas) as well as for the individual ranks of the merit order (“MOL”). Detailed cost, revenue and quantity information is given in the tables provided in Annex I.

Our total external balancing expenditure for the entire gas year amounted to EUR 250.207m (previous year: EUR 485.963m, down 48.5%) including all capacity charges. In relation to our sales of gas we generated external balancing revenues of EUR 101.808m (previous year: 232.452m, down 56.2%). The main reasons for the sharp decline are, for one thing, the drop in the price level and the absence of an extreme cold period as in February/March 2018.

### 3.1 Overview of buy and sell balancing actions by MOL

#### 3.1.1 MOL 1

The chart below shows the aggregate balancing quantities procured within MOL 1 for each month together with the associated costs and revenues. MOL 1 is procured via the global order book on PEGAS.

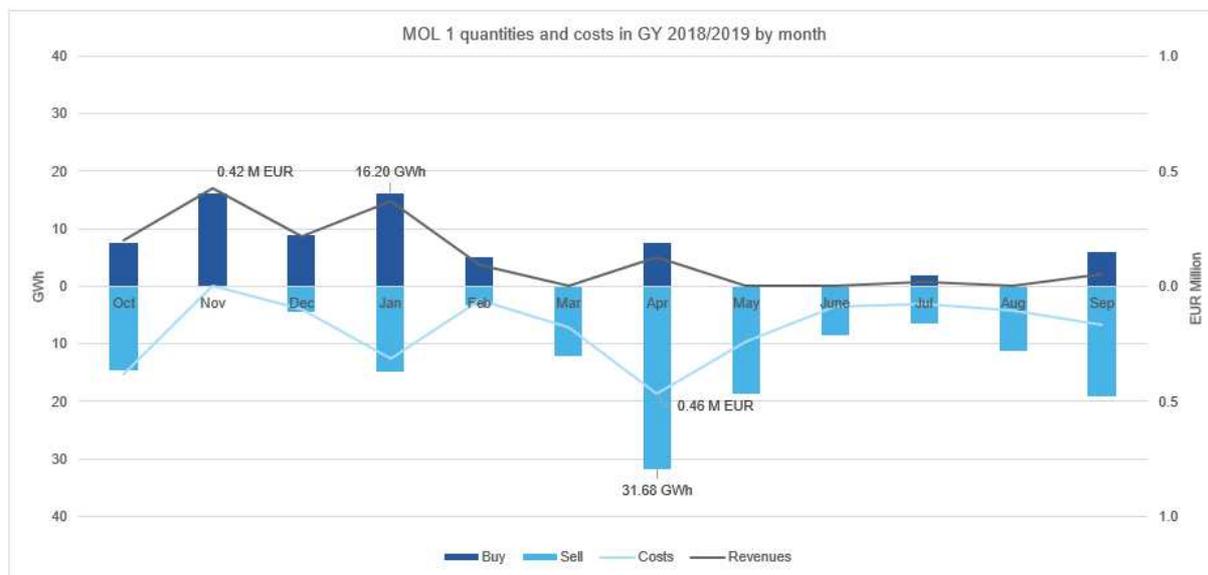


Figure 3: MOL 1 quantities and costs in GY 2018/2019 by month

The largest monthly quantity of 16.20 GWh was purchased in January (previous year: 20.39 GWh in August, down 25.87%) at a cost of EUR 0.31m (previous year: EUR 0.47m in August, down 34.05%). On the sell side, quantities were sold all year round, apart from November. The largest monthly sell quantity of 31.68 GWh was sold in April, bringing in revenues of EUR 0.46m (previous year: March, 38.55 GWh, down 21%). For GY 2018/2019, we bought a total of 69.365 GWh (previous year: 52.1 GWh, up 18.1%) at a cost of EUR 1.508m (previous year: EUR 1.404m, up 7.4%). Overall, we sold 144.5 GWh (previous year: 122.8 GWh, up 17.7%) during the same period at a cost of EUR 2.169m (previous year: EUR 2.579m, down 15.9%).

#### 3.1.2 MOL 2

Merit order rank MOL 2 comprises all other standardised products traded on the exchange that are used by the MAMs for their external balancing actions. GASPOOL effected MOL 2 transactions to trade both high CV and low CV gas for delivery at the GASPOOL VTP using the quality-specific order books, to trade gas through the zone-specific order books on PEGAS and also to trade spot contracts for delivery of gas at the virtual trading point TTF in the adjacent market area operated by the Dutch TSO Gasunie Transport Services B.V. (GTS). Gas contracts traded via the order books mentioned for delivery at the GASPOOL VTP are subject to specific physical delivery restrictions. Trading participants effecting trades via these order books have an obligation to cause a physical effect in a magnitude corresponding to the quantities traded, which is a necessary requirement for us to be able to manage system imbalances.

The chart below shows the balancing quantities procured in MOL 2 as well as the associated costs and revenues by month.

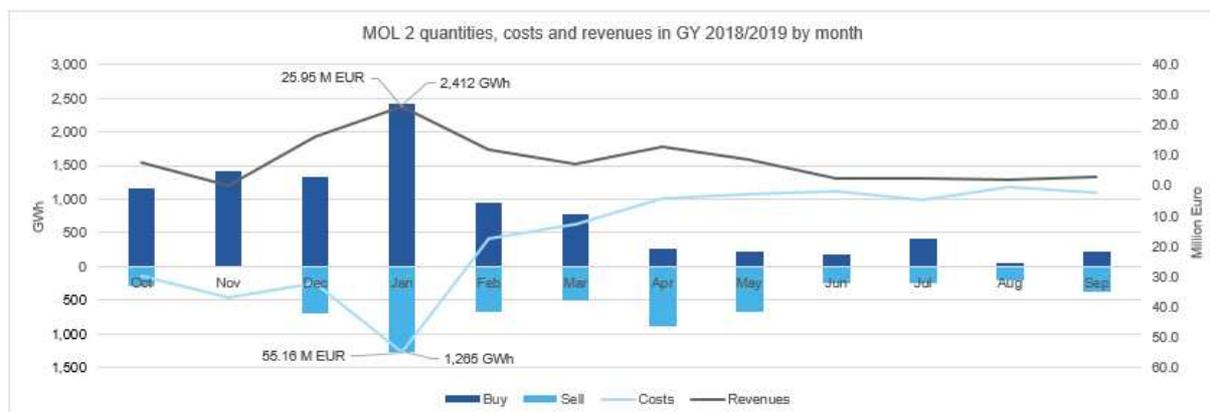


Figure 4: MOL 2 quantities, costs and revenues in GY 2018/2019 by month

In the gas year covered by this report we purchased a total of 9.37 TWh MOL 2 quantities (previous year: 19.9 TWh, down 52.9%) amounting to EUR 201.8m (previous year: EUR 468.8m, down 56.94%). At the same time, sales of 6.09 TWh (previous year: 11.7 TWh, down 47.94%) were effected with revenues of EUR 99.64m (previous year: EUR 229.9m, down 56.65%).

As can be seen in Figure 4, most of our MOL 2 buy transactions were effected in the winter months of the GY and especially in January at 2.4 TWh. On the sell side, relevant quantities were sold all year round, apart from November, with the largest monthly sell quantity of 1.265 TWh being sold in January.

Figure 5 presents the lowest and highest prices in EUR per MWh that we paid and received in connection with our MOL 2 buy and sell transactions for each gas day. The respective maximum price for the day is shown for the buy transaction and the minimum price for the corresponding day for the sell direction.

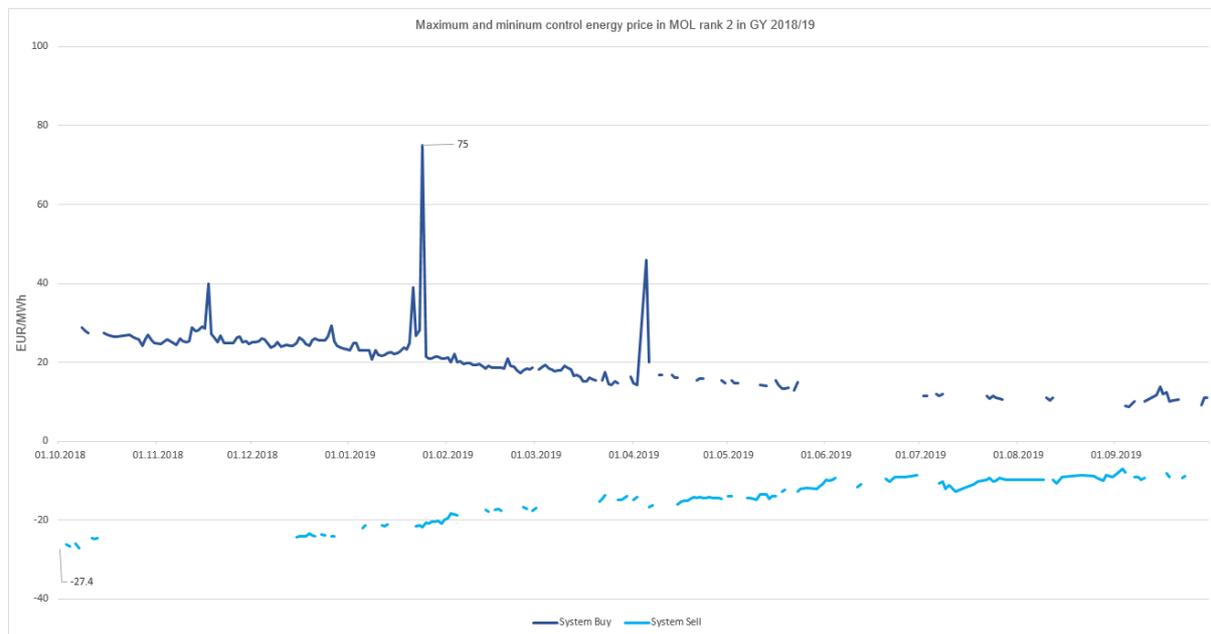


Figure 5: Maximum and minimum prices for MOL 2 balancing actions in GY 2018/19

The highest MOL 2 buy price, 75.0 EUR/MWh, was paid on 24 January 2019 and related to a trade effected in the low CV gas market for delivery in the GUDH network area. The lowest buy price, 8.50 EUR/MWh, was also in the low CV gas market on 4 and 5 September 2019. The highest MOL 2 sell price, 27.4 EUR/MWh, was obtained on 1 October 2018; the lowest sell price of 5.0 EUR/MWh was received for a locational trade in the NOWEGA order book on 25 August 2019.

### 3.1.3 MOL 3

No balancing products are available within MOL 3.

### 3.1.4 MOL 4

MOL 4 comprises the balancing products “Long-Term Options” (LTO), “Short Term Balancing Services” (STB) and “Flexibility”. LTOs were only contracted to manage bottlenecks. We contracted monthly LTO reserves of 1.3 GW of low CV gas for the month of January 2019 and 2.3 GW for the months of February and March 2019 (previous year: 1.3 GW for each month). The capacity charges payable under these contracts totalled EUR 11.19m (previous year: EUR 1.78m, up 529%). The total capacity charges paid in relation to our “Flexibility” contracts amounted to EUR 39.71m.

Detailed information on our LTO contracts is provided in section 5.1, our Flexibility product and its use are described in chapter 5.

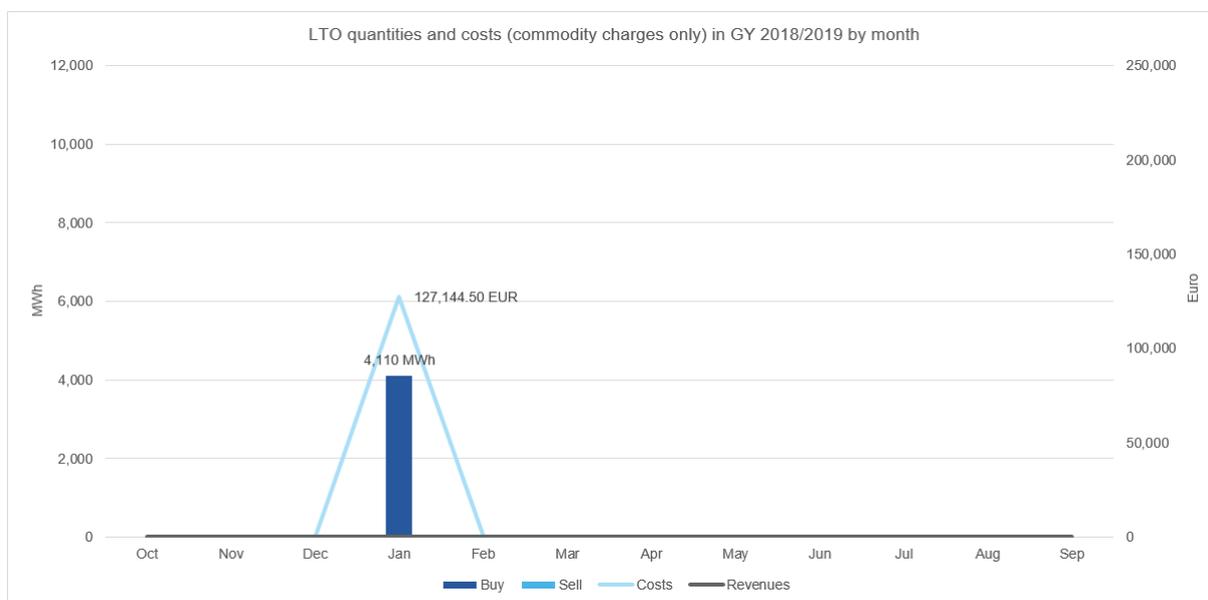


Figure 6: LTO quantities and costs (commodity charges only)

Figure 6 shows the use of Long-Term Options. The use on 21 January 2019 was based on a test call order, with 4,110 MWh being requested at a cost of EUR 127,144.50.

