Technical Rule no. 07 rev. 12 ME

(under Article 4 of the Integrated Text of the Electricity Market Rules, approved by the Decree of the Minister of Productive Activities of 19 December 2003,
as subsequently amended and supplemented)

Title	**Bid/Offer Adequacy Verifications and Available Amount of Financial Guarantees**

Reference Legislation	Article 2, para. 2.1, aaaaa) and Article 102, paras. 102.1, 102.2, 102.4 and 102.7, Integrated Text of the Electricity Market Rules

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1. Foreword

On each market, GME shall determine the exposure (see para. 2.3 for the MGP and MI; para. 3.3 for the MPEG; para. 4.3 for the MTE) of each Market Participant, depending on the potential risk of non-payment (settlement), and requires that Market Participant's exposure is covered by adequate guarantees (see para. 2.2 for the MGP and MI; para. 3.2 for the MPEG; para. 4.2 for the MTE). To this purpose, GME, at the proposal stage and at the following stages in which different values of exposure may arise, performs financial adequacy verifications in order to make sure that the given guarantee is adequate compared to the exposure.

Article 102 of the Integrated Text of the Electricity Market Rules (hereinafter: "ME Rules") also provides that:

- GME shall determine and update the capacity of the guarantee taking into account the allocation made by the Market Participant according to the terms and conditions and within the time limits defined in the Technical Rules (para. 102.1);
- if, after being updated, the guarantee is not sufficient, the Market Participant shall adjust the guaranteed amount in accordance with the terms and conditions and within the time limits defined in the Technical Rules (para. 102.2). Pending the adjustment of the guaranteed amount, the Market Participant may not conclude trades that lead to an increase in the Market Participant's exposure to GME, as indicated in the Technical Rules (para. 102.2, a));
- the determination, the updating of the guarantee capacity and the adequacy verifications are carried out according to the terms and conditions indicated in the Technical Rules and adopting the principles defined in Article 102 (para. 102.4);
- GME shall reduce the amount covered by guarantee of Market Participants by an amount whose value is defined in the Technical Rules (para. 102.4 a));
- Bids/offers submitted on the MTE are verified as adequate, provided they partially cover the payables arising from these bids/offers to the extent indicated in the Technical Rules (para. 102.4, c));
- In the case of activity both in the netting markets of the ME and in the netting markets of the MGAS, the capacity of the guarantee considered for the adequacy verifications of the bids/offers submitted by the Market Participant on the MGP and on the MI is determined by also taking into account its activity in the MPGAS, pursuant to the MGAS Rules (para. 102.4, f));
- the values of the parameters α, β, and γ are defined in the Technical Rules (para. 102.7);

Pursuant to Article 2, paragraph 2.1, aaaaa) of the ME Rules, the definition criterias of the MPEG check price are defined in the Technical Rules.

2. Guarantee system for the MGP and MI or for the netting markets

2.1 Definition of adequacy verifications

2.1.1 Adequacy verifications

GME shall carry out financial adequacy verifications aimed at verifying the capacity of a single guarantee, based on the provisions of paragraph 2.2 below, with respect to the comprehensive exposure deriving from the netting[1] markets, on the basis of the indications of paragraph 2.3.4 below. The capacity of the guarantee (C) is given by the algebraic sum between the guarantee (G[2]) and the exposure (E[3]).

Equation 1

$$C^{NETTING} = G^{NETTING} + E^{NETTING}$$

The verification on the capacity of the guarantee has a positive result if:

$$C^{NETTING} \geq 0$$

With reference to component G, the share of the guarantee intended for the netting markets is considered, as defined in Equation 4 of the following paragraph 2.2, while with reference to the component E, the exposure referred to the trading day t of the flow day g ($E_{t,g}$), and the credit position related to the settlement period S (CR_S) are considered, as defined in paragraph 2.3.4 below, for which the verification is being carried out, also considering the exposure and the credit position related to the settlement periods S ± N and different from S only if in debit ($P_{S\pm N}$).

[1] The netting markets refer to the set consisting of the netting markets of the ME (i.e. the MGP characterised by auction trading and the MI consisting of the sessions of the MI-A, characterised by auction trading, and of the MI-XBID, characterised by continuous trading) and the MGAS netting markets.
[2] It can have a positive or zero value.
[3] It can have a negative or zero value.

Equation 2

$$E^{NETTING} = CR_S + \sum_{t \in S} E_{t,g} + \sum_{\forall S \pm N \neq S} P_{S \pm N}$$

where

Equation 3

$$P^{\square}_{S \pm N} = se\left[\left(CR^{\square}_{S \pm N} + \sum_{t \in S \pm N} E^{\square}_{t,g}\right) < 0; CR^{\square}_{S \pm N} + \sum_{t \in S \pm N} E^{\square}_{t,g}; 0\right]$$

The amount of the guarantees and of the credit position suitable to cover the exposure is identified in light of the principle according to which the adequacy verifications are carried out considering that the trading date t to which the individual exposures $E_{t,g}$ refer is within the period of validity of the guarantees and that the flow date g referring to the individual exposures $E_{t,g}$ falls within the same settlement period of the credit position related to the reference market.
The guarantee allocation algorithm, as part of the adequacy verifications prioritizes, for the purpose of covering the individual debt exposures, the resource with the nearest term of validity. In the event that, in the reference settlement period there are no expiring bank guarantees, the allocation algorithm first uses 1) the net credit positions that are to be settled in the same period, then 2) the bank guarantees with a subsequent expiration date, then 3) the bank guarantees with no expiration date, and finally 4) the non-interest-bearing cash deposits.

In the event of a bank guarantee expiring in the reference settlement period, for individual exposures with a trading date falling on or prior to the expiration date of the bank guarantee, the allocation algorithm will follow, instead, the following order: 1) bank guarantee with expiration in the settlement period, 2) net accrued credit positions, 3) any other bank guarantees with expiration date, 4) bank guarantee with no expiration date, and 5) non-interest bearing cash deposits. For exposures with a trading date falling after the expiration of the bank guarantee, the priority rules specified in the previous paragraph will apply.

2.1.2. Adequacy verifications on the proposals

The adequacy check on MGP and MI-A is carried out at the end of the session with respect to the amount of the guarantee given and available within the netting markets. The proposals presented on MGP and MI-A are considered appropriate if the guarantee referred to in paragraph 2.2 is adequate. If this condition is not met, the acceptance of bids will occur up to capacity according to the priority based on market time interval/type/merit.

The adequacy check on MI-XBID is carried out at the time of submission of the bid/offer with respect to the amount of the guarantee booked in advance by the Market Participant, with the option to change it at any time[4]. The proposals presented on MI-XBID are deemed adequate if the guarantee booked for the purposes of operating on MI-XBID is sufficient. If this condition is not met, the proposal is not considered adequate and is not accepted.

