Technical Rule MGAS no. 15

(under article 4 of the Natural-Gas Market Rules, approved by the Ministry of Economic Development with its Decree of 6 March 2013, as subsequently amended and supplemented)

Title	**Bids/Asks Adequacy Verification of Guarantee Coverage**

Reference legislation	Article 72, paras. 72.1, 72.2, 72.4, 72.5 and 72.7 of the Natural-Gas Market Rules

In force from 1 April 2017

Table of contents

1. Foreword

Article 31, para. 31.1, subpara. g), Article 36, para. 36.1, subpara. g) and Article 58, para. 58.1, subpara. g) of the Rules provide that, after receiving each bid/ask in the MGP-GAS, MI-GAS and MT-GAS, respectively, GME shall check whether the bid/ask is guaranteed under Article 72 of the same Rules.

Article 43, para. 43.2, subpara. e) of the Rules provides that, for MPL GME shall check weather each demand bid is guaranteed under Article 72 of the same Rules.

Article 51, para. 51.2, subpara. e) of the Rules provides that, for the MGS GME shall check weather each demand bid is guaranteed under Article 72 of the same Rules.

Article 26, para. 26.5, subpara. b) of the Rules provide that the registration of the Market Participant's net position shall be allowed if it is guaranteed under Article 72 of the same Rules.

Article 72 of the Rules stipulates that:

- GME shall determine and update the available amount of the guarantee in accordance with the modalities and within the time limits defined in the Technical Rules (para. 72.1). If the guarantee is not sufficient, the Market Participant shall increase the guaranteed amount in accordance with the modalities and within the time limits defined in the Technical Rules (para. 72.2);
- Where provided for by the Rules, after the submission of bids/asks into the MGAS and upon registration of the net delivery position at the PSV, as set forth in Articles 26 of the Rules, respectively, GME shall verify whether the available amounts of the related guarantees are sufficient in accordance with the procedures defined in the Technical Rules (para. 72.4);
- GME shall determine and update the available amount of the guarantee and carry out the adequacy verifications under the procedures specified in the Technical Rules and the principles stated in the same Article 72 (para. 72.5);
- GME shall decrease the Market Participants' guaranteed amount by a value specified in the Technical Rules (para. 72.5, subpara. a);
- GME shall define the values of the parameters α and β in the Technical Rules (para. 72.7).

2. Adequacy verifications of the guarantee coverage with respect to the exposure

2.1 How to perform the adequacy verifications

As part of its guarantee system, GME provides the implementation of financial adequacy verification to assess the adequacy of the available guarantee amount for each Market Participant in order to cover its exposure for each payment date (settlement), calculated on the basis of submitted bids/asks and/or the net holding position.

The available amount of the guarantee C is obtained by the algebraic sum of the guarantee G[1], calculated as described in paragraph 3 below, and the exposure E[2], calculated as described in paragraph 44:

$$C = G + E$$

The adequacy verification of the guarantee is successful if:

$$C \geq 0$$

That verification take place in the different moments of the contract in which the exposure arises.

For MGP-GAS, MI-GAS and MT-GAS:

1. *at the time of proposal*

   Following the submission of a buy/sell order and after checking the compliance with price and volume limits, GME verifies the adequacy of the bid/ask in the context of the overall exposure of the Market Participant, calculated as described in paragraph 4.1.1., by comparing to the amount of the guarantee provided by the Market Participant.

   The bid/ask is guaranteed, and then available in the trading book, if the amount of the guarantee is greater than or equal to zero. If, otherwise, the outcome of the verification is negative, the offer is rejected.

2. *at the time of post-matching process*

[1] It can be a positive or zero value.
[2] It can be a negative or zero value.

After the proposal is matched, GME verifies the adequacy of the global exposure on the held position, but not yet covered by delivery: Market Participant's exposure is calculated as described in paragraph 4.1.2.1., with respect to the amount of the pledged guarantee.

The position is guaranteed if the adequacy verification of the available amount of guarantee is successful. Otherwise, an adjustment of the guarantee is required, as described in paragraph 0.