### 3.1.5 High-cal gas

The chart below provides an overview of the commodity transactions across all merit order ranks (SystemBuy and SystemSell) for high CV gas in each month. The chart shows the cumulative daily quantities in GWh along with the cumulative costs and revenues in millions of EUR by month.

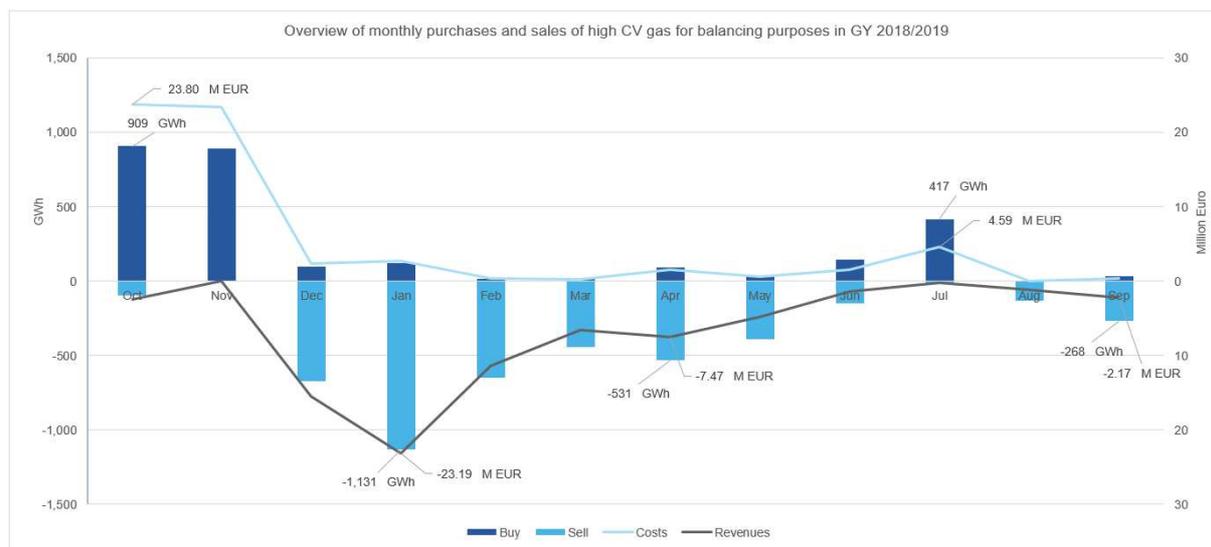


Figure 7: High CV gas balancing transactions (buy and sell) in GY 2018/2019 by month

As can be seen in Figure 7, sales of high CV gas prevailed from December to June 2018, while there were predominantly purchases in the months of October and November and June/July. This development thus matches the pattern of the previous year, although it does also reflect the lower level of balancing transactions overall in this year. In July 2019, 417 GWh were purchased for EUR 4.59m, while the figure in July 2018 was 1,358 GWh, which incurred costs of EUR 30.84m.

Overall, some 2.8 TWh of high CV gas<sup>1</sup> (previous year: 6.9 TWh, down 59.4%) were bought for balancing purposes at a total cost of EUR 61.7m (previous year: EUR 149.79, down 58.8%) compared with sales of 4.5 TWh (previous year: 8.7 TWh, down 48.3%) and revenues of EUR 160.553m (previous year: EUR 165.58m, down 53.9%). This results in a cumulative negative balance of 1.7 TWh.

<sup>1</sup> To ensure comparability of these figures with the previous year, all MOL 1 balancing actions have been treated as relating to the high CV network areas and have therefore been included in this data.

### 3.1.6 Low-cal gas

The chart below provides an overview of the quantities of low CV gas we bought and sold for balancing purposes in each month. The chart shows the cumulative daily quantities in GWh along with the cumulative costs and revenues in millions of EUR by month.

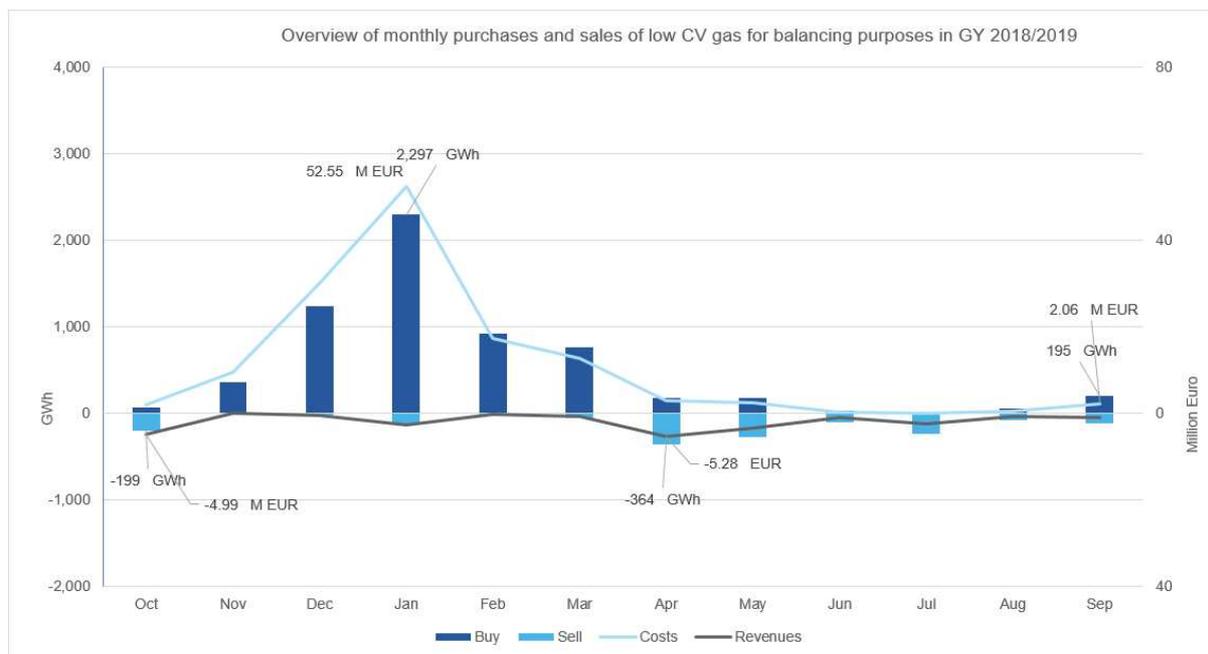


Figure 8: Low CV gas balancing transactions (buy and sell) in GY 2018/2019 by month

As can be seen in Figure 8, the major part of our gas purchases for the low CV sector were made during the winter months of the GY, with significant quantities being purchased up to March. The largest monthly quantity of 2.3 TWh (previous year: 3.8 TWh in February, down 39.5%), was purchased in January. The highest costs of EUR 52.55m were incurred in January (previous year: EUR 121.61m in March, down 56.74%). Relevant quantities were sold in October, April and May, with the largest monthly sell quantity of 0.36 TWh being sold in April (previous year: 1.6 TWh in July, down 77.5%), bringing in revenues of EUR 5.28m (previous year: EUR 33.61m in July, down 84.2%).

Overall, some 6.3 TWh of low CV gas (previous year: 13.0 TWh, down 51.5%) were bought for balancing purposes at a total cost of EUR 131.9m (previous year: EUR 319.4m, down 58.7%), compared with sales of 1.6 TWh (previous year: 3.0 TWh, down 46.7%) and revenues of EUR 23.3m (previous year: EUR 64.8m, down 63.8%).

### 3.2 Procurement of gas for balancing purposes in adjacent market areas

The following diagrams show the quantities we procured in the adjacent Dutch market area by trading gas for delivery at the TTF.

The gas purchased at the TTF is made available on the gas network of the Dutch TSO GTS and therefore needs to be transported to the GASPOOL market area via cross-border interconnection points (IP). In order to do so we have to book transportation capacity, for which we incur additional costs.

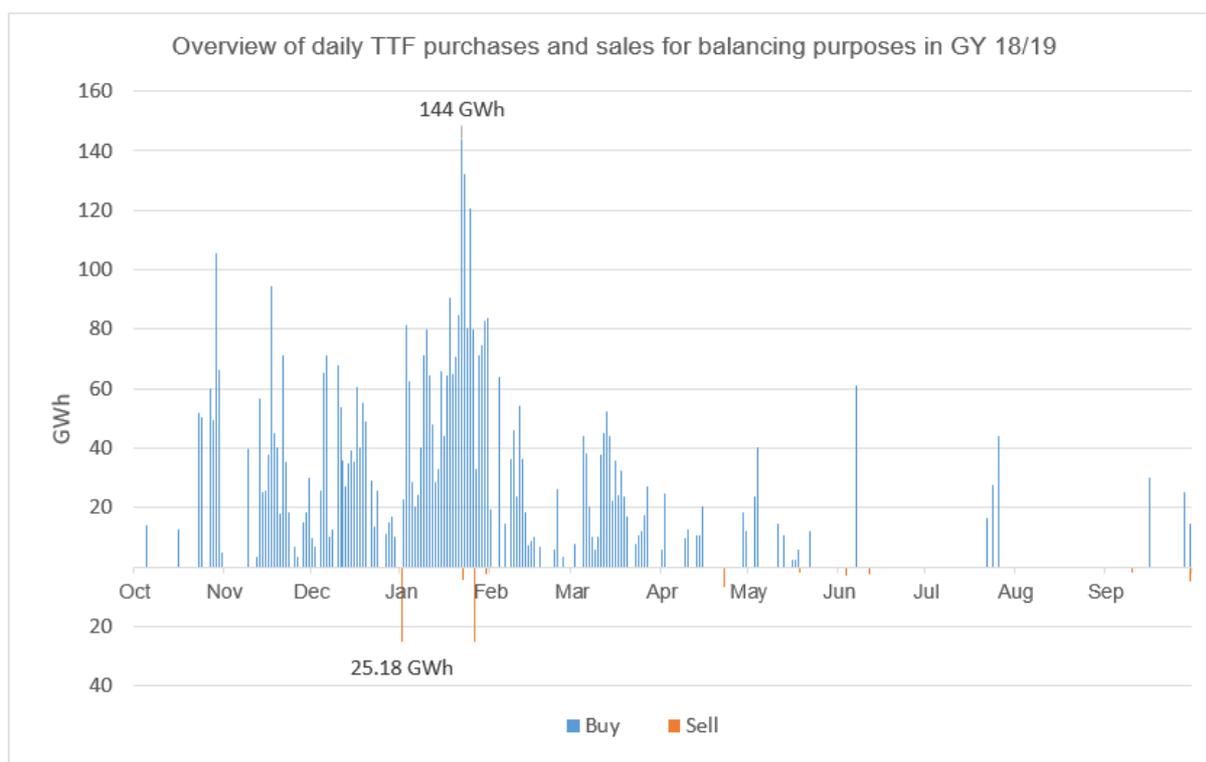


Figure 9: Procurement activities in adjacent market areas (TTF) by day in GY 2018/2019

GASPOOL used the TTF in conjunction with transportation capacity contracts as an external balancing tool on 224 days in total (previous year GY 2018/2019: 230 days).

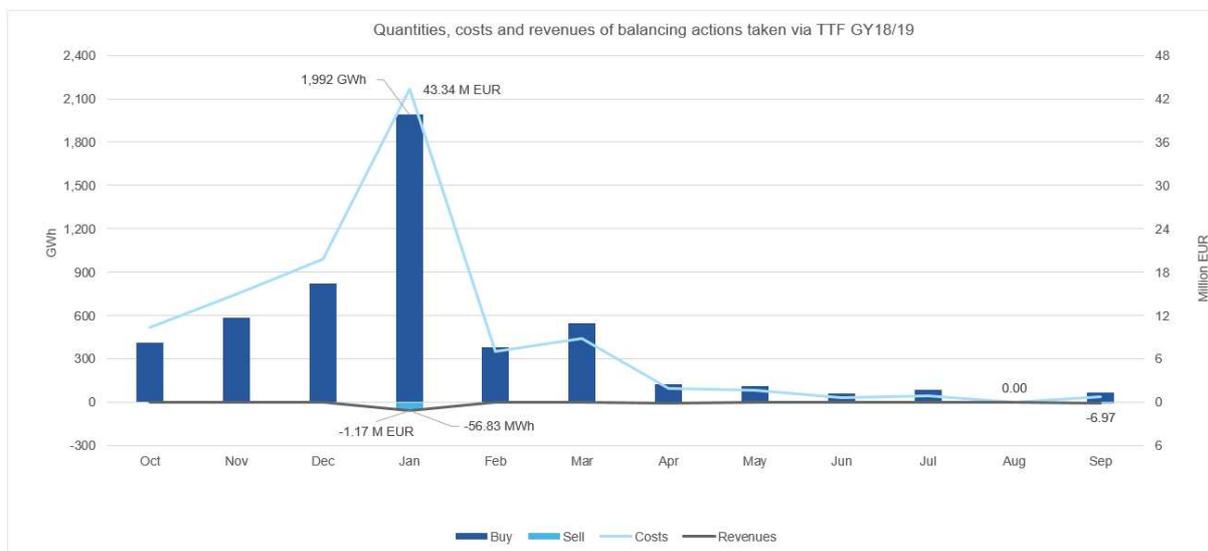


Figure 10: Quantities, costs and revenues of balancing actions taken via TTF in GY 2018/2019

The TTF was generally used for the procurement of both high CV and low CV gas throughout the entire gas year, although the sharply reduced level of balancing actions is reflected accordingly in the TTF transactions. Figure 10 shows the monthly quantities supplied and received together with the associated costs and revenues. We purchased 5.198 TWh of gas at a total cost of EUR 110.19m (previous year: 7.5 TWh / EUR 163.9m, down 30.7% and 67%, respectively). This compares to sales of 0.078 TWh generating total revenues of EUR 1.414m (previous year: 0.4 TWh / EUR 8.3m, down 80.5% and 83%, respectively).