When submitting a proposals into the MPGAS, the provisions of Technical Rule no. 15 MGAS will apply.

2.1.3. Other cases of updating guarantee capacity

In addition to the proposal phase, the capacity of the financial guarantee on the netting markets[5] is recalculated in the following cases:

- upon awarding of the MGP, MI-A, AGS, MGS and MPL auctions;
- upon booking, and any subsequent modification, of the guarantee on the MI-XBID;
- upon inclusion of the exposure/financial credit position deriving from the MI-XBID in the exposure/financial credit position of the netting[6];
- upon revocation of a demand bid/supply offer in the order book of the MGP-GAS and MI-GAS;
- upon registration at the PSV of the net position deriving from the MGP-GAS/MI-GAS;
- at the end of each MPGAS market session;

[4] It is understood that the amount of the available guarantee booked is updated upon the matching of the proposal with another proposal or can be updated, depending on the case, also upon the presentation of a new proposal/revocation of a purchase/sale proposal inserted into the order book on MI-XBID. For the purposes of the financial adequacy checks, the modification of a proposal already verified as adequate is equivalent to the revocation of the proposal presented and the submission of a new proposal.
[5] If the Market Participant is not admitted to MGAS the guarantee provided will only cover the market in which it operates.
[6] It takes place at the end of the MI-XBID market session.

- upon updating the check price in the MGP-GAS/MI-GAS[7];
- upon updating the parameter α in the MPGAS;
- upon changing the VAT code;
- upon updating the guarantee amount;
- upon settlement of payments[8].

The position is guaranteed if the guarantee is sufficient, otherwise an adjustment is required as indicated in the following paragraph 5.

2.2 Definition of the guarantee for adequacy verifications

The amount of the guarantees submitted by each Market Participant, in the form of a bank guarantee or non-interest-bearing cash deposit[9], is reduced by an amount, defined as maintenance margin (MM).

Since each Market Participant may define the share of its own guarantees to be allocated among GME's markets[10], the guarantee for the netting markets[11] is equal to:

Equation 4

$$G^{NETTING} = \left(\sum_i F_i + \sum_j D_j\right) \times \partial^{NETTING} \times (1 - MM^{NETTING})$$

where:

$G^{NETTING}$ = guarantee intended for the netting markets;

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

D_j = amount of the j-th deposit posted by the Market Participant;

$\partial^{NETTING}$ = share of guarantee intended for the netting markets (where $0 \leq \partial^{NETTING} \leq 1$[12]);

$MM^{NETTING}$ = maintenance margin on the netting markets.

[7] See Article 2, paragraph 2.1, subpara. ddd) of the MGAS Rules.
[8] Payments are defined as payments made to settle market payables in accordance with the provisions of Technical Rule no. 08 ME and, if the Market Participant is also admitted to the MGAS, in Technical Rule no. 16 MGAS. Therefore, if the Market Participant makes partial payments of the amounts owed, the capacity of the guarantee will not be updated.
[9] The PA participant can post a guarantee only in the form of a non-interest-bearing cash deposit.
[10] The sum of the percentage shares of the guarantee allocated among the PCE, MPEG, MTE, MT-GAS, and the netting markets, based on the allocation made by the Market Participant, must be equal to 100%
[11] See note 1
[12] See note 10

The maintenance margin for the share of the overall amount of the guarantees intended for the netting markets is set at 3%, of which 2% to cover default interest for late payment and 1% to cover the penalty.

It is pointed out that for a bank guarantee, in order to be considered eligible to cover an exposure, the period of validity must include the market execution date in which the exposure is determined. If the expiry dates of all bank guarantees provided are subsequent to the dates on which the exposures arise, such bank guarantees may be considered together and without distinction, along with the non-interest-bearing cash deposit, for the coverage of the total exposure. Otherwise, for each exposure, only bank guarantees whose validity includes the date on which the exposure arose will be considered. It is understood that each exposure is associated with a specific settlement period.

2.3 Definition of the exposure in the MGP and MI

For the purposes of adequacy checks in the context of the netting markets, the exposure relating to MGP and MI as well as the related financial position (see paragraph 2.3.3) derives from operations both in the auction sessions of the MGP and MI-A (see paragraph 2.3.1) and in the continuous trading sessions of the MI-XBID (see paragraph 2.3.2).

2.3.1 Exposure on proposals and on the position traded in the MGP and MI-A

During the adequacy verification phase - after the closure of the market session on the MGP and MI-A - in order to accept bids/offers for the determination of the auction results, the bids/offers pertaining to the market time intervals defined in Technical Rule no. 11 ME generate the exposure on each flow day and each trading day[13], based on the full countervalue of demand bids at a positive price, or supply offers at a negative price, valued at the offer price. The existing positions following the auctioning process generate the exposure per single trading day and per single flow day (see Equation 5).

[13] For the MGP and MI-A, the trading date is uniquely equal to the date on which the auction is awarded.

Equation 5

$$PF_{t,g}^{MGP+MI\_A} = \left[\left(\sum_i {Q^j}_{t,g} \times {P^j}_{t,g}\right) \times (1 + VAT_i)\right] + \left[\left(\sum_{i \forall QP_{t,g} \times Pp_{t,g} < 0} {QP^j}_{t,g} \times {Pp^j}_{t,g}\right) \times (1 + VAT_i)\right]$$

where

$PF_{t,g}^{MGP+MI\_A}$ = exposure on the MGP and MI-A given by the financial position on all the i-th demand bids at a positive price and supply offers at a negative price, submitted on the trading day t and referred to the flow day g, together with the previous net position traded on the same trading day t and referring to the same flow day g;

j = session type (MGP, MI-A1, MI-A2, MI-A3);

$Q_{t,g}$ = volume expressed in MW object of the i-th bid/offer accepted on the trading day t, on the reference market time interval of the flow day g. It is characterised by a negative sign for purchases and a positive sign for sales;

$P_{t,g}$ = price paid on the i-th bid/offer accepted on the trading day t, on the reference market time interval of the flow day g, including any non-arbitrage fee and the price differential[14] pertaining to the compensatory component due;

$Qp_{t,g}$ = volume expressed in MW object of the i-th bid/offer accepted on the trading day t on the reference market time interval of the flow day g. It is characterised by a negative sign for purchases and a positive sign for sales;

$Pp_{t,g}$ = price paid on the i-th bid/offer submitted on the trading day t, in the reference market time interval of the flow day g, including any non-arbitrage fee;

VAT = applicable VAT rate.

