



Guarantee Manual

HETS Grid Code

Version 2.0
February 2022

Table of Contents

1. General	2
2. Calculation of the amount of guarantees due.....	2
2.1. Annual guarantee calculation.....	2
2.2. Monthly guarantee calculation.....	3
3. Minimum guarantee	4
3.1. Minimum Guarantee amounts.....	4
3.2. Guarantees for new registrants in the HETS Operator Registry	4
4. Non-Compliance Charges.....	4
5. Examples of how to calculate guarantees	5
5.1. Example 1: Annual guarantee calculation	5
5.2. Example 2: Monthly guarantee calculation	5
5.3. Example 3: Non-Compliance Charges	6
6. Guarantees for the Participant subject to Deletion.....	6
7. Special Guarantees	7
7.1. Methodology for the Calculation of Special Guarantees.....	7
8. Example of calculation of special guarantee	9

1. General

In accordance with the provisions of subsection 11.3 of the Hellenic Electricity Transmission System Grid Code (HETS Grid Code), any participant registered with the HETS Operator Registry, whilst the HETS Operator Transactions Contract is in force, must provide full guarantees for the fulfillment of all its obligations arising from the said Contract.

The Guarantee Validity Period shall be defined as the time period from 1st October of year N up to and including September 30th of year N+1, “October N – September N+1”.

Each registered participant of the HETS Operator Registry must provide guarantees by September 30th of year N for the guarantee period “October N – September N+1”. The guarantees should enter into force no later than October 1st of year N.

The obligation to provide guarantees is fulfilled, in accordance with subsection 11.3 of the HETS Grid Code, either by submitting a letter of guarantee or by depositing an amount in a special account held by the HETS Operator.

2. Calculation of the amount of guarantees due

The amount of outstanding guarantees for all obligations of the participants registered with the HETS Operator Registry in the framework of the HETS Operator Transactions Contract shall be calculated on both an annual and a monthly basis, as described below.

2.1. Annual guarantee calculation

The System Operator shall calculate the amount of the guarantees due for all the participants registered with the HETS Operator Registry during each calendar year N. In particular, by September 10th of year N, the calculations shall be completed and the persons responsible shall be informed of the amount of the requisite guarantees for the Guarantee Validity Period “October N - September N+1”.

For the purpose of calculating the amount of the guarantee, historical data available on the relevant settlements of the following accounts (Λ) shall be used:

- Λ -A: Inter-TSO Compensation Mechanism (ITC) between TSOs for the cost of Losses due to hosting cross-border flows of electricity;
- Λ -B: Account for revenues from Emergency Imports of Surplus Energy;
- Λ -Γ: Non-Balancing Ancillary services and other services;
- Λ -Δ: Transmission Use of System Charges, and
- Λ -ΣT: Uplift Accounts.

In the event that additional settlement accounts arise, such as indicatively, the application of the Interruptible Load Service, the Transitory Flexibility Remuneration Mechanism or the Long-term Capacity Mechanism, the calculation of the amount of the guarantee shall include these accounts, unless specific provisions expressly stipulate otherwise.

For each Guarantee Validity Period for ‘October N - September N+1’, credit and debit data from the settlement procedures of the above accounts shall be used for the period from July 1st of year N-1 up to and including June 30th of year N.

The procedure for determining the amount of the requisite guarantees shall include the following steps for each participant (Σ) registered with the HETS Operator Registry:

- determination of the Maximum Monthly Charge, and
- determination of the amount of the guarantee.

In particular, the Maximum Monthly Charge $MMX_{\Sigma,\Lambda}$ is calculated as the maximum value between the sum of the monthly debits and credits calculated in the context of the settlements pertaining to all accounts (Λ) mentioned above, for the participant registered with the HETS Operator Registry (Σ), during the aforementioned period (“July 1st N-1 – June 30th N”).

The amount of the requisite guarantees ($E\Gamma\Gamma_{\Sigma}$) for each participant (Σ) registered with the HETS Operator Registry shall be calculated as follows:

$$E\Gamma\Gamma_{\Sigma} = MMX_{\Sigma} = \max \left\{ \begin{array}{l} [\sum_{\Lambda} (MX_{\Sigma,\Lambda})]_{m1} \\ \dots \\ [\sum_{\Lambda} (MX_{\Sigma,\Lambda})]_{m12} \end{array} \right\}$$

Where:

- MMX_{Σ} : The Maximum Monthly Charge for the participant (Σ) registered with the HETS Operator Registry, for all its accounts;
- $MX_{\Sigma,\Lambda}$: the Monthly Charge for the participant (Σ) registered with the HETS Operator Registry in respect of account Λ , and
- $m_{1..12}$: each month of the period July 1st N-1 – June 30th N.