3. *at the time of post-delivery process*

Following the delivery, the adequacy check is performed, based on the total exposure arising from the position held by the Market Participant, calculated as described in paragraph 4.1.2.2, with the purpose of releasing the required guarantees on net sales positions and determining the related credit.

For MGS and MPL:

1. *at the closing of bids/offers collection*

Upon closing of the bids/offers collection, in order to accept bids/offers for the determination of the auction results, GME shall verify the adequacy of the bids/offers in the context of the Participant's overall exposure, calculated as described in paragraph 4.2.1 with respect to the amount of the pledged guarantee.

The bid/offer is financially adequate and then considered for the auction execution if the amount of the guarantee is greater than or equal to zero. If, otherwise, the outcome of the verification is negative, the offer is rejected.

2. *at the auction execution*

Once the auction is executed, GME shall verify the adequacy of the held position in the context of the Participant's overall exposure, calculated as described in paragraph 4.2.2, with respect to the amount of the pledged guarantee.

2.2 Updating of the available amount of the guarantee

In addition to the validity items of the agreement described above, the available amount of the financial guarantee is also recalculated:

- upon the withdrawal of a bid/ask offer on the trading book;
- at the end of each market session;
- upon the updating of the check price[3];
- upon the updating of the parameter α;
- upon the modification of the VAT number;
- upon the updating of the amount of the guarantee;
- upon payments.

The position is guaranteed if the result of the check on the coverage of the guarantee amount is positive. If the result of the check is negative, it is required an adjustment of the guarantee, as indicated in paragraph 3.1.

3 Definition of the guarantee for adequacy verifications

The amount of guarantees provided by each Market Participant, in the form of bank guarantee with no expiry date or cash deposit[4], is reduced by an amount, called maintenance margin (MM), equal to 10% of the total amount of the guarantees.

The guarantee posted by each Market Participant and used for determining the available amount of guarantee is equal to:

Equation 1

$$G = \left(\sum_i F_i + \sum_j D_j \right) * (1 - MM)$$

Where

[3] See Art. 2, para. 2.1, subpara. j) of the MGAS Rules.
[4] The Market Participants of public administrations provided for in Article 1, paragraph 209 of Law 24 December 2007, no. 244 (PA Market Participants) can only issue guarantees in the form of cash deposit.

F_i = amount of the i-th bank guarantee posted by the Market Participant

D_j = amount of the j-th cash deposited by the Market Participant

MM = 10%

3.1 Adequacy of the available amount of guarantee

If the amount of the guarantee, updated with reference to the Technical Rules, does not result sufficient, GME will send to the Market Participant by e-mail a request for adjustment of the guarantee in order to cover the current exposure.

The Market Participant, by 10.30 am within the 3rd working day following the adjustment request:

- must pay by the bank in charge with the GME settlement service, via Urgent/*Priority* SEPA Credit Transfer or equivalent procedures, the adequate amount to ensure his/her/its exposure coverage, or
- must submit a bank guarantee (or adjust the bank guarantee, already provided) for an amount at least equal to ensure his/her/its exposure coverage. [5]

If the Market Participant fails to adjust the guarantee within the above time limits, GME will initiate the default procedure referred to Article 78, para- 78.1 of the Rules.

4 Definition of the exposure for the guarantee adequacy verifications

4.1. Definition of the exposure in the MGP-GAS, MI-GAS and MT-GAS

4.1.1 Exposure on proposals

Each proposal generates exposure, for each single flow day, depending on:

(1) the mark-to-market, i.e. the differential value between the bid/ask price and the check price, calculated for long and short positions (EC exposure);

(2) the adequate amount to cover a worsening of the resulting net position compared to the held, but undelivered, one[6]. The calculation method depends on the specific

[5] That possibility is not allowed to PA Participants since they have to pay these guarantees exclusively in the form of cash deposit.

bid/ask flow day, and on the remaining time until the delivery day (EF or PF exposure).Thus, it will be equal to:

(2a) the greater value between a quota (measured by the Alpha parameter) of the value (valued at the check price) related to

- the net sell position, given by the worst matching scenario, up to the delivery

  and

- the net long position, determined in the worst matching scenario, up to five days prior to the date of delivery;

or

(2b) the greater value, in the five days prior to the date of delivery, between

- the 100% (valued at the check price) of the net undelivered long position counter value, determined in the worst matching scenario between the held position and the bids/asks of the same sign, and
- a quota (measured by the Alpha parameter) of the current net undelivered sell position to be determined in the worst matching scenario with the same sign[7].