In case of submission of a demand bid on the MGP at a positive price higher than the conventional price defined by GME in line with what is indicated in Technical Rule no. 11 MPE, the calculation of the exposure is valued considering as a price of the bid/ask offer the conventional price defined by GME.

[14] Resulting from the difference between the price of valuing electricity in each bidding zone and in each market time interval and the PUN Index GME.

2.3.2 Exposure on proposals and on the position traded on MI-XBID

During the adequacy verification phase, each proposal pertaining to the market time intervals defined in Technical Rule no. 11 ME and presented in an MI-XBID order book, as well as the existing position after matching generates guarantee absorption[15] for each trading day[16] and for each flow day, depending on the entire countervalue of demand bids at a positive price, or supply offers at a negative price, valued at the offer/matching price[17].

Equation 6

$$PF_{t,g}^{MI\_XBID} = \left[\left(\sum_i Q_{t,g} \times P_{t,g}\right) \times (1 + VAT_i)\right] + \left[\left(\sum_{i \forall QP_{t,g} \times Pp_{t,g} < 0} QP_{t,g} \times Pp_{t,g}\right) \times (1 + VAT_i)\right]$$

where

$PF_{t,g}^{MI\_XBID}$ = exposure on the MI-XBID given by the financial position on all i-th demand bids at a positive price and supply offers at a negative price, presented on the trading day t and referring to the flow day g, together with the previous net position traded on the same trading day t and referring to the same flow day g;

$Q_{t,g}$ = quantity expressed in MW covered by the i-th matched bid/offer on the trading day t, on the reference market time interval of the flow day g. It has a negative sign for purchases and a positive sign for sales;

$P_{t,g}$ = price recognised on the i-th bid/offer matched on the trading day t, on the reference market time interval of the flow day g, including any non-arbitrage fee;

[15] At the time of submission of the proposal, the absorption takes place with respect to the booked guarantee, while at the end of the session or after the inclusion of the exposure/financial credit position deriving from the MI-XBID in the exposure/financial credit position of the netting, the absorption takes place with respect to the netting guarantee.

[16] For the MI-XBID, the trading date is uniquely equal to the date on which the Market Participant submits bids/offers or matches them. For example, if a participant submits bids/offers in the session on day t with opening at 15:30 on day t and closing at 22:00 on day t+1, all bids/offers that may be presented in the order book at 00:00 and verified as adequate at the time of submission with respect to the trading date t will be subject to a new financial adequacy check, automatically carried out by the system at 00:00, with reference to the trading date t+1.

[17] This also includes any imbalances with respect to the schedules, considering the day relating to the imbalance with respect to the schedule as the trading date and the day following the trading date as the flow date, i.e. the day on which Terna notifies GME of the value of imbalances. In fact, it should be remembered that if the imbalances with respect to the schedules generate exposure, GME will verify the related financial coverage with respect to the guarantees valid within the netting markets.

$Qp_{t,g}$ = quantity expressed in MW covered by the i-th bid/offer presented on trading day t, referring to the reference market time interval of the flow day g. It has a negative sign for purchases and a positive sign for sales;

$Pp_{t,g}$ = price recognised on the i-th offer presented on trading day t, on the reference market time interval of flow day g, including any non-arbitrage fee;

VAT = applicable VAT rate.

2.3.3 Exposure and credit position in the MGP and the MI

With reference to each single trading day corresponding to each flow day, the following positions contribute to determining the exposure: *(i)* each MGP and MI-A position subject to awarding, and *(ii)* each MI-XBID position subject to matching, after the inclusion of the exposure/ financial credit position deriving from the MI-XBID in the exposure/financial credit position of the netting.

It is understood that

- for net debt positions, the exposure is equal to 100% of the equivalent;
- for net credit positions, the exposure generates a credit component capable of offsetting any debt exposures subject to settlement on the same settlement date.

The Market Participant's exposure relating to the MGP/MI is equal to:

Equation 7

$$E_{t,g}{}^{MGP+MI} = E_{t,g}{}^{MGP+MI\_A} + E_{t,g}{}^{MI\_XBID}$$

where

Equation 8

$$E_{t,g}{}^{MGP+MI\_A} = se\left(PF_{t,g}^{MGP+MI\_A} < 0;\ PF_{t,g}^{MGP+MI\_A}; 0\right)$$

Equation 9

$$E_{t,g}{}^{MI\_XBID} = se\left(PF_{t,g}^{MI\_XBID} < 0;\ PF_{t,g}^{MI\_XBID}; 0\right)$$

The positive components $PF_{t,g}^{MGP+MI\_A}$, as well as the positive components $PF_{t,g}^{MI\_XBID}$ arising at the end of the session or the inclusion of the credit exposure/financial position deriving from the MI-XBID in the credit exposure/financial position of the netting markets, instead, determine the CR credit position that can be used by the Market Participant to offset the exposures referring to the same settlement date *S*, as part of the adequacy check, carried out as indicated in paragraph 2.1.1. It is equal to:

Equation 10

$$CR_S{}^{MGP+MI} = CR_S{}^{MGP+MI\_A} + CR_S{}^{MI\_XBID}$$

where

Equation 11

$$CR_S{}^{MGP+MI\_A} = \sum_{\forall PF_{t,g}^{MGP+MI\_A}>0 | g \in S} PF_{t,g}^{MGP+MI\_A}$$

Equation 12

$$CR_S{}^{MI\_XBID} = \sum_{\forall PF_{t,g}^{MI\_XBID}>0 | g \in S} PF_{t,g}^{MI\_XBID}$$

2.3.4 Definition of the exposure for the purpose of adequacy checks in the integrated guarantee system in the netting markets

Below is the Market Participant's exposure in the netting markets:

Equation 13

$$E_{t,g}{}^{Netting} = E_{t,g}{}^{MGP+MI} + E_{t,g}{}^{MPGAS}$$

where $E_{t,g}{}^{MPGAS}$ = exposure in the MP-GAS as defined in Technical Rule no. 15 MGAS.

Conversely, the positive components of the netting markets determine the credit position CR which can be used by the Market Participant to offset the exposures referred to the same settlement date S of the Market Participant for the netting markets only for each settlement date. It is equal to:

Equation 14

$$CR_S^{Netting} = CR_S^{MGP+MI} + CR_S^{MPGAS}$$

where CR_S^{MPGAS} = credit position in the MGAS as defined in Technical Rule no. 15 MGAS.

3. Guarantee system in the MPEG

3.1 Definition of adequacy verifications under the guarantee system of the MPEG

3.1.1 Adequacy verifications

Following the submission of bid/offers on the MPEG, which may generate Market Participant's payables[18] towards GME (representing its exposure), GME shall verify the financial adequacy of the bid/offer with respect to the amount of the guarantee allocated for the MPEG. These verifications are done again after trading, on the actual matchings made in the book and that generate net payables, and when the value of exposure is determined again, for example as soon as the average value of the PUN Index GME is known for the applicable imbalance settlement periods included in the daily product type being traded in the MPEG.