If the amount of the requisite guarantee $E\Gamma\Gamma_{\Sigma}$ as calculated above is less than the amount of the minimum guarantee in Section 3.1, then the amount of the requisite guarantee $E\Gamma\Gamma_{\Sigma}$ shall be defined as equal to the amount of the minimum guarantee.

For new registrants to the HETS Operator Registry for whom the sum of the Maximum Monthly Charges per account cannot be calculated, Section 3.2 shall apply.

2.2. Monthly guarantee calculation

Following the completion of settlement procedure for month M, which takes place at the timeline described in subsection 11.5 of the HETS Grid Code, the HETS Operator shall recalculate the amount of the guarantees for each participant (Σ) registered with the HETS Operator Registry. The amount of the new requisite guarantee ($E\Gamma\Gamma_{\Sigma,M}$) calculated for each participant (Σ) registered with the HETS Operator Registry shall be calculated as follows:

$$E\Gamma\Gamma_{\Sigma,M} = \sum_{\Lambda} (X_{\Sigma,\Lambda})$$

Where:

- $X_{\Sigma,\Lambda}$, the monthly debits and credits for the participant (Σ) registered with the HETS Operator Registry, as regards account Λ as shown in month M+2 from the results of the settlement of month M.

If the amount of the requisite guarantee based on the monthly calculation of $E\Gamma\Gamma_{\Sigma,M}$, for the month M exceeds the amount of the deposited guarantee by at least 20%, the System Operator shall invite

the participant registered with the HETS Operator Registry to provide additional guarantees within ten (10) days from their notification by letter or email.

The above tolerance percentage for the change in the guarantees may be adjusted by a decision of RAE following a recommendation by the HETS Operator.

It should be noted that during the month of September, when the annual guarantees are calculated, monthly guarantee checks are not carried out.

3. Minimum guarantee

All participants registered with the HETS Operator Registry shall have submitted a guarantee for at least the amount of Minimum Guarantee, as set out below.

3.1. Minimum Guarantee amounts

The participants registered with the HETS Operator Registry, in order to have a Transaction Contract in force with HETS Operator, shall be obliged to have a deposit equal to or greater than the minimum Guarantee amount. The parties registered with the HETS Operator Registry for which the amount calculated under Section 2 is greater than the Minimum Guarantee amount shall be required to provide the amount resulting from these calculations.

The minimum Guarantee Amount for Suppliers and Self-Supplied Customers is set at € 20,000. The minimum Guarantee amount for Traders is set at €10,000, and no minimum Guarantee amount is set for producers, RES Aggregators and Demand Response Aggregators.

The above minimum Guarantee amounts may be adjusted by a decision of RAE following a recommendation by the HETS Operator.

3.2. Guarantees for new registrants in the HETS Operator Registry

The registration of a new participant in the HETS Operator Registry requires the provision of guarantees to cover all of its obligations in the framework of the HETS Operator Transactions Contract.

The amount of the guarantee that a company requesting its registration with the HETS Operator Registry must deposit as a Trader shall be equal to the minimum Guarantee amount for Traders.

The amount of the guarantee that a company requesting its registration with the HETS Operator Registry must deposit as a Supplier or Self-Supplied customer shall be equal to the minimum Guarantee amount for Suppliers.

4. Non-Compliance Charges

In the event that the participant registered with the HETS Operator Registry does not provide the requisite guarantee in due time, in line with the timeline described in Section 2, the HETS Operator shall impose a charge C_{ERT} of one per thousand (1 ‰) of the remaining amount for each day of delay with a minimum payment of € 1.000 per day, i.e.:

$$C_{E\Gamma\Gamma} = \sum_{d=1}^n \max\left(\frac{Y\Pi_d}{1000}, 1000\right)$$

where:

$Y\Pi_d$: the amount not paid in time and relating to day d,

n : the number of days of delay in submitting the requisite guarantee.

5. Examples of how to calculate guarantees

5.1. Example 1: Annual guarantee calculation

Supposing that the HETS Operator wants to calculate the guarantee for Participant A for the guarantee period October 2021-September 2022. For this purpose, debit and credit data from the settlement of the participant's accounts related to the period from July 1st, 2020 to June 30th, 2021 inclusive shall be used, as presented in the following table.