The gas sourced via the TTF is bought without qualifying it as either high CV or low CV gas and then assigned a gas quality with reference to the corresponding booked transportation capacity. We thus incurred costs of EUR 5.67m for booked capacities for a total potential transport volume of 251.08 GWh, with 247.7 GWh of entry capacity and 3.38 GWh of exit capacity.

After assignment, we purchased 0.887 TWh of high CV gas (previous year: 1.5 TWh, down 41%) for EUR 19.14m (previous year: EUR 30.5m, down 37%). At the same time, sales of 0.046 TWh were effected for EUR 0.758m.

According to the assignment on the TTF, 4.3 TWh of low CV gas (previous year: 6.0 TWh, down 28%) was purchased for EUR 91.055m (previous year: EUR 133.4m, down 31.7%). At the same time, sales of 0.031 TWh (previous year: 0.9 TWh, down 96%) were effected for EUR 0.656m (previous year: EUR 1.8m, down 64%).

The transportation capacity we booked for the purpose of taking the above balancing actions is shown in the chart below together with the associated costs. We primarily booked capacity in the winter months, with the largest amounts of entry capacity (92.7 GWh) and also the largest exit capacity (1.6 GWh) being booked in January. Accordingly, entry capacity costs were also highest in January, where we paid a total of EUR 2.3m, as were exit capacity costs at a total of EUR 30.8 thousand.

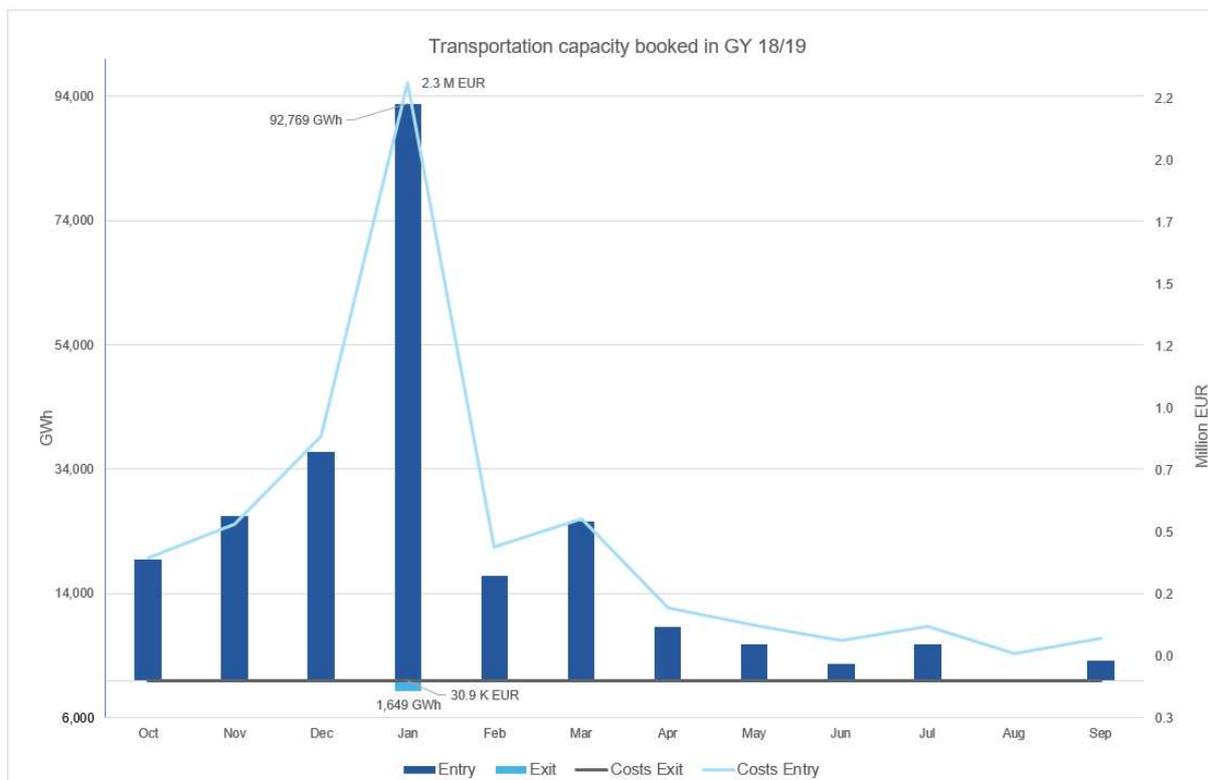


Figure 11: Transportation capacity booked for balancing actions via adjacent market areas in GY 2018/2019

A total of 5.1 TWh of entry capacity was imported throughout GY 2018/2019, equivalent to a utilisation rate of the booked capacities of around 91% (previous year: 87.8%, up 3.6%), while 0.078 TWh of exit capacity was exported (previous year: 0.4 TWh, up 19.5%).

As required under sentence 3 of Article 9(3) of the BAL Code, GASPOOL reconsiders the terms and conditions applicable to the trading of balancing products in adjacent market areas on an annual basis. Our review of the general terms and conditions governing our TTF trading activities as well as of the relevant transportation contracts governing our corresponding gas transports/nominations did not give rise to any legal concerns that would lead us to dispute their appropriateness. Furthermore, in our view the possibility to procure gas in adjacent market areas continues to be a necessary and appropriate option. In summary, it can be noted that our trading activities in adjacent market areas are in conformity with the requirements of sentence 3 of Article 9(3) of the BAL Code.

Changes to the transportation markup/markdown calculation methodology taking effect on 1 October 2017

Transportation markups (or markdowns) are applied to all balancing actions taken via adjacent market areas to take account of the fact that the MAM incurs transportation costs in connection with these balancing activities. When determining the daily imbalance prices applicable in its market area the

MAM adds the corresponding transportation markup to the buy price of each TTF buy transaction (if any) and deducts the corresponding transportation markdown from the sell price of each TTF sell transaction (if any). Our previous approach relied on constant utilisation rates. To take account of the fact that the MAMs now mostly book capacity on a within-day - basis, GASPOOL and NetConnect Germany adjusted their approach in consultation with the Federal Network Agency with effect from 1 October 2017:

- The new calculation methodology is as follows: Separate transportation markups and markdowns are calculated for SystemBUY balancing transactions (purchases of gas) and SystemSELL balancing transactions (sales of gas), respectively, based on the actual number of hours in which we use the transportation capacity booked for this purpose.
- For SystemBUY transactions the MAM applies a transportation markup and for SystemSELL transactions a transportation markdown, with the applicable markup or markdown being added to or deducted from the price payable in respect of the relevant exchange trade.
- The transportation markups and markdowns applicable to each utilisation period are published on the MAM's website for each delivery month.

$$\text{Transportkostenanteil (EUR/MWh)} = \frac{\text{Transportentgelte (EUR/MWh/h)}}{\text{Einsatzdauer (h)}}$$

- Calculation of the transportation tariff:
  - The calculations are based on the daily capacity tariffs applicable to day-ahead capacity products during the relevant validity period on the Dutch and German sides of the IPs the MAM can use for transportation purposes.
  - As several IPs are available in each gas quality, we determine the arithmetic mean of all daily capacity tariffs applicable at the relevant high CV and low CV IPs for each side of the border.
  - On the GASPOOL side of the border the full average daily capacity tariffs are taken into account. On the GTS side of the border the applicable daily capacity tariffs are taken into account on a pro-rata basis, based on actual utilisation.
  - The formula has the following components:

$$\text{Transportentgelt} = \left( \emptyset \text{ Day ahead Tarif} + \left( \frac{\emptyset \text{ Day ahead Tarif GTS}}{24h} \right) * \text{Einsatzdauer} \right)$$

- Utilisation period: the actual delivery period during which gas was supplied/received (as the case may be).

As a result, the transportation markups and markdowns vary depending on the number of hours in which the booked capacity was used. The shorter the utilisation period, the higher the transportation markup/markdown.

The applicable transportation markups and markdowns are also taken into account when it comes to deciding whether or not a balancing action is carried out via the TTF. The TTF is only used if the purchase price plus transportation markup is smaller than the price we would have to pay in the German wholesale market (and vice versa for sell transactions).

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

Below we provide a summary of the number, frequency and costs of the balancing call orders in GY 2018/2019. Figure 12 shows the number of balancing call orders on a rest-of-the-day (RoD) basis within each MOL rank and month. We had the highest number of call orders in January 2019, with a total of 412 (previous year: highest number in March 2018 with 126, up 227%), while in August we only had the fewest call orders with a total 53 (previous year: lowest number in September with 26, up 104%).

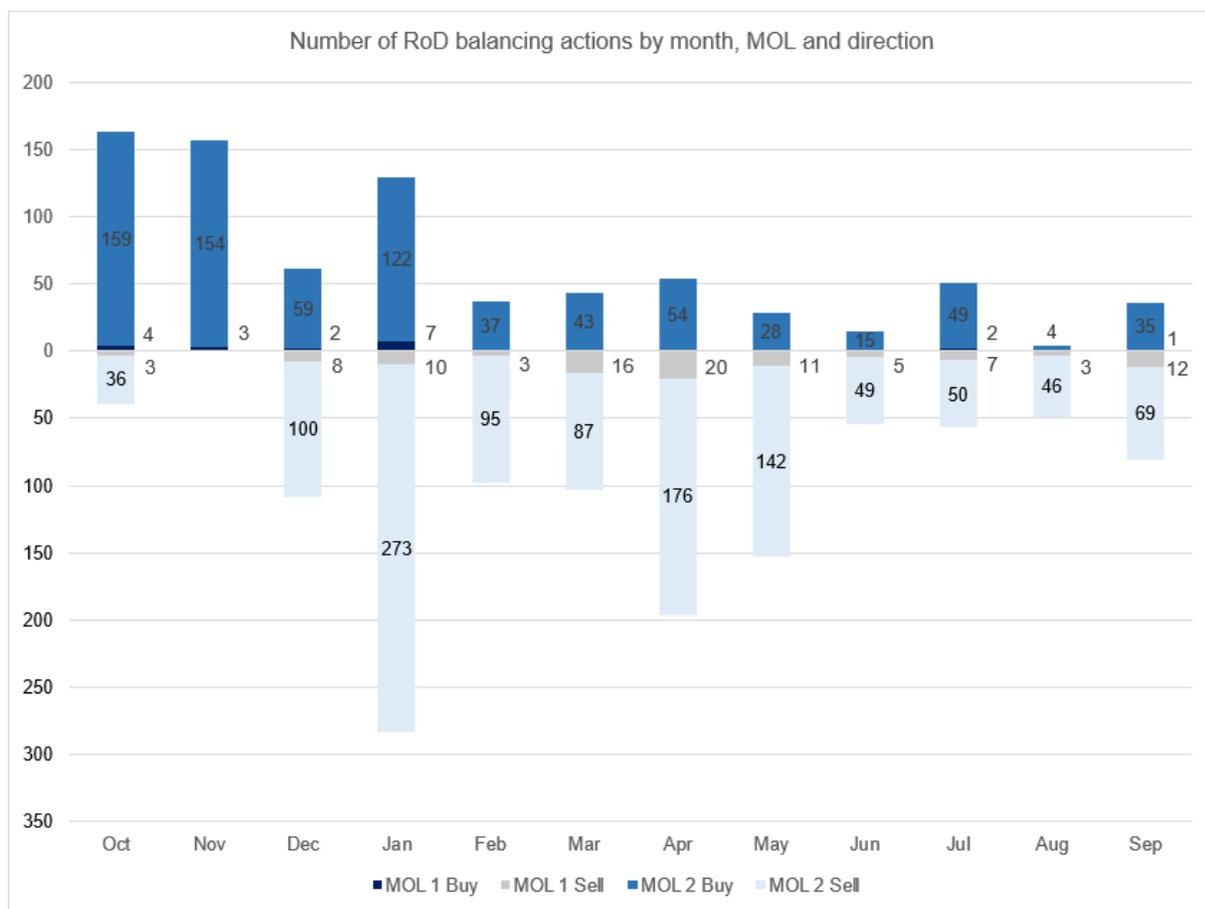


Figure 12: Number of RoD balancing actions in GY 2018/2019 by direction and MOL

The numbers for our day-ahead (DA) balancing call orders in GY 2018/2019 are shown in Figure 13. The total number of day-ahead call orders was 1,038 (previous year: 262, up 296%). We had the highest number of call orders in January 2019, with a total of 262 (previous year: highest number in January 2018 with 412, down 36.4%), while in July we only had the fewest call orders with a total 28 (previous year: lowest number in August with 53, down 47.2%).