The capacity of the guarantee (C) is calculated based on each trading day (trading) and is given by the algebraic sum between the guarantee (G) and the exposure (E).

Equation 15

$$C^{MPEG} = G^{MPEG} + E^{MPEG}$$

[18] Payables are determined based on (1) volumes and (2) prices offered vs. the check price.

The verification on the available amount of the guarantee has a positive result if:

$$CG^{MPEG} \geq 0$$

Specifically, with reference to component G, consideration is given to the share of the guarantee intended for the MPEG (G^{MPEG}), defined in Equation 18 of the following paragraph 3.2. Conversely, with reference to component E, the exposure referring to the trading day t and the flow day g ($E_{t,g}$) and to the credit position related to the settlement period S (CR_S) shall be considered, as defined in paragraph 3.3.4 below, for which the verification is being carried out, also considering the exposure and the credit position related to the settlement periods S±N other than S only if in debit ($P_{S\pm N}$).

Equation 16

$$C^{MPEG} = G^{MPEG} + CR_S{}^{MPEG} + \sum_{t,g\in S} E_{t,g}{}^{MPEG} + \sum_{\forall S\pm N\neq S} P_{S\pm N}$$

where:

Equation 17

$$P_{S\pm N} = se\left[\left(CR_{S\pm N}{}^{MPEG} + \sum_{t,g\in S\pm N} E_{t,g}{}^{MPEG}\right) < 0; CR_{S\pm N}{}^{MPEG} + \sum_{t,g\in S\pm N} E_{t,g}{}^{MPEG}; 0\right]$$

The amount of the guarantees and of the credit position suitable to cover the exposure is identified in light of the principle according to which the adequacy verifications are carried out considering that the trading date t to which the individual $E_{t,g}{}^{MPEG}$ refer to fall within the period of validity of the guarantees and that the flow date g to which the individual $E_{t,g}{}^{MPEG}$ refer to fall within the same settlement period as the credit position.

The guarantee allocation algorithm as part of the adequacy verifications prioritises, for the purpose of covering the individual debt exposures, the resource with the nearest term of validity. Specifically, if during the reference settlement period there are no expiring bank guarantees, the allocation algorithm will first use: 1) net credit positions that are settled in the same period, 2) the bank guarantees subsequent expiry date; then 3) bank guarantees with no expiration date and, finally, 4) non-interest-bearing cash deposits.

In the event of a bank guarantee expiring in the reference settlement period, for individual exposures with a trading date falling on or prior to the expiration date of the bank guarantee, the allocation will follow, instead, the following order: 1) bank guarantee with expiration in the settlement period, 2) accrued net credit positions, 3) any other bank guarantee with expiration date, 4) bank guarantee with no expiration date, and 5) non-interest bearing cash deposits. For exposures with a trading date

falling after the expiration of the bank guarantee, the priority rules specified in the previous paragraph will apply.

In light of the above, a proposal submitted or an ongoing trade is considered adequate if the guarantee is sufficient, i.e. when C≥0.

If this condition is not met, the proposal is not accepted.

3.1.2 Other cases of updating the guarantee capacity

In addition to the aforementioned stages of the contract such as the matching of bids/offers or after the value of the average PUN Index GME relating to the imbalance settlement period and the registration of the related net delivery position on the PCE are known, the capacity of the financial guarantee is also recalculated in as follows:

- at the revocation of a demand bid/supply offer in the order book;

- at the end of each market session;

- when updating the check price[19];

- when changing the VAT code;

- when updating the guarantee amount;

- upon settlement of payments[20].

The position is guaranteed if the guarantee is sufficient; otherwise an adjustment will be carried out as indicated in paragraph 5 below.

3.2 Definition of the guarantee for adequacy verifications

The amount of the guarantees submitted by each Market Participant, in the form of a bank guarantee or non-interest-bearing cash deposit[21], is decreased by an amount defined as maintenance margin (MM) for the purpose of adequacy checks in the MPEG.

[19] See Article 2, paragraph 2.1, aaaaa) of the ME Rules. In the MPEG, two check prices are defined, distinguished by delivery profile - one for buy positions and one for sell positions - representative of market values based on historical prices appropriately adjusted according to prudential criteria.

[20] Payments shall mean those made to fully settle market payables as provided for in Technical Rule no. 08 ME. Therefore, if the Market Participant makes partial payments of the amounts owed, the capacity of the guarantee will not be updated.

[21] The PA participant may only provide a guarantee in the form of a non-interest-bearing deposit.

Since each Market Participant can define the share of its guarantees to be allocated to GME's markets (see note 10), the guarantee allocated for the MPEG will be equal to:

Equation 18

$$G^{MPEG} = \left(\sum_i F_i + \sum_j D_j\right) \times \partial^{MPEG} \times (1 - MM^{MPEG})$$

where:

G^{MPEG} = guarantee allocated for the MPEG;

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

D_j = amount of the j-th deposit posted by the Market Participant;

∂^{MPEG} = share of the guarantee allocated for the MPEG (where $0 \leq \partial^{MPEG} \leq 1$[22]);

MM^{MPEG} = maintenance margin on the MPEG.

The maintenance margin for the share of the total amount of guarantees allocated for the MPEG is 3%.

It is pointed out that for a bank guarantee, in order to be considered eligible to cover an exposure, the period of validity must include the trading date on which the exposure is determined. If the expiry dates of all bank guarantees provided are subsequent to the dates on which the exposures have arisen, such bank guarantees may be considered together and without distinction, along with the non-interest-bearing cash deposit, for the coverage of the total exposure. Otherwise, for each exposure, only the bank guarantees whose validity period includes the date on which the exposure has arisen will be considered. It is understood that each exposure is in turn associated with a specific flow day of a given settlement period.

[22] See note 5

3.3 Definition of the exposure for adequacy verifications in the MPEG

Each bid/offer and each held position generates exposure, for each flow day corresponding to each trading day t, depending on its sign.

To be specific, a purchase[23], or potentially a sale at a negative price, generates exposure equal to 100% of the countervalue given by the algebraic sum of the offered price and the check price, while a sale does not generate exposure; in fact, under certain conditions, it may give rise to offsetting.

In practice, exposure should be considered as part of the set of bids/offers submitted in the book and in addition to the position held on the same flow day, as shown below.

3.3.1 Exposure on proposals

At the proposal stage, the exposure is calculated (to determine the guarantee absorption) by considering the most unfavourable potential matching of the proposals[24] and all other proposals with the same sign present in the order book[25], together with the net position already traded on the same trading day t for the flow date g (see PF_g^+ in Equation 22 and PF_g^- in Equation 23).