With reference to the calculation in point **(1)**, upon presentation of a proposal, whether a buy or sell order, the following EC component is calculated:

Equation 2

$$EC_g = \sum_i Se\left[\left(Pp_i * (1 + IVA) - PC_g * (1 + IVA)\right) \times QP_{g,i} \geq 0; 0; QP_{g,i} * \left(Pp_i * (1 + IVA) - PC_g * (1 + IVA)\right)\right]$$

where:

EC_g = exposure determined by all proposals of any type of contract on the day g

g = the reference date for delivery (flow day)

[6] If the proposal does not result in the described worsening, further absorption (2) does not take place.
[7] The case (2b) shall always be applied to the bids/asks referred to the spot positions.

i = the i-th contract

Pp_i = proposal price on the i–th contract

PC_g = check price of the delivery day g

$QP_{g,i}$ = volume of the proposal for the i-th contract referred to the delivery day g, with a negative sign for buy order and a positive sign for sell order

VAT = tax rate applicable to the Market Participant on the transactions of the same sign with respect to the contract when referring to the Pp_i price or the tax rate applicable to the Market Participant on the opposite transactions with respect to the I contract the price when referring to the PC_g price.

As regards the calculation in point **(2)**, upon the submission of a proposal, it's required to determine whether this is done on a day d prior more or less 5 days than the delivery date g:

(2a) If a bid/ask is submitted on a day d more than 5 days prior to the delivery on day g – i.e. for the Market Participant, who is submitting an offer on a futures product (BoM included for compatible period) – it's required to check if the sum of the net position arising out of the contracts traded on the day g and the amount of gas in the above proposal and any other proposals on day g of the same sign already on every book of MGAS is greater, in absolute value, than the net position already traded by the Market Participant on the same day g:

- if the condition is not met, it means that the proposal, together with the other ones in the book, does not lead to a worsening in terms of more exposure, compared to a net position already traded. The proposal will not generate a further absorption of the guarantee, obviously excluding any mark-to-market referred to point (1), compared to that absorbed by the net position already traded;

- if the condition is met, it's required to recalculate the exposure considering the most unfavorable match of this proposal and any other proposals of the same sign in the book, together with the net position already traded.

Exposure EF on proposals made on any contract referred to the day g is calculated as follows:

Equation 3

$\forall g | g - d > 5$:

$$EF_g = \max\left(EF_g^+; EF_g^-\right)$$

Equation 4

$\forall QP_{g,i} > 0$

$$EF_g^+ = Se\left\{\begin{array}{l} \left|\sum_i Q_{g,i} + \sum_{i \forall QP_{g,i}>0} QP_{g,i}\right| > \left|\sum_i Q_{g,i}\right| ; \\ -\left[\left|\sum_i Q_{g,i} + \sum_{i \forall QP_{g,i}>0} QP_{g,i}\right| \times \alpha \times PC_g \times (1+IVA)\right] ; -\left[\left|\sum_i Q_{g,i}\right| \times \alpha \times PC_g \times (1+IVA)\right] \end{array}\right\}$$

Equation 5

$\forall QP_{g,i} < 0$

$$EF_g^- = Se\left\{\begin{array}{l} \left|\sum_i Q_{g,i} + \sum_{i \forall QP_{g,i}<0} QP_{g,i}\right| > \left|\sum_i Q_{g,i}\right| ; \\ -\left[\left|\sum_i Q_{g,i} + \sum_{i \forall QP_{g,i}<0} QP_{g,i}\right| \times \alpha \times PC_g \times (1+IVA)\right] ; -\left[\left|\sum_i Q_{g,i}\right| \times \alpha \times PC_g \times (1+IVA)\right] \end{array}\right\}$$