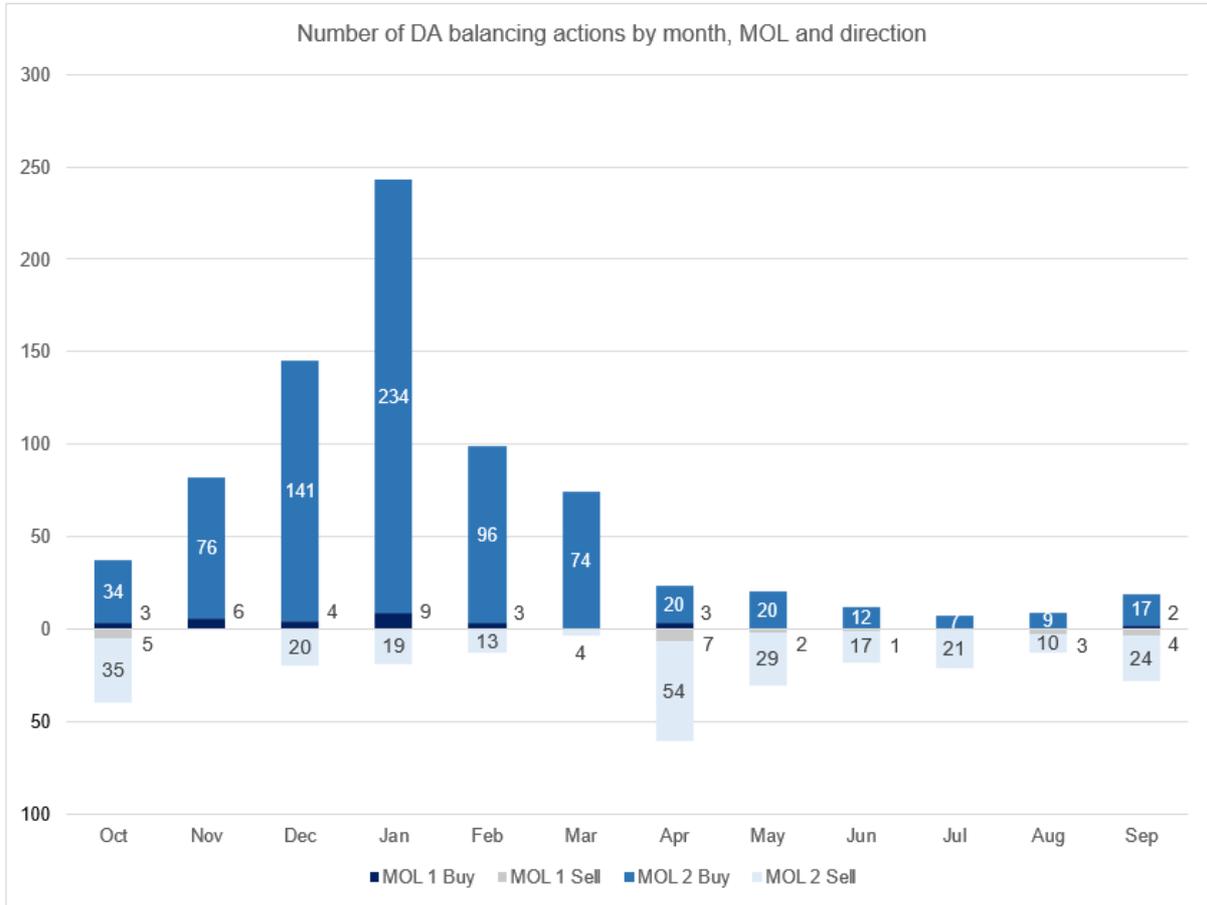


Figure 13: Number of DA balancing call orders in GY 2018/2019 by direction and MOL

Figure 14 shows the number of balancing call orders per gas day. Balancing actions were carried out on 292 days in this GY (previous year: 332 days, down 12%). Overall, we executed a total of 3,038 call orders in GY 2018/2019 (previous year: 1,088 call orders, up 179%), averaging 10.4 call orders per gas day (previous year: 2.98 call orders, up 249%). The highest number was achieved on 23 and 24 January 2019 with 22 call orders. Apart from April and May 2019, fewer call orders tend to be required during the summer months. Accordingly, these are also the months with the lowest balancing requirements.

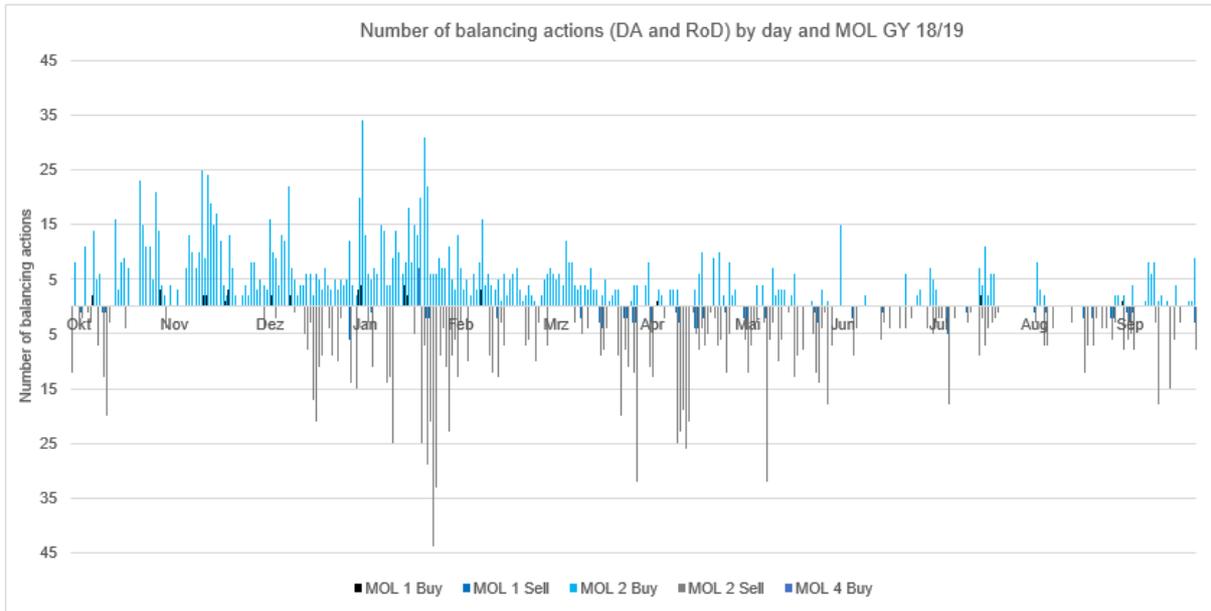


Figure 14: Number of balancing call orders (DA and RoD) per day and MOL

Figure 15 shows the distribution of balancing call orders through the gas day.

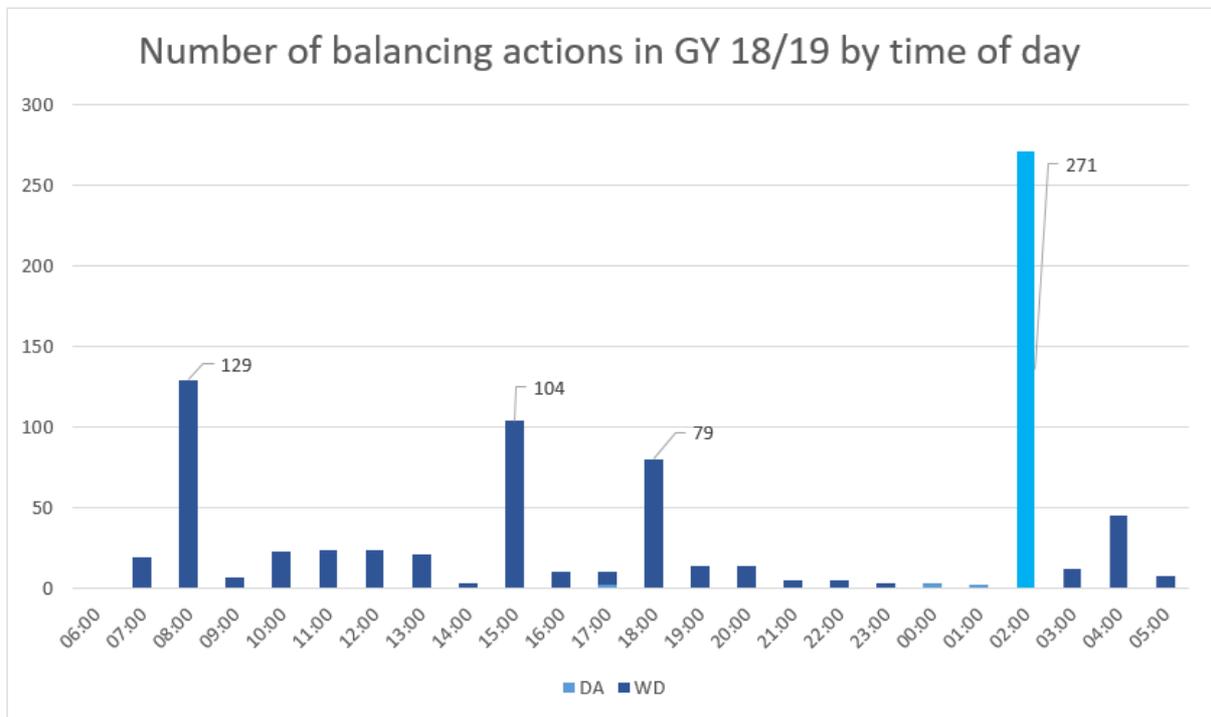


Figure 15: MOL 1 to MOL 3 balancing actions across the high CV and low CV network areas by time of day

The largest number of balancing call orders per hour was executed between 02:00 and 03:00 hours at night, with 271 of the total balancing call orders taken during the entire GY being carried out in this hour (previous year: 316 balancing actions, down 14.2%). These were call orders taken via the exchange on a DA basis for which we used either the day-ahead or within-day order books to meet the

corresponding balancing requirements. Overall, the number of our balancing call orders carried out on a DA basis fell to 282 (previous year: 398 call orders, down 29.1%) and thus a share of approximately 34% (previous year: 27%). The focal point of our within-day call orders was the hour from 08:00 to 09:00, with 129 call orders being taken in this period (previous year: 87 call orders, up 48.3%).

The related balancing costs and revenues follow the seasonal pattern shown in Figure 16. We thus incurred the highest costs of EUR 55.16m in January 2019 (previous year: EUR 127.7m in March 2018, down 56.8%) and achieved the highest revenues of EUR 25.95m (previous year: EUR 68.2m in March 2018, down 62%).

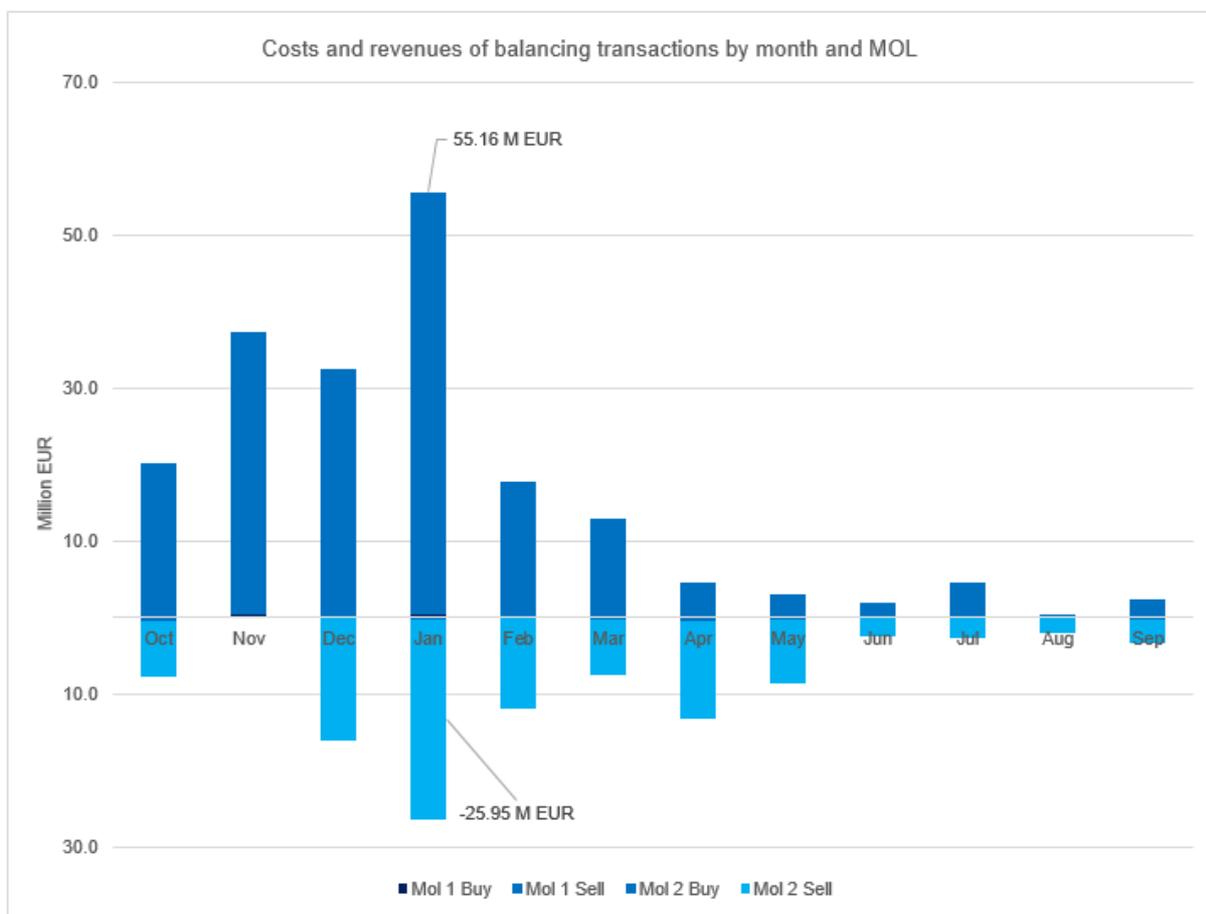


Figure 16: Costs and revenues of balancing transactions in GY 2018/2019 by month and MOL

## 4 Effect and application of the within-day obligation rules

As required under the Gabi Gas 2.0 ruling, GASPOOL introduced a within-day obligation regime on 1 October 2016. The new system replaced the variable structuring charges previously applied.