If the two possible adverse scenarios resulting from the matching of proposals as part of the net position held[26] gave rise to a credit value, exposure would be zero.

The exposure on proposals entered on any contract i, of type j (base-load or peak-load), is calculated as follows:

Equation 19

$$PF_{t,g}^{MPEG} = \min\left(PF_{t,g}^{+}; PF_{t,g}^{-}; 0\right)$$

where $PF^{MPEG}_{t,g}$ may be the component relative to the net position value resulting from the potential matching of all positive price purchase proposals or negative price sale offers ($PF^{-}_{t,g}$ and $PF^{+}_{t,g}$ respectively), together with the previous net position ($PF^{T}_{t,g}$), on trading day t for the flow day g, where the PUN Index GME is still unknown, as shown in the above description as well as in the following formulas.

[23] Submitted with a positive price.
[24] The bid/offer price is given by the algebraic sum of the bid/offer and of the check price.
[25] Demand bids with an overall positive price and supply offers with an overall negative price.
[26] Thus, it involves a credit.

The previous net position $PF^{T}_{t,g}$, functional to the calculation of exposures at the proposal stage, is given by:

Equation 20

$$PF^{T}_{t,g} = \sum_{j=B,P} \sum_{\forall Q^{j}{}_{t,g,i}<0} \left[Q^{j}{}_{t,g,i} \times \left(P^{j}{}_{t,g,i} + PC^{j-}\right)\right] \times (1 + VAT_i) + \sum_{j=B,P} \sum_{\forall Q^{j}{}_{t,g,i}>0} \left[Q^{j}{}_{t,g,i} \times \left(P^{j}{}_{t,g,i} + PC^{j+}\right)\right] \times (1 + VAT_i) + PF^{T}_{t-n,g}$$

where:

$PF^{T}_{t,g}$ = exposure given by the total value of the past net position matched on the trading day t and referred to the flow day g;

t = trading day;

g = flow day for delivery;

i = i-th contract;

j = type of contract, which can be base-load B and peak-load P;

VAT_i = applicable VAT rate;

$P^{j}{}_{t,g,i}$ = matching price of the j-th product for the i-th contract;

$Q^{j}{}_{t,g,i}$ = amount in MW underlying the i-th contract already traded on the trading day t, referring to the day of delivery g. It is given by the product between the number of hours and the number of contracts. It is characterised by a negative sign for purchases and a positive sign for sales.

PC^{j-} = check price for buy positions;

PC^{j+} = check price for sell positions;

$PF^{T}_{t-n,g}$ = positive component referred to the same flow day g and deriving from a different trading day (t-n other than t), capable of offsetting any debt exposure on the same flow day, as indicated in the following Equation 21.

Equation 21

$$PF^{T}_{t-n,g} = Se \begin{cases} \sum_{j=B,P} \sum_{\forall Q^{j}_{t-n,g,i}<0} \left[Q^{j}{}_{t-n,g,i} \times \left(P^{j}{}_{t-n,g,i} + PC^{j-}\right)\right] \times (1 + VAT_i) + \\ \sum_{j=B,P} \sum_{\forall Q^{j}_{t-n,g,i}>0} \left[Q^{j}{}_{t-n,g,i} \times \left(P^{j}{}_{t-n,g,i} + PC^{j+}\right)\right] \times (1 + VAT_i) > 0; \\ \sum_{j=B,P} \sum_{\forall Q^{j}_{t-n,g,i}<0} \left[Q^{j}{}_{t-n,g,i} \times \left(P^{j}{}_{t-n,g,i} + PC^{j-}\right)\right] \times (1 + VAT_i) + \\ \sum_{j=B,P} \sum_{\forall Q^{j}_{t-n,g,i}>0} \left[Q^{j}{}_{t-n,g,i} \times \left(P^{j}{}_{t-n,g,i} + PC^{j+}\right)\right] \times (1 + VAT_i); \\ 0 \end{cases}$$

The component $PF^{+}_{t,g}$ is given by:

Equation 22

$$\forall QP^{j}{}_{t,g,i} > 0 \left| \left(P^{j}{}_{t,g,i} + PC^{j+}\right) < 0 \right.$$

$$PF^{+}_{t,g} = PF^{T}_{t,g} + \sum_{j=B,P} \sum_{i} QP^{j}{}_{t,g,i} \times \left(P^{j}{}_{t,g,i} + PC^{j+}\right) \times (1 + VAT_i)$$

where:

$PF^{+}{}_{t,g}$= exposure given by the total countervalue of the previous net position (same trading day) and all proposals for sale of any type of contract submitted on the trading day t and on the flow day g at a negative price;

$P^{j}{}_{t,g,i}$= price of the i-th offer on the product j;

$QP^{j}{}_{t,g,i}$= amount in MW covered by the proposal (on the trading day t) for the i-th contract referred to the delivery day g, given by the product between the number of hours and the number of contracts; it is characterised by a negative sign for purchases and a positive sign for sales.

The component $PF^{-}_{t,g}$ is given by:

Equation 23

$$\forall QP^{j}{}_{t,g,i} < 0 \left| \left(P^{j}{}_{t,g,i} + PC^{j-}\right) > 0 \right.$$

$$PF^{-}_{t,g} = PF^{T}_{t,g} + \sum_{j=B,P} \sum_{i} QP^{j}{}_{t,g,i} \times \left(P^{j}{}_{t,g,i} + PC^{j-}\right) \times (1 + VAT_i)$$

where:

$PF^{-}_{t,g}$= exposure given by the total countervalue of the previous net position (same trading day) and all previous proposals for purchases, with a positive price, submitted on the trading day t, of any type of contract on the flow day g.

If the proposal is confirmed and matched in the book, the exposure, and thus the capacity of the guarantee, are updated as soon as the exact calculation of the PUN Index GME takes place, which will replace the value of the check price as shown in para. 3.3.3.

