Technical Rule MGAS no. 07 rev. 3

(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 Validation and Adequacy Verification of Guarantee Coverage**

Reference legislation	Article 19, para. 19.3; Article 29, para. 29.1, subpara. e); Article 35, para. 35.1, subpara. e); Article 42, para. 42.1, subpara. e) and Article 57, paras. 57.1, 57.2, 57.4, 57.5 and 57.7 of the Natural-Gas Market Rules

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1. Foreword

Article 19, paras. 19.2 and 19.3 of the Natural-Gas Market Rules provides that, for each market participant authorized for the PSV, GME shall - in accordance with the procedures and within the time limits identified by GME and Snam Rete Gas in an appropriate agreement - acquire from Snam Rete Gas at least the personal identification data and the PSV code (para. 19.2), and that such data and information shall have effect within the time limits indicated in the Technical Rules (para. 19.3).

Article 29, para. 29.1, subpara. e), Article 35, para. 35.1, subpara. e) and Article 42, para. 42.1, subpara. e) 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 price and volume specified therein fall within the limits identified in the Technical Rules.

Article 29, para. 29.1, subpara. g), Article 35, para. 35.1, subpara. g) and Article 42, para. 42.1, 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 57 of the same Rules.

Article 25, para. 25 bis, subpara. b) of the Rules provide that, for the MGP-GAS and the MI-GAS, respectively, the registration of the Market Participant's net delivery position shall be allowed if it is guaranteed under Article 57 of the same Rules.

Article 57 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. 57.1). 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. 57.2);
- 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 25 bis 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. 57.4);

- 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 57 (para. 57.5);
- GME shall decrease the Market Participants' guaranteed amount by a value specified in the Technical Rules (para. 57.5, subpara. a);
- GME shall define the values of the parameters α and β in the Technical Rules (para. 57.7).

2. Schedule for transmission of data and information about PSV participants

Data and information about each Market Participant will be transmitted by Snam Rete Gas to GME on a daily basis by 9:15,AM and will be immediately effective.

3. Verification of the price and volume of submitted bids/asks

Bids/asks are valid if they satisfy the constraints given by:

- the price limit ➔ The offered price cannot be higher than the limit value equal to the check price increased by 25%, or lower than the limit value equal to the check price decreased by 25%, of the contract which the bid/ask refers to;
- the volume limit ➔ The volume specified in the bid/ask cannot be higher than a maximum value equal to 120,000 contracts ("volume locking limit "). In order to mitigate operational risk, it is also envisaged that an information alert will be sent to Market Participant in case a bid/ask exceeding the volume that, by default, is set as equal to 7,000 contracts, is placed ("volume alerting limit"). However, the Market Participant can set it as equal to another value.

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

4.1. 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 5 below, and the exposure E[2], calculated as described in paragraph 66:

$$C = G + E$$

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, that are:

1. *at the time of proposal*

   Following the submission of a buy/sell order on the MGAS 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 6.1, 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*

   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 1.1.6.2.1, 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 5.1.

3. *at the time of delivery*

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

It is allowed to register on PSV system a net long position if the related exposure, determined as described in paragraph 1.1.6.2.2, is covered by the amount of pledged guarantee.

Since the total exposure coverage related to the net long position is required since five days before the delivery, the delivery should be normally successful. The delivery cannot take place only when the Market Participant does not adjust the guarantee for the required amount by the fifth day prior to delivery in which the request is made until the day before the delivery itself, as specified in paragraph 5.1.

4.2. 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 updating of the amount of the guarantee;
- upon payments.

5. 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

[3] See Art. 2, para. 2.1, subpara. oo 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.

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

Where

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%

5.1. 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 63, para- 63.1 of the Rules.

6. Definition of the exposure for the guarantee adequacy verifications

6.1 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);

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

(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 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

[6] If the proposal does not result in the described worsening, further absorption (2) does not take place.

g = the reference date for delivery (flow day)

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:

[7] The case (2b) shall always be applied to the bids/asks referred to the spot positions.

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).

[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.

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).

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

$X_g^T =$

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

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

6.2 Exposure on the traded position

6.2.1 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

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

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

(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

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

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

[11]The fifth day is included.

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 6.

6.2.2 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 17 and Equation 18 in paragraph 6.3).

6.3 Exposure by settlement date

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

For this purpose, the individual $EC_{g,i}$, $EF_{g,i}$, and $PF_{g,i}$ daily exposures, in the cases (1) and (2) represented in the paragraphs 6 and 6.2 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 15

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

Equation 16

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

Equation 17

$$PF_S = \sum_{g \in S} PF_{g,i}$$

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

Equation 18

$$E_S = PF_S + EF_S + EC_S$$

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 19

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

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

7. 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.