Where:

EF_g^+ = exposure determined by all the sell proposals of any type of contract on the books and related to the day g, together with the prior net position

EF_g^- = exposure determined by all the buy proposals of any type of contract on the books and related to the day g, together with the prior net position

g = the reference date for delivery (flow day)

d = the day when the proposal is submitted

$Q_{g,i}$ = traded and undelivered volume on i-th contracts relating to the delivery day g[8]

$QP_{g,i}$ = volume of the proposal/s for the i-th contract referred to the day of delivery g

P_i = proposal price on the contract i-th

PC_g = check price of the delivery day g

VAT = tax rate applicable to the Market Participant on the transactions with opposite sign compared to the sign of the net position.

(2b) If the bid/ask is submitted on a day d less than 5[9] days prior to the delivery on the day g for the Market Participant, who is submitting a bid/ask on a spot product or on a futures product (BoM included for compatible period) close to its expiration – it's considered the most unfavorable absorption of guarantee between:

- the exposure determined by the most unfavorable[10] potential match of this proposal and any other proposals of the same sign in the book, together with the net undelivered position already traded (see Equation 7 and Equation 8). This recalculation is differentiated depending on the sign of the unfavorable resulting net position:
    - if the net position is long, PF exposure is calculated as 100% of its value;
    - if the net position is short, EF exposure is determined as the partial value (measured by Alpha parameter) of exposure.
- the exposure of the net undelivered position already traded (see Equation 9).

If it appears that this is the most unfavorable condition, it means that the proposal does not result in worsening in terms of exposure, compared to a net position already traded. The proposal will not generate a further absorption of the guarantee, obviously excluding any mark-to-market referred to point (1).

[8] The sum of the entire volume, subject of the contracts including the delivery day g (Qg, i), determines the net position related to the already traded position on the MGAS.
[9] The fifth day is included.
[10] With reference to risk exposure.

In such cases, the exposure on the proposals made on any *i* contract referred to the day g is calculated as follows:

Equation 6

$\forall g | g - d \leq 5$:

$$X_g = \max\left(X_g^+; X_g^-; X_g^T\right)$$

Where $X_{g,i}$ can alternately be the $PF_{g,i}$ or $EF_{g,i}$ component, depending on the net long or short position on which the exposure may be calculated, respectively, as specified in the above description and in the formulas below.

Equation 7

$\forall QP_{g,i} > 0$

$X_g^+ =$

$$Se\left\{\begin{array}{c}\left(\sum_i Q_{g,i} + \sum_{i \forall QP_{g,i}>0} QP_{g,i}\right) > 0; \\ \mathrm{EF}_{g,i} = -\left[\left(\sum_i Q_{g,i} + \sum_{i \forall QP_{g,i}>0} QP_{g,i}\right) \times \alpha \times PC_g \times (1 + IVA)\right]; 0\end{array}\right\}$$

Equation 8

$\forall QP_{g,i} < 0$

$X_g^- =$

$$Se\left\{\begin{array}{c}\left(\sum_i Q_{g,i} + \sum_{i \forall QP_{g,i}<0} QP_{g,i}\right) > 0; \\ 0; \mathrm{PF}_{g,i} = \left(\sum_i Q_{g,i} + \sum_{i \forall QP_{g,i}<0} QP_{g,i}\right) \times PC_g \times (1 + IVA)\end{array}\right\}$$

Equation 9

$$X_g^T = \begin{cases} \sum_i Q_{g,i} > 0; \\ Se \left\{ \mathrm{EF}_{g,i} = -\left[\left| \sum_i Q_{g,i} \right| \times \alpha \times PC_g \times (1 + IVA) \right]; \right\} \\ \mathrm{PF}_{g,i} = \sum_i Q_{g,i} \times PC_g \times (1 + IVA) \end{cases}$$

Where:

X_g^+ = exposure determined by all sell proposals of any type of contract on the books and referred to the day g, together with the prior undelivered net position

X_g^- = exposure determined by all buy proposals of any type of contract on the books and referred to the day g, together with the prior undelivered net position