The within-day obligation rules are to incentivise balancing group managers (BGMs) to keep their balancing group accounts in balance during the day, too. For this purpose, the hourly imbalances between the inputs and offtakes allocated to BGMs' balancing groups are recorded and cumulated over the course of each gas day. If a pre-defined threshold is exceeded, these hourly imbalance quantities (so-called "within-day flexibility quantity") may be charged to BGMs. Charges are only applied, however, if the MAM had to take MOL 1 balancing actions in opposite directions on the day in question (i.e. buy and sell gas on the same day) and actually incurred costs as a result. In order to avoid all forecasting inaccuracies incurring a charge, BGMs are granted an hourly tolerance on offtakes at "RLM" exit points (i.e. intraday-metered exit points equipped with a supply meter installation that records hourly consumption) which is calculated as 7.5% of the daily RLM offtake quantity allocated to the relevant balancing group. No tolerances are available for any other types of system points.

### 4.1 Within-day balancing actions in opposite directions in the respective MOL rankings

MOL 1 balancing actions in opposite directions were taken on two days in GY 2018/2019. MOL 2 balancing actions in opposite directions were taken for the high CV network areas on one day with a total of approximately 0.9 GWh, in the low CV gas network areas on 30 days with 195.9 GWh. Quantities in opposite directions were procured at the TTF on five days, with 38.7 GWh being traded. The detailed Table XII can be found in the Annex.

*Table I: MOL 2 within-day balancing actions in opposite directions*

Quality / Location	Number of days of balancing actions in opposite directions	Balancing quantity in opposite directions in MWh
High	1	858
Low	30	195,915
TTF	5	38,669

### 4.2 Development of aggregated flexibility quantities

The extent to which BGMs used the flexibility available in GY 2018/2019 is presented in Figure 17, which shows that we observed the highest within-day flexibility quantities in May 2019. In the following months BGMs' within-day flexibility quantities fluctuated but without indicating a clear trend.

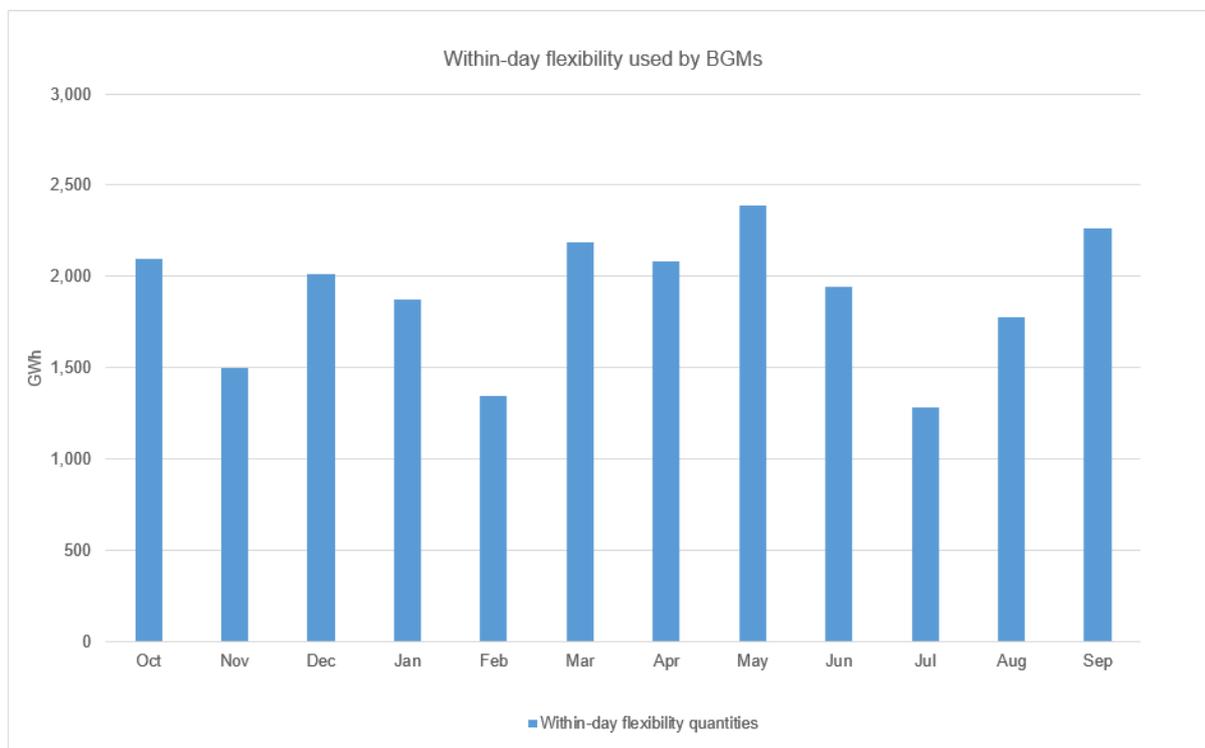


Figure 17: Within-day flexibility quantities in GY 2018/2019

Compared with the former rules, the current hourly tolerance of 7.5% of daily RLM offtakes affords BGMs greater flexibility during the day and means that it is generally more advantageous for BGMs to have their RLM customers assigned to the “RLMmT” allocation regime, where daily offtakes are divided by 24 for balancing purposes (flat allocation profile). The exception to this rule are customers who use large quantities of gas but whose consumption fluctuates strongly over the day (e.g. gas-fired power stations). In these cases, it may still be better for BGMs to have these points assigned to the “RLMoT” allocation group, where actual hourly offtakes are allocated as measured. RLMoT quantities made up only 5.8% of total RLM allocations in the GASPOOL market area in GY 2018/2019.

Figure 17 shows the flexibility quantities used in GY 2018/2019. The total amount of 22,759 GWh is 686 GWh higher than the annual total from GY 2017/2018, which corresponds to an increase of 0.03%.

During the entire GY, GASPOOL applied within-day flexibility charges in September for the first time since their implementation. MOL 1 balancing actions in opposite directions were taken on 7 September 2019 and 30 September 2019 (see section 3.1.1). The flexibility costs charge on 7 September 2019 was EUR 0.20/MWh and on 30 September 2019 EUR 0.10/MWh. Approximately EUR 31,000 was received in the balancing group invoicing for these two days together.

## 5 Procurement and use of balancing services (MOL 4)

Our “Flexibility” product involves the provision of short-term “parking” and “lending” services in the event of an oversupply or undersupply of gas in the GASPOOL market area. Both GASPOOL and the provider may supply or receive gas under this service. Both directions are possible:

- “to GASPOOL” means that the MAM temporarily receives gas quantities from the provider and subsequently returns these gas quantities to the provider (“lending”); and
- “from GASPOOL” means that the MAM temporarily supplies gas quantities to the provider and subsequently receives these gas quantities back from the provider (“parking”).

The Flexibility product is a combined “lending/parking product”. The supply or receipt of gas under the service commences within a few minutes after being instructed by the MAM but no later than 90 minutes thereafter. In duly justified exceptional cases the supply or receipt of an instructed gas quantity may also take place outside the above time window, provided GASPOOL has expressly approved this new time window beforehand. Due to this short call lead time, the Flexibility product can bridge the gap for short-term demand until delivery of Commodity with the standardised three-hour call lead time.

The product does not involve any call order or nomination processes. The Flexibility provider supplies or receives an exact gas quantity in kWh at a specified physical entry or exit point; the service can only be offered for a network area of a TSO operating in the GASPOOL market area.

All gas quantities supplied or received by a provider are returned or received back at the point where the gas was originally supplied or received, generally in the course of the gas day on which the gas quantities were originally supplied or received.

The period of time throughout which a provider is required to procure availability of the contracted balancing service may correspond to a month, a quarter, a half-year or a year. The parties may also agree shorter periods covering only a part of the above durations in individual cases specified by GASPOOL. Tender invitations and contracts may be for either firm or interruptible products.

The lot size specified in a Flexibility bid must correspond to a gas quantity delivered at a rate of 10 MWh/h. When submitting a bid, each provider may specify a positive price to be applied without variation throughout the entire contract period, and a positive commodity charge.

Two tendering processes fell within GY 2018/2019, the period from October 2018 to March 2019 and from April 2019 to September 2019, respectively. For the winter period we tendered firm Flexibility contracts for 5,000 MW (previous year: 2,600 MW) for the low CV network areas of our market area and contracted an average of 4,320 MW per month. In the summer period from April 2019 to September 2019, we tendered and contracted 1,900 MW for the months of April and September. 1,000 MW were tendered and contracted respectively for the months of May to August (previous year: 1,000 MW for all the summer months). The capacity charges we paid as a result amounted to EUR 35.5m in the winter period (previous year: EUR 13.6m, up 161%) and to EUR 4.2m in the summer period (previous year: EUR 3.1m, up 35%). We accepted all contract offers without capacity charges that were submitted on an interruptible basis, with 4.58 GW in the winter months and 6.98 GW in the summer months, without capacity charges.

Additional information on the flexibility agreements we entered into in GY 2018/2019 is provided in Table II and Table III.

*Table II: Contracted firm flexibility services (low CV gas only)*

Contract period	Delivery rate required (GW)	Delivery rate offered (GW)	Delivery rate contracted (GW)	Number of bidders	Number of bidders who were awarded a contract	Costs for capacity charges (EUR)
01/10/2018 - 01/11/2018	5	3.98	3.98	5	5	4,545,800
01/11/2018 - 01/12/2018	5	4.68	4.68	6	6	5,496,600
01/12/2018 - 01/01/2019	5	3.7	3.7	7	7	5,638,440
01/01/2019 - 01/02/2019	5	4.68	4.68	7	7	7,268,440
01/02/2019 - 01/03/2019	5	4.68	4.68	7	7	6,539,720
01/03/2019 - 01/04/2019	5	4.2	4.2	5	5	6,016,666
01/04/2019 - 01/05/2019	1.9	1.94	1.9	5	5	1,198,606
01/05/2019 - 01/06/2019	1.00	1.94	1.00	8	5	496,620
01/06/2019 - 01/07/2019	1.00	1.84	1.00	8	7	455,100
01/07/2019 - 01/08/2019	1.00	1.79	1.00	6	6	460,620
01/08/2019 - 01/09/2019	1.00	1.76	1.00	8	6	460,620
01/09/2019 - 01/10/2019	1.9	1.89	1.9	8	7	1,129,769

*Table III: Contracted interruptible flexibility services (low and high CV gas)*

Contract period	Delivery rate offered (GW)	Delivery rate contracted (GW)	Number of bidders	Number of bidders who were awarded a contract
01/10/2018 - 01/11/2018	4.58	4.58	3	3
01/11/2018 - 01/12/2018	4.58	4.58	3	3
01/12/2018 - 01/01/2019	4.58	4.58	3	3
01/01/2019 - 01/02/2019	4.58	4.58	3	3
01/02/2019 - 01/03/2019	4.58	4.58	3	3
01/03/2019 - 01/04/2019	4.58	4.58	3	3
01/04/2019 - 01/05/2019	6.98	6.98	3	3
01/05/2019 - 01/06/2019	6.98	6.98	3	3
01/06/2019 - 01/07/2019	6.98	6.98	3	3
01/07/2019 - 01/08/2019	6.98	6.98	3	3
01/08/2019 - 01/09/2019	6.98	6.98	3	3
01/09/2019 - 01/10/2019	6.98	6.98	3	3

Figure 18 shows the aggregate gas account movements for all interruptible flexibility agreements in place for the high CV networks.

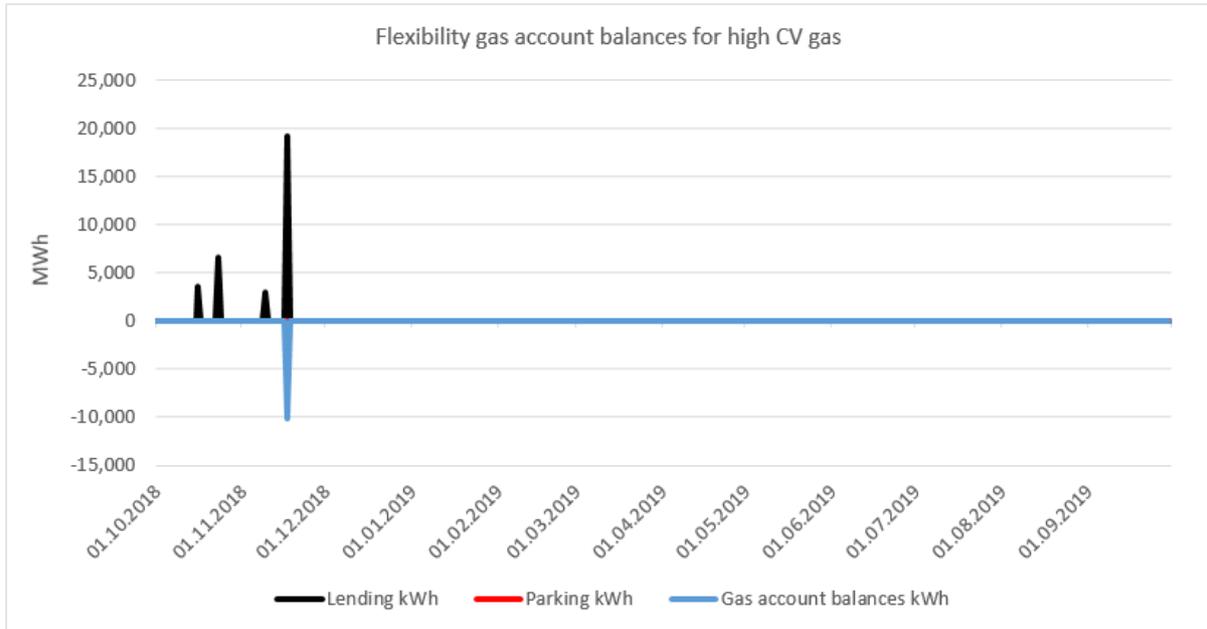


Figure 18: Flexibility gas account movements and quantities supplied/received in the high CV network areas [MWh]

As can be seen in Figure 18 we only made use of our high CV flexibility agreements on two days in October and November 2018. Throughout the entire GY we did not use any parking services at all. As for the high CV network areas we had only entered into interruptible flexibility agreements, we incurred no capacity charges under these contracts.