3.3.2 Exposure on the traded position, with unknown PUN Index GME

With reference to each trading day t and each flow day with unknown PUN Index GME, each held position generates guarantee absorption according to the 100% of the net debt position value, valued at the bid/offer product price matched by the check price for the day g, according to the calculation presented in the following equation:

Equation 24

$$PF_{t,g}^{MPEG} = Se\left\{\begin{array}{c}\sum_{j=B,P}\sum_{\forall Q^j{}_{t,g,i}<0}\left[Q^j{}_{t,g,i}\times\left(P^j{}_{t,g,i}+PC^{j-}\right)\right]\times(1+VAT_i)+\\ \sum_{j=B,P}\sum_{\forall Q^j{}_{t,g,i}>0}\left[Q^j{}_{t,g,i}\times\left(P^j{}_{t,g,i}+PC^{j+}\right)\right]\times(1+VAT_i)+PF_{t-n,g}^{T}<0\ ;\\ \sum_{j=B,P}\sum_{\forall Q^j{}_{t,g,i}<0}\left[Q^j{}_{t,g,i}\times\left(P^j{}_{t,g,i}+PC^{j-}\right)\right]\times(1+VAT_i)+\\ \sum_{j=B,P}\sum_{\forall Q^j{}_{t,g,i}>0}\left[Q^j{}_{t,g,i}\times\left(P^j{}_{t,g,i}+PC^{j+}\right)\right]\times(1+VAT_i)+PF_{t-n,g}^{T};\\ 0\end{array}\right.$$

The above component represents the debt exposure if the net position determines a net purchase value; otherwise it represents zero exposure if the net position determines a net sale value.

Obviously, this formula does not affect the day t,g if on the same period there is a proposed amount QP for which the calculations referred to in paragraph 3.3.1 above are already determined.

3.3.3 Exposure on the position with known PUN Index GME

With reference to each trading day and flow day, each held position with known PUN Index GME[27] for flow day g being delivered, and subject to settlement at the date of settlement S, shall determine the updating of the component PF, in order to consider the entire value of the net debt and credit position, valued at the matched price, increased by the PUN Index GME of the day g.

Equation 25

$\forall Q_{t,g,i}$

$$PF_{t,g}^{MPEG} = \sum_i Q^j{}_{t,g,i}\times\left(P^j{}_{t,g,i}+PUN\ Index\ GME^j{}_g\right)\times(1+VAT_i)$$

[27] The daily PUN Index GME is known at the end of the MGP session of day G-1 (where G is the flow day). Therefore, during the trading period prior to the closing of the MGP session, the check price will be used in the exposure calculation. At the end of the MGP session, the exposure must be updated considering the actual value of the PUN Index GME.

where

PUN Index GME^{j}_{g} = value of the PUN Index GME known at the closure of the MGP.

In conclusion, it should be noted that, for each trading day matched with a flow day, the net buy positions determine guarantee absorption, while the net sell positions determine the possibility to offset the debt exposures that have the same settlement date (paragraph 3.3.4).

3.3.4 Exposure and credit position in the MPEG

The Market Participant's exposure on the MPEG platform is equal to:

Equation 26

$$E_{t,g}{}^{MPEG} = se\left(PF_{t,g}^{MPEG} < 0;\ PF_{t,g}^{MPEG}; 0\right)$$

Conversely, the positive components $PF_{t,g}^{MPEG}$ determine the credit position CR which can be used by the Market Participant to offset the MPEG exposures referred to the same settlement date S of the Market Participant, within the framework of adequacy verifications, carried out as indicated in paragraph 3.1.

It is equal to:

Equation 27

$$CR_S{}^{MPEG} = \sum_{\forall PF_{t,g}^{MPEG}>0 | g \in S} PF_{t,g}^{MPEG}$$

3.3.5 Parameters

For the purposes of financial adequacy verifications in the MPEG, GME for each flow day g defines a check price PC_g, suitable to estimate the PUN Index GME expected for the day g for base-load products and a check price PC_g, suitable to estimate the PUN Index GME expected for the day g for peak-load products.

These parameters are also differentiated depending on whether buy positions (PC_g^-) or sell positions (PC_g^+) are to be valued.

They are identified according to a quantitative model based on a historical simulation approach developed in house and are disclosed via publication on the platform.

4. Guarantee system in the MTE

4.1. Definition of adequacy verifications under the MTE guarantee system

4.1.1 Adequacy verifications

Within the guarantee system of the MTE, upon submission of bids/offers into the MTE, upon matching of bids/offers, and upon registration of the relevant net delivery position on the PCE, GME shall verify the financial adequacy of the capacity of the Market Participant's guarantee with respect to its exposure, taking into account the amount due for payment (settlement)

The capacity of the guarantee C is given by the algebraic sum between the guarantee G[28], calculated as described in paragraph 4.2 below, and the exposure E[29], calculated on the basis of the indications of paragraph 4.3

Equation 28

$$C^{MTE} = G^{MTE} + E^{MTE}$$

A proposal submitted, a matched bid/offer, or a registration on the PCE are considered adequate if the guarantee is sufficient, i.e. when C≥0.

If such condition is not satisfied, the proposal or the request for registration is not accepted, i.e. as the current position is no longer covered by the guarantee, it generates a condition of default by the Market Participant unless it adjusts the guarantees as provided for in paragraph 5 below.

4.1.2. Other cases of updating of the available amount of the guarantee

In addition to the aforementioned stages of the contract (proposals and matching of bids/offers, as well as registration of the related net delivery position on the PCE), the capacity of the financial guarantee is also recalculated in the following cases:

[28] It may have a positive or zero value.
[29] It may have a negative or zero value.

- revocation of a demand bid/supply offer in the order book;

- at the end of each market session;

- update of the check price[30];

- update of the parameter α;

- change of the VAT code;

- update of the guarantee amount;

- settlement of payments[31].

The position is guaranteed if the guarantee is sufficient; otherwise an adjustment is required as indicated in paragraph 5 below.

4.2. Definition of the guarantee for adequacy verifications

The amount of the guarantees provided by each Market Participant, in the form of a bank guarantee without expiration or non-interest bearing cash deposit[32], is reduced by an amount defined as maintenance margin (MM).

Since each Market Participant can define the share of its guarantees to be allocated among GME's markets[33], the guarantee intended for the MTE will be equal to:

Equation 29

$$G^{MTE} = \left(\sum_i F_i + \sum_j D_j\right) \times \partial^{MTE} \times (1 - MM^{MTE})$$

where

G^{MTE} = guarantee allocated for the MTE;

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

[30] See Article 2, paragraph 2.1, ccccc) of ME Rules.
[31] Payments are defined as payments made to fully settle market payables in accordance with Technical Rule no. 08 ME. Therefore, if the Market Participant makes partial payments of the amounts owed, the available amount of the guarantee will not be updated.
[32] The PA participant may only post a guarantee in the form of a non-interest-bearing cash deposit.
[33] See note 5.

D_j = amount of the j-th deposit posted by the Market Participant;

∂^{MTE} guarantee share allocated for the MTE (where 0 ≤ δ^{MTE} ≤ 1[34]);

MM^{MTE} = maintenance margin in the MTE

The maintenance margin for the share of the total amount of guarantees allocated for the MTE is equal to 10% of the total amount of guarantees, determined by 3% to cover the penalty and default interest for late payment and by 7 % to cover the risk arising from the partial coverage of economic items traded on the MTE.