X_g^T = exposure determined by the prior undelivered net position of any type of contract referring to the day g

4.1.2 Exposure on the traded position

4.1.2.1 Exposure on the position traded, but not delivered

With reference to each flow day, any position, which is held, but has not delivered yet, the absorption of the guarantee is based on:

(1) the mark-to-market, calculated as the difference between the trading price and the check price, both for long and short positions;

(2) the appropriate quota to cover the risk related to the specific time to delivery. It corresponds to:

(2a) a quota (measured by the Alpha parameter) of the value of the net short position up to the delivery and the net long position until the fifth day before the date of delivery and

(2b) the 100% of the counter value of the net long position (valued at the check price) in the five days preceding the delivery and until the settlement.

As regards the calculation in point **(1)**, for each traded position, long or short, which is considered together with the other ones, the following EC component is calculated:

Equation 10

$$EC_g = \sum_i \left[\left(P_i * (1 + IVA) - PC_g * (1 + IVA) \right) \times Q_{g,i} \right]$$

where:

EC_g = exposure determined by all contracts traded on the day g

g = reference date for delivery (flow day)

i = the i-th contract

P_i = trading price of the i-th contract

PC_g = check price of the delivery day g

$Q_{g,i}$ = volume of the trade of the i-th contract referred to the day of delivery g, with a negative sign for buy trade and a positive sign for sell trade

VAT = tax rate applicable to the Market Participant on the transactions of the same sign with respect to the *i* contract when referred to the price P_i or tax rate applicable to the Market Participant on the transactions of opposite sign with respect to the i contract when referred to the price PC_g

With reference to the calculation in point **(2)**, distinction must be made:

(2a) if it holds a net position on the day d more than 5 days prior to the delivery on the day g, EF exposure is determined as:

Equation 11

$\forall g \mid g - d > 5$:

$$EF_g = -\left[\left|\sum_i Q_{g,i}\right| \times \alpha \times PC_g \times (1 + IVA)\right]$$

(2b) if it holds a net position on the day d less than 5[11] days prior to the delivery on the day g, the absorption of the guarantee depends on the sign of the net resulting position.

- If the net position is short, EF exposure is determined as, partial value, measured by the Alpha parameter, of its counter value:

Equation 12

$\forall g | g - d \leq 5 \cap \sum_i Q_{g,i} > 0$:

$$EF_g = -\left[\sum_i Q_{g,i} \times \alpha \times PC_g \times (1 + IVA)\right]$$

- If the net position is long, PF exposure is determined as 100% of the counter value:

Equation 13

$\forall g | g - d \leq 5 \cap \sum_i Q_{g,i} < 0$:

$$PF_g = \sum_i Q_{g,i} \times PC_g \times (1 + IVA)$$

Please note that these formulas (see Equation 11, Equation 12 and Equation 13) have not to be calculated on the day g if on the same day there is a QP generating exposure according to the calculations in Paragraph 4.

[11]The fifth day is included.

4.1.2.2. Exposure on the traded and delivered position

With reference to each flow day, each held position, already delivered by registration on the PSV, determines the calculation of the PF exposure [12] equal to 100% of the counter value of the same position, .

Operationally, if the Market Participant holds a net position on the day d following the delivery on the day g, PF component is calculated as:

Equation 14

$$PF_g = \sum_i Q_{g,i} \times P_i \times (1 + IVA)$$

where:

VAT = VAT rate applied to the transaction.

Net long positions will determine absorption of the guarantee for each flow day, while the net short positions will determine the opportunity to compensate all or part of the debt exposures related to the same settlement date (see Equation 19 and Equation 20 in paragraph 0).

4.2 Definition of the exposure in the MGS and MPL

4.2.1 Exposure on proposals

During the adequacy check, after the closing of the auction session of the MGS and MPL, for the acceptance of the bids/offers collected for the determination of the auction results, proposals generate exposure, for a single flow day, according to the worst matching scenario, namely that the match of all the buy proposals with respect to any position already held after any previous MGS /MPL session in the same flow day.