Figure 19 shows the gas account movements for all flexibility agreements in place for the low CV networks.

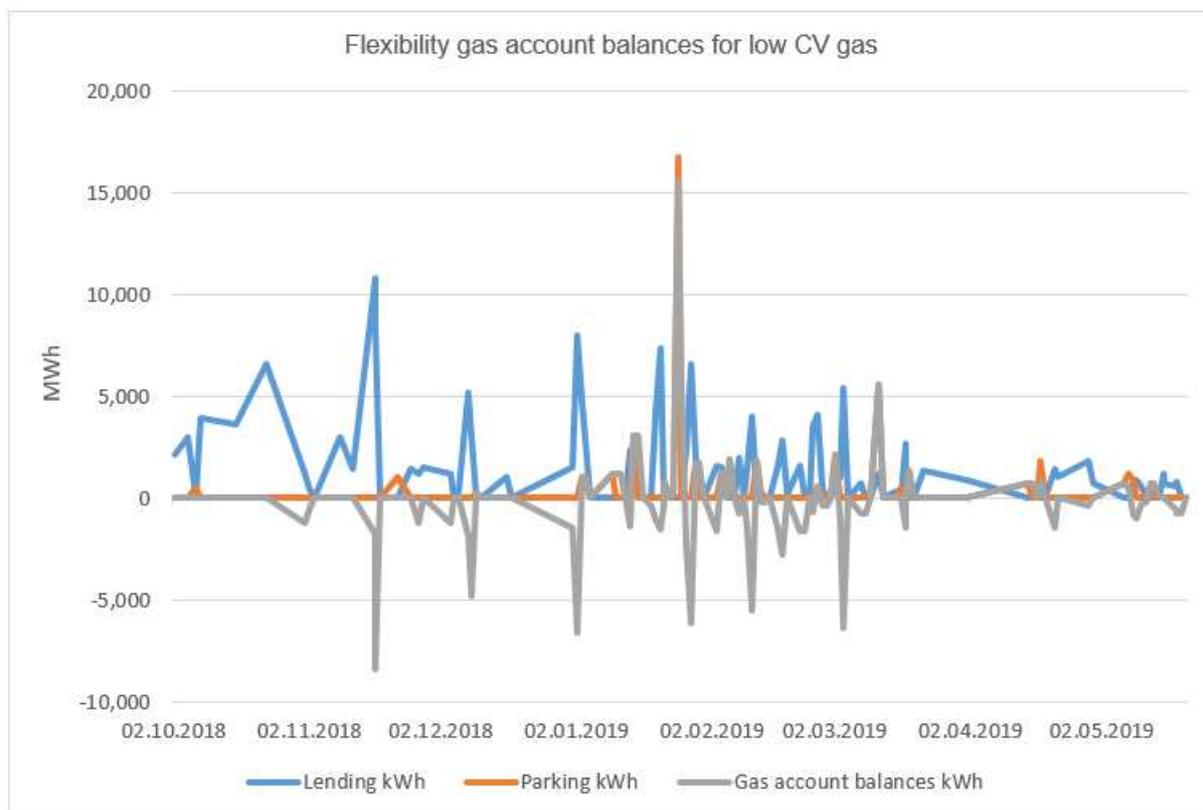


Figure 19: Total for the flexibility gas account balances and movements and quantities supplied/received in the low CV network areas in GY 2017/2018

We made most active use of our low CV flexibility agreements in the months from November to March, on 27 days on the parking side and on 66 days on the lending side.

Article 8(6) of the BAL Code places an obligation on the MAMs to review potential options for reducing their balancing service contract volumes. From today's perspective we do not see any possibility to reduce current contract volumes in the GASPOOL market area. Instead, the tendered and contracted flexibility service was increased for GY 2018/19. The reasons for this are:

- reduced linepack due to market area restructuring, resulting in a reduction in the potential to balance structuring needs,
- deviations in the effectiveness of the balancing gas delivery from the procurement of balancing energy
- resulting increased temporary structuring needs,
- serious effects of forecast uncertainties for larger purchases in the low CV sector and
- the need for the availability of a safeguard quantity for deficits in home production in Germany.

Owing to the underlying contractual arrangements, especially due to their non-standardisable, short-notice availability within 90 minutes of receipt of a service instruction, our contracted Flexibility products deliver a significant contribution to upholding supply security. As there are presently no

alternative products available on the exchange, we will not be able to reduce our Flexibility needs for the time being.

## 5.1 Long-Term Options

LTOs are only applied in rest of the day (RoD) mode. Providers promise their stored gas capacity (buy or sell gas transactions) throughout the contract period. For this, the provider receives a capacity charge. When the call order is issued by GASPOOL with a lead time of no less than three (maximum 23) hours ahead of the start of the call hour, the provider receives the applicable commodity charge. The standard number of call orders is restricted to 14 days for a monthly product. The delivery rates offered can only be requested completely as a fixed capacity. Each provider has to ensure that the receipt or supply of each instructed gas quantity is carried out from the relevant call hour onwards.

LTOs can be arranged for a week, a month, a quarter, a half-year or a year. Shorter periods covering only a part of the above durations in individual cases may also be agreed. The minimum lot size for the bids is 10 MWh/h. Above that, any whole number quantity can be offered.

The instructed capacity can be supplied or received on a list of possible physical entry/exit points published by GASPOOL. In addition, it has also been possible to use breaking capacities at RLM exit points since GY 2017/2018.

No LTO contracts for ordinary balancing reserves were tendered out or signed in the GASPOOL market area for the GY covered by this report. Our procurement of option contracts for the purpose of implementing the BMWi policy paper is addressed separately in section 5.3.

## 5.2 Product description of Short-Term Balancing Services

The STB product comprises short-term bids for providing gas quantities to the MAM or receiving gas quantities from the MAM in balancing zones or network areas (including RLM). Tenders for STB are always issued as needed, at short term for the tendered gas day. The call order arises for short-term local supply bottlenecks after the previous MOL capacities have been exhausted.

### 5.3 Supply security measures in accordance with the BMWi policy paper

In December 2015 the German Federal Ministry for Economic Affairs and Energy (BMWi) published a policy paper<sup>2</sup> according to which the level of supply security was to be increased. The MAMs were asked to procure additional reserves through their existing LTO product at short notice. Additional details were specified by the Federal Network Agency in its first notification on implementation of the GaBi Gas 2.0 ruling<sup>3</sup>.

In GY 2018/2019, GASPOOL again contracted LTOs for the purpose of further increasing supply security. We signed additional monthly reserves of 1.3 GW for January 2019 and 2.3 GW for the period from February to March 2019 to be provided in the low CV network areas operated by Gasunie, Nowega and GTG. No call orders were issued in winter 2019 for LTO products.

The delivery rates offered in each network area in each month are shown in Figure 20.

To ensure that a required physical effect is actually delivered, GASPOOL has reduced the list of the entry and exit points to storage connection points that can be used to achieve the physical effect. RLM exit points are also permitted. Providers should be barred from using interruptible entry capacity or exit capacity based on backhaul services. This was specified accordingly in the System Balancing Terms & Conditions.

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<sup>2</sup> [https://www.bmwi.de/Redaktion/DE/Downloads/E/eckpunkte-gasversorgungssicherheit.pdf?\\_\\_blob=publicationFile&v=5](https://www.bmwi.de/Redaktion/DE/Downloads/E/eckpunkte-gasversorgungssicherheit.pdf?__blob=publicationFile&v=5)

<sup>3</sup> [https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1\\_GZ/BK7-GZ/2014/2014\\_0001bis0999/2014\\_001bis099/BK7-14-0020/BK7-14-0020\\_MitteilungNr1\\_download.pdf?\\_\\_blob=publicationFile&v=2](https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK7-GZ/2014/2014_0001bis0999/2014_001bis099/BK7-14-0020/BK7-14-0020_MitteilungNr1_download.pdf?__blob=publicationFile&v=2)

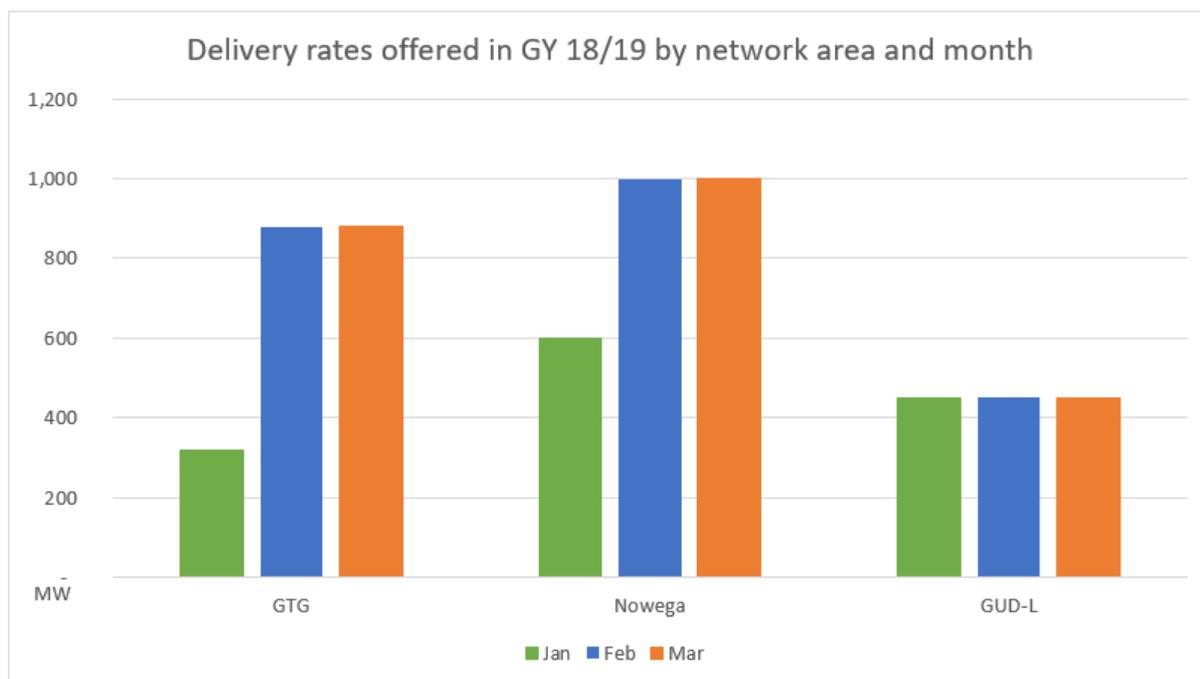


Figure 20: LTO delivery rates offered in GY 2018/2019 by network area and month [MW]

The delivery rates offered for all three network areas combined exceeded the rates requested by a factor of up to nine.

The tender results are provided in Table IV.

Table IV: LTO tender results for the contract period 1 Jan. 2019 – 1 Apr. 2019

Contract period	Delivery rate required (GW)	Delivery rate offered (GW)	Delivery rate contracted (GW)	Number of bidders	Number of bidders who were awarded a contract	Costs for capacity charges (EUR)
01/01/2019 - 01/02/2019	1.37	3.55	1.3	8	6	2,543,201
01/02/2019 - 01/03/2019	2.33	4.55	2.3	8	6	3,958,423
01/03/2019 - 01/04/2019	2.3	4.55	2.3	8	6	4,691,283

We were able to procure the necessary reserves from the bids submitted and paid capacity charges totalling some EUR 11.192m (previous year: EUR 1.78m, up 529%) over the duration of the contract period under the corresponding contracts.

At around 23:45 on 21 January 2019, we issued test call orders on all the LTO lots contracted to implement the policy paper to further increase supply security. Specifically, we instructed providers to provide 320 MW in the network area of Gastransport Nord GmbH (GTG), 450 MW in the network area of Gasunie Deutschland GmbH and also 600 MW in the network area of Nowega in the last three delivery hours of the gas day 21 January 2019.

The aim of these test call orders was to check if the relevant providers were in compliance with their contractual obligation to keep the contracted reserves ready but also if they upheld their commitment to ensure 24/7 communication availability. All the contracts were fulfilled.

## 6 Locational balancing products

Locational balancing products are balancing products which require delivery of gas, and of the required physical effect, in a specified location. These products are offered via MOL 2 in the local PEGAS order books for the GASPOOL market area. These products are not taken into account in the determination of daily imbalance charges.