Please note that in order to be considered suitable for covering an exposure, the period of validity of the bank guarantee must include the trading date on which the exposure arises. The bank guarantees can be considered cumulatively and without distinction, together with the non-interest-bearing cash deposit to cover the total exposure, within the limits of the allocation made. Each exposure is in turn associated with a specific flow day falling in a specific settlement period.

4.3. Definition of the exposure for adequacy verifications under the guarantee system of the MTE

4.3.1 Exposure on proposals

The best proposal for each type of contract referred to the month m generates exposure based on the mark-to-market, i.e. the differential between the offer price and the check price, calculated for both sell and buy positions (exposure EP).

Specifically, for the purposes of calculating the exposure on proposals on the MTE book[35], consideration is given, for each type of contract listed in the MTE, to the best bid/offer submitted by the Market Participant, i.e. a demand bid and supply offer with the highest price priority, and for such bid/offer, consideration is given to the amount referred to the month m equal to:

$QP^{BL}_{m,i} = n_i * \not{P}^{BL}_m$ and $QP^{PL}_{m,j} = n_j * \not{P}^{PL}_m$

where:

[34] See note 9.

[35] If a bid/offer is submitted without a price indication, the offer price is considered to be equal to that of the best proposal of opposite sign in the book until the bid/offer is exhausted.
If the best bid/offer is subject to matching, GME will verify whether the bid/offer in the book (which in the meantime has become the bid/offer with the highest price priority) is adequate with respect to the guarantee. If this verification is unsuccessful, the proposal verified to be inadequate will be cancelled from the order book, and GME will proceed with the verification of the following proposal.

$QP_{m,i}^{BL}$ = amount of the best proposal for the i-th base-load contract and referred to the month m;

$QP_{m,j}^{PL}$ = amount of the best proposal for the j-th peak-load contract and referred to the month m;

n = number of contracts covered by the proposal;

h_m^{BL} = number of hours in the month m related to the base-load profile;

h_m^{PL} = number of hours in the month m related to the peak-load profile.

For the purposes of this document, please consider that:

n <0 for demand bids;

n > 0 for supply offers.

For the base-load and peak-load profile, consider the exposure resulting from each of the best proposals referring to the different types of contracts present in the book and referred to the month m, equal to:

Equation 30

$$EP_{m,i}^{BL} = Se\left[QP_{m,i}^{BL} * (P_i^{BL} * (1+VAT) - PC_m^{BL} * (1+VAT)) \geq 0; 0; QP_{m,i}^{BL} * (P_i^{BL} * (1+VAT) - PC_m^{BL} * (1+VAT))\right]$$

$$EP_{m,j}^{PL} = Se\left[QP_{m,j}^{PL} * \left(P_j^{PL} * (1+VAT) - PC_m^{PL} * (1+VAT)\right) \geq 0; 0; QP_{m,j}^{PL} * \left(P_j^{PL} * (1+VAT) - PC_m^{PL} * (1+VAT)\right)\right]$$

where:

$EP_{m,i}^{BL}$ = exposure on the best proposals for each type of i-th base-load contract present in the book and referred to month m;

$EP_{m,j}^{PL}$ = exposure on the best proposals for each type of j-th peak-load contract present in the book and referred to month m;

$P_{i/,j}$ = submission price of the proposal;

VAT = VAT rate applicable to the Market Participant on transactions of the same sign with respect to the contract i/j when referred to the price $P_{i/j}$ or VAT rate applicable to the Market Participant on transactions of opposite sign with respect to the contract i when referred to the price PC_m.

The overall exposure EP_{MTE} on the best bid/offers in the book is therefore equal to:

Equation 31

$$EP^{MTE} = \sum_m \sum_i EP^{BL}_{m,i} + \sum_m \sum_j EP^{PL}_{m,j}$$

4.3.2 Exposure on the net position traded but not delivered

For the purposes of calculating the exposure on the monthly net position in the periods still in trading, calculate the net position of each month, separately for contracts with a base-load and a peak-load profile, equal to the sum of the volumes covered by the contracts that include the month in the period of delivery:

$PN^{BL}_m = \sum_i Q^{BL}_{m,i}$ $PN^{BL}_m = \sum_i Q^{BL}_{m,i}$ $PN^{BL}_m = \sum_i Q^{BL}_{m,i}$ and $PN^{PL}_m = \sum_j Q^{PL}_{m,j}$

where:

PN_m^{BL} = net position of month m related to base-load contracts;

PN_m^{PL} = net position of the month m related to peak-load contracts.

Please consider the future exposure on the net base-load and peak-load positions of each month still in trading equal to:

Equation 32

$$EF^{BL}_m = PN^{BL}_m * \alpha^{BL} * PC^{BL}_m * (1 + VAT)$$

$$EF^{PL}_m = PN^{PL}_m * \alpha^{PL} * PC^{PL}_m * (1 + VAT)$$

where:

EF_m^{BL} = future exposure of the net base-load position of the month m;

EF_m^{PL} = future exposure of the net peak-load position of the month m;

α_{BL} = parameter α related to base-load contracts;

α_{PL} = parameter α related to peak-load contracts;

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

The future exposure of each month is equal to:

Equation 33

$$EF_m = se\{(EF_m^{BL} * EF_m^{PL}) \geq 0; (EF_m^{BL} + EF_m^{PL}); se[(|EF_m^{BL}| \geq |EF_m^{PL}|); EF_m^{BL} + EF_m^{PL} * \beta; EF_m^{BL} * \beta + EF_m^{PL}]\}$$

where:

EF_m = future exposure of the month m;

β = discount factor, between 0 and 1.

The overall future exposure EF^{MTE} of months not yet delivered is equal to:

Equation 34

$$EF^{MTE} = Max\left[\left(\forall EF_m > 0, \sum_m EF_m\right); \left(\forall EF_m < 0, \sum_m |EF_m|\right)\right] - Min\left[\left(\forall EF_m > 0, \sum_m EF_m\right); \left(\forall EF_m < 0, \sum_m |EF_m|\right)\right] * \gamma$$

where:

γ = offsetting factor, between 0 and 1.

Furthermore, consider the adjustment of the exposure on contracts traded in the MTE, limited to the periods that have not yet been delivered, at the market value (mark-to-market), which is equal to:

Equation 35

$$EC^{MTE} = \sum_m \sum_i QC_{m,i}^{BL} * \left(P_i^{BL} * (1+iva) - PC_m^{BL} * (1+iva)\right) + \sum_m \sum_j QC_{m,j}^{PL} * \left(P_j^{PL} * (1+iva) - PC_m^{PL} * (1+iva)\right)$$

where:

EC^{MTE} = exposure on contracts;

PC_m^{BL} = check price of the base-load profile of the delivery month m;

PC_m^{PL} = check price of the peak-load profile of the delivery month m;

IVA = VAT rate applicable to the Market Participant on transactions of the same sign with respect to the contract i/j when referred to the price $P_{i/j}$ or VAT rate applicable to the Market Participant on transactions of opposite sign with respect to the contract I when referred to the price PC_m.