Equation 15

$$PF_g^{MGS+MPL} = \left[\left(\sum_i Q^j{}_{g,i} \times P^j{}_{g,i}\right) \times (1 + IVA_i)\right] + \left[\left(\sum_{i \forall QP_{g,i} \times Pp_{g,i} < 0} QP^j{}_{g,i} \times Pp^j{}_{g,i}\right) \times (1 + IVA_i)\right]$$

where:

[12] Sign depends on net position one (long or short).

$PF_{gh}^{MGS+MPL}$ = exposure determined from the financial position of all the i-th bid/offers related to the flow day g, together with the net previous position;

j = type of session (MGS/MPL);

$Q_{g,i}$ = volume, expressed in MWh, of the i-th contract, referring to the flow day g, with a negative sign for purchases and a positive sign for sales;

$P_{g,i}$ = price on the i–th contract referred to the delivery day g;

Pp_i = price on the i–th proposal referred to the delivery day g;

$QP_{g,i}$ = volume, expressed in MWh, of the proposal for the i-th contract referred to the flow day g, with a negative sign for buy order and a positive sign for sell order;

VAT = VAT rate applied to the transaction.

During the adequacy check if the total exposure exceeds the guarantee, acceptance of bids/offers shall take place up to capacity limit according to merit priorities, considering those already deemed adequate.

The exposure and, therefore, the amount of the guarantee is updated after the determination of the auction results as explained below.

4.2.2 Exposure on the traded position

Each position, with reference to each individual flow day, and object of regulation to the settlement date, generates the calculation of the PF component according to the following formula:

Equation 16

$$PF_g^{MGS+MPL} = \left[\left(\sum_i Q^j{}_{g,i} \times P^j{}_{g,i}\right) \times (1 + IVA_i)\right]$$

Net purchase positions generate exposure for each flow date, and therefore guarantee absorption, according to the 100% of the equivalent of the net purchase position, valued at the offered price awarded in auction.

Conversely, the net sale positions generate a sort of virtual credit that can be used to compensate only debt exposures related to the same settlement date.

4.3 Exposure by settlement date

The exposure is determined based on the weekly *settlement*.

For this purpose, the individual $EC_{g,i}$, $EF_{g,i}$, $PF_{g,i}$ and and $PF_g^{MGS+MPL}$ daily exposures, represented in the paragraphs 4.1 and 4.2 above are aggregated according to the *settlement* date S – determined on a calendar that will be published on GME's website on an annual basis – is associated with each flow day g.

Equation 17

$$EC_S = \sum_{g \in S} EC_{g,i}$$

Equation 18

$$EF_S = \sum_{g \in S} EF_{g,i}$$

Equation 19

$$PF_S = \sum_{g \in S} PF_g + \sum_{g \in S} PF_g^{MGS+MPL}$$

The total exposure on the MGAS at each settlement date S is equal to:

Equation 20

$$E_S = PF_S + EF_S + EC_S$$

In this way, for each settlement date, the short positions delivered may compensate the debt exposure, as it may result in lower guarantee absorption.

The overall exposure of the Market Participant on the MGAS is the sum of only debt exposures on individual settlement dates:

Equation 21

$$E = \sum_{\forall E_S<0} E_S$$

5. Value of the parameters α and β

For the purposes of calculating the exposure, each product differentiated by maturity is associated with a riskiness parameter, as shown in the following table

	MATURITY			
	1	2	3	4
Monthly[13]	19.70%	19.60%	16,50%	
Quarterly	15.00%	15.00%	15,00%	15,00%
Half-yearly	14.50%	14.50%		
Yearly	13.90%			
Daily	10.40%			

The net delivery position of each gas-day is associated with a parameter Alpha α, equal to the highest of the riskiness parameters associated with the products being traded and concerning the corresponding gas-day.

With reference to the parameter β, its exploitation as well as its recognition in the calculation level will be identified once the market will offer significant correlation scenarios between products with different maturities.

[13] In order to identify the risk, the BoM product is assimilated to the monthly product, as its risk parameter is associated to the monthly product in the table.