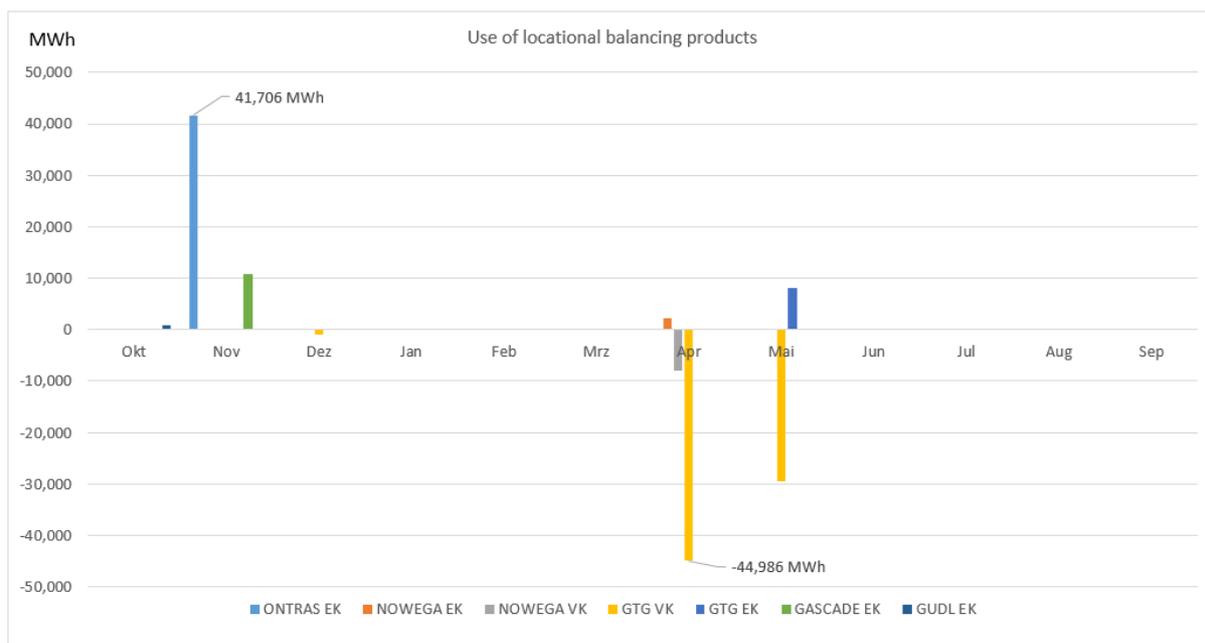


Figure 21: Locational balancing products traded in GY 2018/2019

The highest buy requirement of 41.7 GWh was registered in November 2018 for the Ontras network area. The corresponding total cost was EUR 1.46m (previous year: 315.5 GWh in March 2018 for the GUD L network area). Our largest sale, 44.98 GWh, was registered in April 2019 in the GTG network area, generating revenues of EUR 0.654m (previous year: 86.0 GWh in July 2018 in the GTG network area). Overall, we purchased 63.5 GWh in locational trades at a total cost of EUR 1.98m and sold a total of 67.5 GWh in locational trades for an amount of EUR 1.2m.

## 7 Allocation of costs to the balancing neutrality accounts

All costs and revenues related to our balancing actions, in accordance with the “GaBi Gas 2.0” decision, are allocated to the two separate balancing neutrality accounts set up for our market area – one for non-daily metered “SLP” exit points (where daily allocations are based on standard load profiles) and one for intraday-metered “RLM” exit points (where daily allocations are based on measured offtakes) – according to causation. To allocate these costs and revenues, we use daily allocation keys. The costs and revenues allocated for the period from October 2018 to September 2019 are shown in Figure 22<sup>4</sup>.

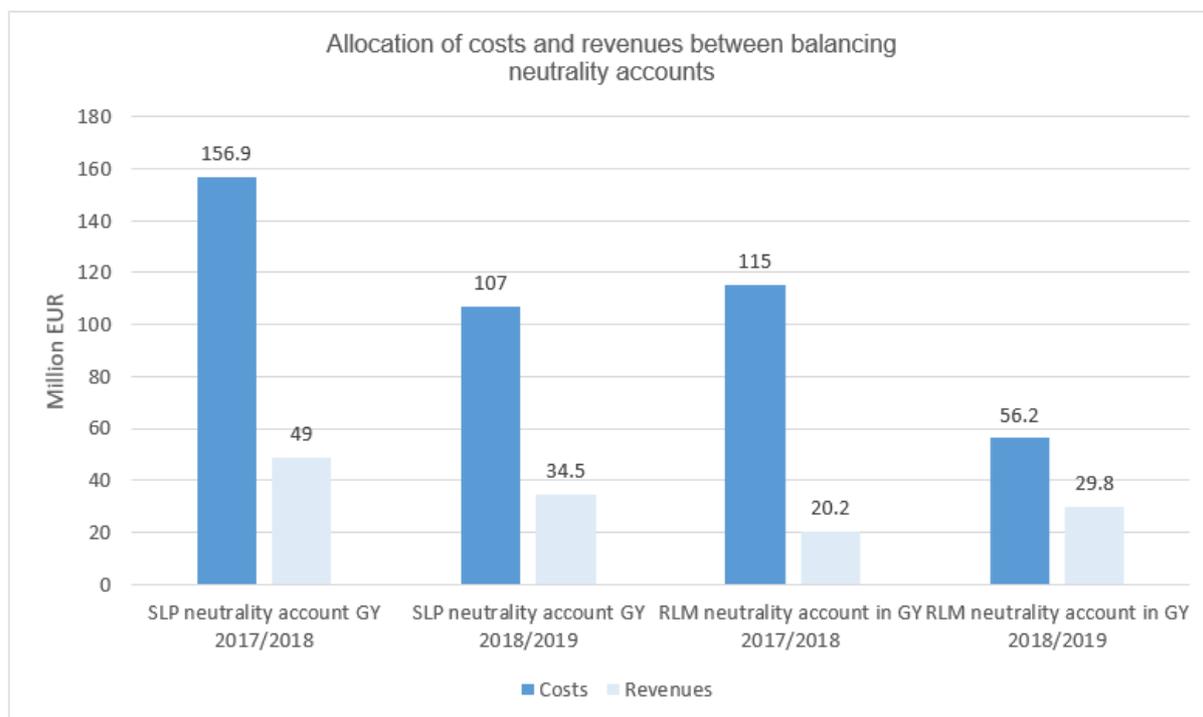


Figure 22: Neutrality account cost and revenue allocation for the last two GYs

The costs and revenues for the SLP balancing neutrality account are almost a third lower than the previous year. The costs allocated to the RLM account in GY 2018/2019 are also more than 50% lower than in the previous GY. The main reason for the development in the neutrality accounts is the significantly lower level of balancing quantities procured coupled with the falling prices on the wholesale market.

In relation to gas days on which no external balancing actions were taken an annual allocation key is applied, which is calculated on an ex-post basis. This annual allocation key is calculated for each neutrality accounting period on an ex-post basis as the mean of all daily allocation keys determined for

<sup>4</sup> The database is based on the booked amounts from the invoicing system that were available at the editorial deadline, balancing group invoices for the months of August and September are not included, for example.

the individual days falling within the neutrality accounting period. This mean is not calculated on a volume-weighted basis<sup>5</sup>.

The preliminary allocation key for the period from October 2018 to September 2019 is 57.46% for SLP and 42.54% for RLM.

A comparison between the costs and revenues allocated to the SLP and RLM balancing neutrality accounts has shown that more costs were charged to the SLP account (EUR 107m; previous year: EUR 156.9m, down 31.8%) than the RLM account (EUR 56.2m; previous year: EUR 115m, down 51.1%). SLP-related revenues totalled EUR 34.5m (previous year: EUR 49m, down 29.5%), while total RLM-related revenues stood at EUR 29.8m (previous year: EUR 20.2m, up 47.5%). No distributions will be made from the balancing neutrality accounts for GY 2018/2019 as the conditions for such distributions are not satisfied.

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<sup>5</sup> For an analysis of the pros and cons of volume-weighting in the context of the determination of daily allocation keys please refer to chapter 4 of the System Balancing Report for GY 2015/2016.

## 8 Development of fees and levies in the market area

### Balancing energy levies

All costs and revenues from the control and balancing energy regime, such as balancing quantity procurement, balancing group and excess/shortfall invoicing, etc., are included in the RLM and SLP balancing neutrality accounts. For the MAM to be able to perform its tasks on a cost-neutral basis, it is entitled to levy a charge. The expenses and revenues for the next levy period are projected to calculate the levy. In addition, a liquidity buffer is determined to absorb any projection risks that occur. If the projected revenues exceed the projected expenses, taking account of the liquidity buffer, this surplus will be distributed to the BGMs. For GY 2018/2019, the liquidity buffer for the RLM balancing neutrality account was EUR 104.1m and EUR 367.9m for the SLP balancing neutrality account. The main aim of the liquidity buffer is to absorb quantity and price risks, but also pre-financing effects that arise due to the disparity between costs and revenues.

Figure 23 shows the balancing energy levies at GASPOOL since October 2015. There is a noticeable difference between the amount levied for SLP and RLM customers. This is due to the different risk structure in the customer groups. Whereas balancing group invoicing takes place two months after the delivery month, excess/shortfall quantities arising from deviations from the SLP projection are usually invoiced only a year after the delivery month or even later due to the system configuration. The costs and revenues from excess/shortfall quantities are a key item in the balancing neutrality account.

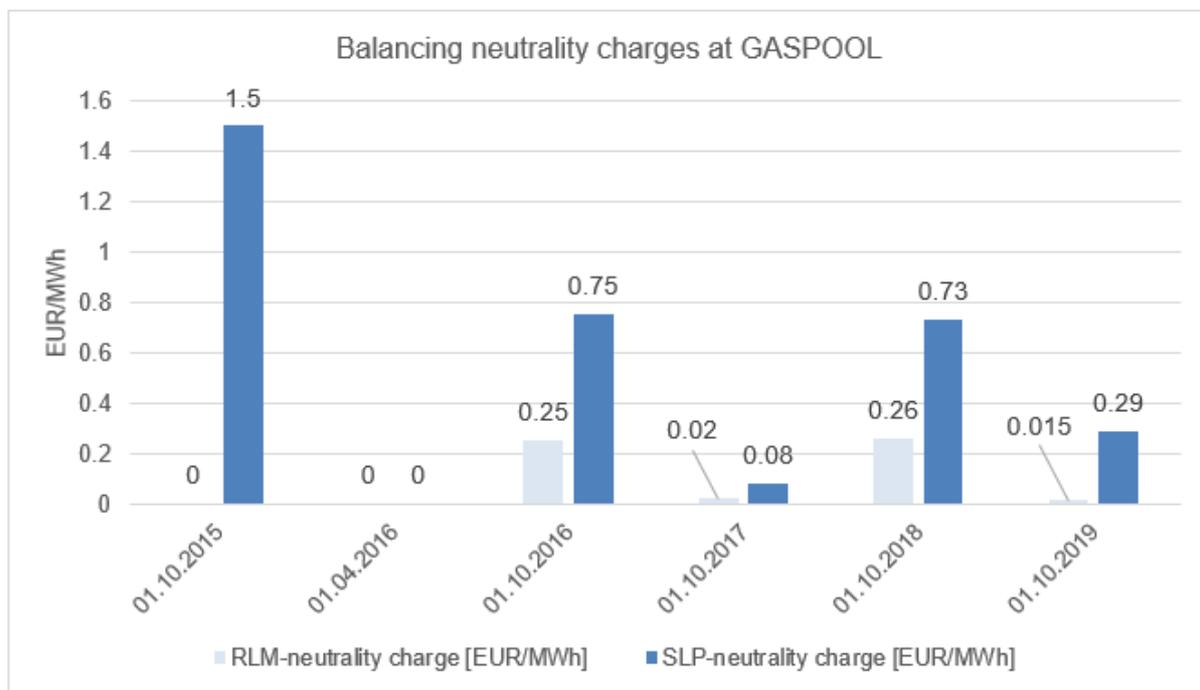


Figure 23: Development of balancing neutrality charges at GASPOOL since October 2015

Figure 24 shows a comparison between the projected balance before the start of the neutrality accounting period and the actual balance achieved later for the SLP area. This is exclusively based on the cost and revenue projections. The start and end account balances and the liquidity buffer are not included. The projected revenues do not include those from the neutrality charge, since a charge – and hence potential revenues – is a result of the cost and revenue estimate. It can be seen that the

projections in the first two periods (GY 2015/2016 and GY 2016/2017) are close to the balance achieved later. In GY 2018/2019, the actual balance – and hence the costs – are slightly above the projection. Since, however, not all the invoices for this GY have yet been presented, the amounts are not yet complete.

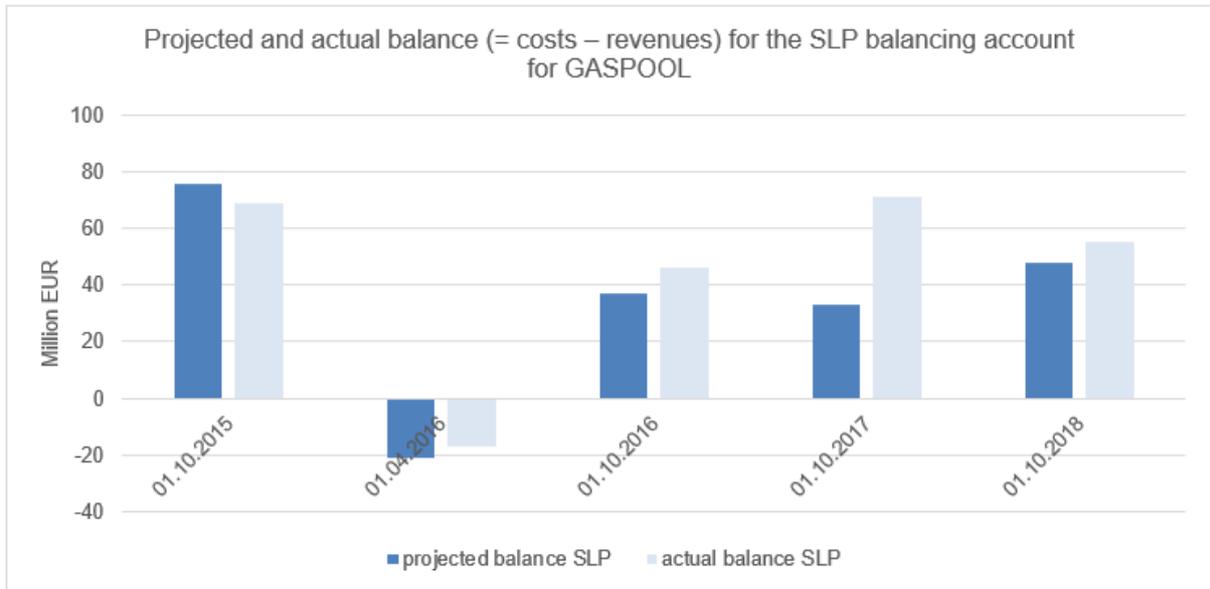


Figure 24: Projected and actual balance (= costs – revenues) for the SLP area for GASPOOL

Figure 25 shows the balances for the RLM area applying the same assumptions as for the SLP area. It can be seen in the last period that the actual costs were somewhat lower than those projected. Reasons for this may also be the decline in gas prices since November in combination with the sharply reduced balancing quantities. Here, too, GY 2018/2019 is not yet complete, since not all invoices have yet been booked.