4.3.3 Exposure on the position traded and delivered

Exposures are generated by any debts for net buy positions relating to the months already delivered, but for which payments have not yet been settled. The net sell positions delivered do not generate exposure, determining instead a credit capable of offsetting any other debt exposures to be settled on the same settlement date.

Similarly, upon registration of the net delivery buy position on the MTE, GME shall verify whether the capacity of the guarantee allocated for the MTE is not lower than the value of this position[36], increased by VAT, where chargeable.

In order to determine these debit/credit components in the MTE, consider, for each type of contract (base-load/peak-load) traded in the MTE, the amount covered by the contract, or the transaction, and referring to the month m, equal to:

$QC_{m,i}^{BL} = n_i * \not{h}_m^{BL}$ and $QC_{m,j}^{PL} = n_j * \not{h}_m^{PL} Q$

where:

$QC_{m,i}^{BL}$ = quantity (MW) of the i-th base-load contract / transaction and referred to month m;
$QC_{m,j}^{PL}$ = quantity (MW) of the i-th peak-load contract / transaction and referred to month m;
$n_{i/j}$ = number of contracts covered by the contract / transaction;
h_m^{BL} = number of hours in the month m related to the base-load profile;
h_m^{PL} = number of hours in the month m related to the peak-load profile;
For the purpose of this document, please consider:
n < 0 for purchase contracts/transactions;
n > 0 for sale contracts/transactions.

Please consider the financial position of each month already delivered[37], but not yet settled:

Equation 36

$$PF_m^{MTE} = \sum_i P_i * (1 + VAT) * QC_{m,i}^{BL} + \sum_j P_j * (1 + VAT) * QC_{m,j}^{PL}$$

where:

[36] The value is equal to the product between the amount being delivered and the corresponding average purchase price.
[37] On the MTE, months already delivered shall mean the months for which the related delivery position has already been registered on the PCE.

PF_m^{MTE} = financial position in the MTE related to month m;

$P_{i,j}$ = trading price of the i-th base-load and j-th peak-load contract concluded in the MTE;

VAT = VAT rate applied to the transaction.

For the purposes of the adequacy verifications on the MTE, the overall financial position of past months for which settlement has not yet been made is therefore equal to:

Equation 37

$$PF^{MTE} = \sum_{m} PF_m^{MTE}$$

with:

PF^{MTE} = financial position for the MTE.

4.3.4 Exposure in the MTE

In order to determine, the overall exposure based on the amount due at the settlement[38], individual exposures, determined as shown in paragraphs 4.3.1, 4.3.2, and 4.3.3 above, shall be aggregated, as shown below.

Equation 38

$$E_S^{MTE} = \sum_{m \in S} EP_m - \sum_{m \in S} EF_m + \sum_{m \in S} PF_m + \sum_{m \in S} EC_m + ACC_S$$

where

m = delivery month;

ACCs = amount of any adjustments due to, by way of example but not of limitation, extraordinary operations, tax rate changes.

The overall exposure in the MTE is given by:

[38] According to the calendar made known annually.

Equation 39

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

4.3.5 Parameters

For the purposes of the adequacy verifications in the MTE, GME shall define a check price for each contract traded in the MTE, which is calculated daily, based on bids/offers submitted and/or concluded on the MTE. GME may determine the MTE check price also based on procedures that require the involvement of Market Participants.

In addition, to calculate the Market Participant's exposure, GME will define the parameters α, β, and γ. They have been determined by examining the time series of the PUN Index GME and the prices of futures contracts with underlying electricity traded in regulated markets in Europe.
The parameter α is determined on the basis of the volatility of the observed prices; it is differentiated on the basis of the profile, base-load (αBL) and peak-load (αPL) and on the basis of the month covered by the traded contract.
The parameter β is determined based on the correlation between the observed prices of base-load and peak-load contracts.
The parameter γ is determined based on the correlation of prices between different delivery periods.

The values of the parameters α, taken into consideration for the purpose of verifying the capacity of the guarantee, decrease with the increase of the time interval elapsing between the day on which the available amount of the guarantees is calculated and the delivery of the calendar month to which such parameter α refers. These values are shown in Table 1 below (where *m* identifies the month in which the available amount of the guarantees is verified):

Table 1: parameters α

	m+1	m+2	m+3	m+4	m+5	m+6	m+7	m+8	m+9	m+10	m+11	m+12	m+13	m+14	m+15	m+16	m+17	m+18	m+19	m+20	m+21	m+22	m+23	m+24
α BL	25%	20%	15%	12%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
α PL	30%	25%	20%	17%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%

After defining these monthly values, the parameters α applied to each tradable contract (month, quarter and year) are calculated as the weighted average on the hours of the parameters α of the months included in the same contracts[39].

[39] The parameter α of the monthly contract is equal to the parameter α of the calendar month to which the contract relates.

The values of the parameters β and γ, taken into consideration for the purpose of verifying the available amount of the guarantee, are as follows:

β = 70%

γ = 70%

5. Adjustment of the available amount of the guarantee

If the guarantee is not sufficient compared to the updated exposure, GME will send an e-mail request for adjustment to the Market Participant, specifying the minimum amount to be adjusted.

By 10:30 a.m. of the 3rd. working day after receipt of the request, the Market Participant must:

- send to the treasury institute, with the beneficiary value date on the same day, via SEPA Urgent/Priority Credit Transfer or equivalent - from the bank account whose details have been previously communicated to GME pursuant to Article 17, paragraph 17.2 of the ME Rules, according to the modalities identified in the Technical Rules 08 ME - the transfer of the amount suitable to guarantee its own exposure as cash deposit, or
- send a further bank guarantee (or adjust the guarantee already provided) with an amount suitable to guarantee its own exposure[40] .

Pending the adjustment of the guaranteed amount, the Market Participant:

• with reference to the electricity market:

- may only conclude transactions in the MGP, MI and MPEG that generate receivables for the Market Participant;
- may not conclude transactions in the MTE;

• with reference to the gas market: the provisions of Technical Rule no. 15 MGAS will apply.

If the Market Participant fails to adjust within the above-mentioned time limits, GME will initiate the default procedure referred to in Article 110 of the ME Rules.

[40] This possibility is not granted to PA Participants, as they may only post guarantee in the form of a non-interest-bearing cash deposit.