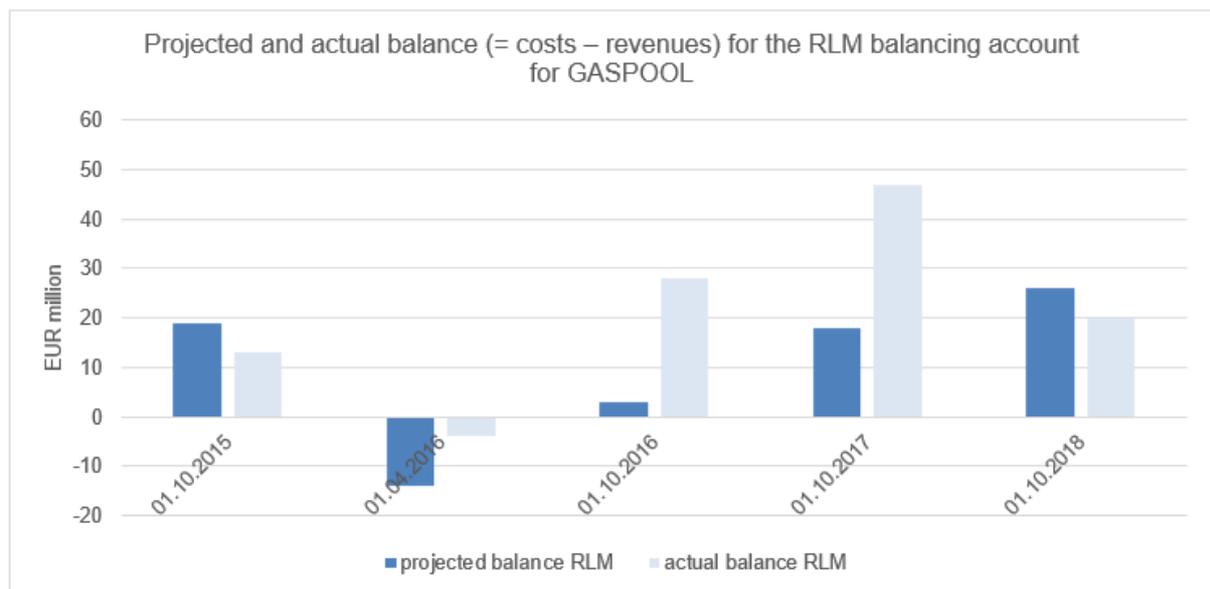


Figure 25: Projected and actual balance (= costs – revenues) for the RLM area for GASPOOL



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### Conversion fee payments and conversion neutrality charges

Cross-quality trading in the market areas is regulated by the so-called “Konni Gas” ruling (conversion system in cross-quality market areas). Since balancing energy is bought and sold by the MAM for commercial balancing actions, the fees and neutrality charges are presented here<sup>6</sup>.

The following Table V shows both the conversion charge for high CV gas to low CV gas and the conversion allocation since October 2015.

*Table V: Conversion charge and conversion allocation at GASPOOL*

	Conversion allocation in EUR/MWh	Conversion charge from high CV to low CV gas EUR/MWh	Conversion charge from low CV to high CV gas EUR/MWh
01/10/2015	0	0.441	0.441
01/04/2016	0	0.441	0.441
01/10/2016	0	0.441	0
01/04/2017	0.022	0.4	0
01/10/2017	0.017	0.45	0
01/10/2018	0.075	0.45	0
01/10/2019	0.005	0.42	0

## 9 Conclusion / Summary

Throughout the period covered by this report we were consistently able to ensure the procurement of balancing energy in the GASPOOL market area and thus meet one of our key responsibilities in our capacity as MAM. We carried out our balancing activities not only effectively but also efficiently whilst meeting the regulatory requirements set out in the GaBi Gas 2.0 ruling. Overall, some 2.8 TWh of high CV gas<sup>7</sup> (previous year: 6.9 TWh, down 59.4%) were bought for balancing purposes at a total cost of EUR 61.7m (previous year: EUR 149.79, down 58.8%) compared with sales of 4.5 TWh (previous year: 8.7 TWh, down 48.3%) and revenues of EUR 160.553m (previous year: EUR 165.58m, down 53.9%). This results in a cumulative negative balance of 1.7 TWh.

Overall, 6.3 TWh of low CV gas (previous year: 13.0 TWh, down 51.5%) were bought for balancing purposes at a cost of EUR 131.9m (previous year: EUR 319.4m, down 58.7%), compared with sales of 1.6 TWh (previous year: 3.0 TWh, down 46.7%) and revenues of EUR 23.3m (previous year: EUR 64.8m, down 63.8%).

In adjacent market areas we purchased 5.198 TWh at the TTF at a cost of EUR 110.19m (previous year: 7.5 TWh / EUR 163.9m, 70% and 67%, respectively). This compares to sales of 0.078 TWh generating total revenues of EUR 1.414m (previous year: 0.4 TWh / EUR 8.3m, 19.5% and 17%, respectively). The proportion of our total balancing quantities that was traded on the exchange made

<sup>6</sup> The calculation basis for the conversion charge and conversion allocation is published on the website: <https://www.gaspool.de/services/bilanzkreisverantwortliche/konvertierung/konvertierungsentgelt/>

<sup>7</sup> To ensure comparability of these figures with the previous year, all MOL 1 balancing actions have been treated as relating to the high CV network areas and have therefore been included in this data.

up a share of almost 100% and thereby delivered on the aims of the underlying regulatory framework. The proportion of within-day balancing transactions was around 50%. The figure in the previous GY 2017/2018 was around 43%.

There was no change made to the methodology applied to calculate transportation markups and markdowns in this GY. This means that 24 different transportation markups and markdowns continue to be possible per day and direction (see 3.2.).

From today's perspective we do not see any possibility to reduce current contract volumes for Flexibility Services in the GASPOOL market area. Instead, the tendered and contracted flexibility service was increased for GY 2018/19. Owing to the underlying contractual arrangements, as already described in detail above, especially due to their short-notice availability within 90 minutes of receipt of a service instruction, our contracted Flexibility products deliver a significant contribution to upholding supply security. As there are presently no alternative products available on the exchange, we will not be able to reduce our Flexibility needs for the time being.

Our measures to implement the BMWi policy paper included the contracting of additional LTO reserves of 1.37 GW for January 2018 and 2.33 GW for February and March 2019 in the low CV network areas of Gasunie, Nowega and GTG. The costs for capacity charges we incurred under these contracts amounted to a total of EUR 11.192m.

A comparison between the costs and revenues allocated to the SLP and RLM balancing neutrality accounts has shown that more costs were charged to the SLP account (EUR 107m; previous year: EUR 156.9m, down 31.8%) than the RLM account (EUR 56.2m; previous year: EUR 115m, down 51.1%). SLP-related revenues totalled EUR 34.5m (previous year: EUR 49m, down 29.5%), while total RLM-related revenues stood at EUR 29.8m (previous year: EUR 20.2m, up 47.5%). No distributions will be made from the balancing neutrality accounts for GY 2018/2019 as the conditions for such distributions are not satisfied.

The balancing platform operated as an interim measure was no longer used from 1 January 2018. Our locational balancing requirements can now be met by trading gas in the zone-specific order books available on PEGAS. In addition, we can also use our new MOL 4 balancing product STB if needed. The tendering platform (ASP) is used for the non-standardised MOL 4 balancing products LTO and STB.

## 10 Annex I - Overview of external balancing quantities and costs

Table VI: Balancing costs and revenues by MOL [EUR], excluding capacity charges

	2017/2018		2018/2019	
	Costs (System Buy, Entry)	Revenues (System Sell, Exit)	Costs (System Buy, Entry)	Revenues (System Sell, Exit)
MOL 1	1,404,732.50	2,578,857.21	1,507,996.80	2,169,059.41
MOL 2	468,872,085.08	229,873,690.19	201,819,768.78	99,639,388.25
MOL 3	0.00	0.00	0.00	0.00
MOL 4	86,011.65	0.00	180,245.50	0.00
<b>Total</b>	<b>470,362,829.23</b>	<b>232,452,547.40</b>	<b>203,508,011.08</b>	<b>101,808,447.66</b>

Table VII: Balancing costs and revenues by MOL and timing [EUR], excluding capacity charges

		2017/2018		2018/2019	
		Costs (System Buy, Entry)	Revenues (System Sell, Exit)	Costs (System Buy, Entry)	Revenues (System Sell, Exit)
MOL 1	Day-ahead	1,002,772.80	445,088.16	1,003,633.20	712,747.80
	Rest-of-the-day	401,959.70	2,133,769.05	504,363.60	1,456,311.61
MOL 2	Day-ahead	335,650,036.78	82,501,998.10	129,421,938.05	24,314,779.20
	Rest-of-the-day	133,222,048.30	147,371,692.09	72,397,830.73	75,324,609.05
MOL 3	Day-ahead	0.00	0.00	0.00	0.00
	Rest-of-the-day	0.00	0.00	0.00	0.00
MOL 4	Day-ahead	0.00	0.00	0.00	0.00
	Rest-of-the-day	298,731.00	0.00	127,144.50	0.00
	Flexibility (comm.)	86,011.65	0.00	53,101.00	0.00

Table VIII: Capacity charges paid under MOL 4 contracts [EUR]

	2017/2018		2018/2019	
	System Buy	System Sell	System Buy	System Sell
Flexibility capacity charges	16,708,861.00	0.00	39,230,200.00	0.00
LTO capacity charges - BMWi policy paper	1,788,675.00	0.00	1,788,675.00	0.00
LTO capacity charges - supplemental tender	0.00	0.00	0.00	0.00

Table IX: Number of days on which MOL 4 contracts were used

2017/2018		2018/2019	
Flexibility, parking	Flexibility, lending	Flexibility, parking	Flexibility, lending
33	70	27	69

Table X: Quantities supplied/received by MOL [MWh]

	2017/2018		2018/2019	
	System Buy, Entry	System Sell, Exit	System Buy, Entry	System Sell, Exit
MOL 1	52,104	122,841	69,365	144,597
MOL 2	19,880,873	11,715,034	9,374,675	6,091,412
MOL 3	0	0	0	0
MOL 4	361,405	0	229,645	0
<b>Total [MWh]</b>	<b>20,294,382</b>	<b>11,837,875</b>	<b>9,673,685</b>	<b>6,236,009</b>

Table XI: Quantities supplied/received by MOL and timing [MWh]

		2017/2018		2018/2019	
		System Buy, Entry	System Sell, Exit	System Buy, Entry	System Sell, Exit
MOL 1	Day-ahead	36,768	19,935	47,880	46,896
	Rest-of-the-day	15,336	102,906	21,485	97,701
MOL 2	Day-ahead	13,892,977	4,092,631	6,077,094	1,578,672
	Rest-of-the-day	5,987,896	7,622,403	3,297,581	4,512,740
MOL 3	Day-ahead	0	0	0	0
	Rest-of-the-day	0	0	0	0
MOL 4	Day-ahead	0	0	0	0
	Rest-of-the-day	14,900	0	4,110	0
	Flex (total from parking and borrowing)	346,505	0	225,535	0

Table XII: MOL 2 within-day balancing actions in opposite directions by day

Quality / Location	Date	Quantity in MWh
High	30/09/2019	858
Low	09/10/2018	6,120
Low	18/10/2018	3,200
Low	31/10/2018	5,424
Low	02/12/2018	1,016
Low	06/12/2018	5600
Low	12/12/2018	2,156
Low	20/12/2018	1,776
Low	26/12/2018	8,100
Low	06/01/2019	9,648
Low	13/01/2019	4,184
Low	22/01/2019	10,010
Low	24/01/2019	4,490
Low	31/01/2019	2,712
Low	01/02/2019	10,171
Low	16/02/2019	7,103
Low	22/03/2019	3,024
Low	06/04/2019	7,498
Low	21/04/2019	3,605
Low	22/04/2019	4,000
Low	23/04/2019	9,993
Low	29/04/2019	10,224
Low	02/05/2019	12,981
Low	16/05/2019	5,004
Low	23/05/2019	14,040
Low	29/05/2019	11136
Low	01/06/2019	6,048
Low	04/09/2019	1,938
Low	07/09/2019	12,124
Low	18/09/2019	7,200
Low	30/09/2019	5390
TTF	22/01/2019	4267
TTF	26/01/2019	24,984
TTF	30/01/2019	2,400
TTF	18/05/2019	1,958
TTF	30/09/2019	5,060