Total monthly transactions of participant A	
Jul-20	687.801
Aug-20	556.887
Sep-20	557.260
Oct-20	644.620
Nov-20	692.868
Dec-20	654.313
Jan-21	629.674
Feb-21	669.566
Mar-21	672.286
Apr-21	773.729
May-21	596.570
Jun-21	723.508
<i>MMX_{A,A}</i>	773.729

The amount of the requisite guarantee of participant A has been calculated as set forth in section 2.1 and equals

$$E\Gamma\Gamma_A^{E.\Pi.} = 773.729 \text{ €}$$

5.2. Example 2: Monthly guarantee calculation

The monthly check for the same participant is presented below, in order to determine whether the guarantee paid covers the amount of its subsequent transactions. Following the calculations in section 2.2 the total transactions resulting from the settlement of accounts Λ-A, Λ-Γ, Λ-Δ & Λ-ΣT of participant A, relating to the months of July and August 2021 are presented in the following table.

Month	Settlement Amount (€)	New guarantee Calculation	Difference (%) compared to existing guarantee
Jul-21	754.464	754.464	-2%
Aug-21	936.795	936.795	21%

According to the results of the table, no additional guarantee is required for the month of July 2021, as the amount of transactions is covered by the existing guarantee provided by participant A as shown in Example 1. On the other hand, transactions in August 2021 are not covered by the amount of the guarantee paid. As the increase in the requisite guarantee is 21% compared to the existing one, which exceeds the tolerance limit in accordance with section 2.2, the participant should provide an additional guarantee equal to:

$$E\Gamma_{A,\sigma\nu\mu\pi} = 936.795 - 773.729 = 163.066 \text{ €}$$

5.3. Example 3: Non-Compliance Charges

Supposing that participant A must submit the supplementary guarantee calculated in example 2 within 10 days of being notified, $\gamma\pi = 163.066 \text{ €}$, and that the participant pays the amount of € 100,000 with a two-day delay and the remainder with a 5-day delay. As set out in Section 4, the HETS Operator shall calculate the charge as follows:

$$C_{E\Gamma\Gamma} = \frac{100.000}{1.000} \times 2 + \frac{63.066}{1.000} \times 5 = 515,33 \text{ €}.$$

The minimum daily charge is then checked.

The participant will incur a charge for the delay of at least $5 \times 1.000 = 5.000 \text{ €}$.

Therefore, since $515,33 \text{ €} < 5.000 \text{ €}$, the final non-compliance charge is equal to $C_{E\Gamma\Gamma} = 5.000 \text{ €}$.

6. Guarantees for the Participant subject to Deletion

In case a Participant is placed under the “Participant subject to Deletion” status during the last 2 months of the Guarantee Validity Period, because it is settled and invoiced during month M+2, i.e. beyond the Validity Period, it is obliged to present a guarantee, which covers the period from the time it was placed under the “Participant subject to Deletion” status until repayment of the liabilities arising from the settlement of the transactions in Account Λ , which relate to the last 2 months of the Guarantee Validity Period.

The amount of the guarantee in this case is determined by the Maximum Monthly Charge $MMX_{\Sigma,\Lambda,3}$ which is calculated as the maximum price between the sums of the monthly charges and credits calculated in the context of the settlements concerning all accounts Λ of the HETS Grid Code for the last quarter with available settlement results concerning each account Λ .

7. Special Guarantees

Pursuant to the provisions of subsection 1.5 par. 3 of the HETS Grid Code, a necessary condition for a registered Participant with the HETS Operator Registry to be placed, at its request, under the “Participant subject to Deletion” status, is to submit special guarantees to the HETS Operator, pursuant to subsection 11.3 of the HETS Grid Code.

These guarantees cover the obligations of the Participant who will be placed under the “Participant subject to Deletion” status that result from settlements according to the HETS Grid Code and relate to the period of its active participation before 1 November 2020. The minimum period of validity of the special guarantees is two (2) years from the time when the Participant was placed under the “Participant subject to Deletion” status. The Participant who will be placed under the “Participant subject to Deletion” status must extend the validity of the relevant guarantees, at the request of the HETS Operator, until the full payment of all liabilities arising from these settlements, in accordance with the HETS Grid Code.

The minimum amount of special guarantee is set at five thousand euros (€5.000).

The Operator may gradually reduce the amount of the guarantees, provided that the Participant who will be placed under the “Participant subject to Deletion” status pays its liabilities due on time. In any case the amount of the guarantee may not be less than the amount resulting in accordance with paragraph 7.1. hereof for the remaining period.

7.1. Methodology for the Calculation of Special Guarantees

For the calculation of special guarantees, historical data of Periodic Settlement of Network Suppliers for the last years of all Participants and Participants subject to Deletion, who carry the same role as the Participant that is about to be placed under the “Participant subject to Deletion” status, are used.

Specifically, the following data are used for the calculation:

- Results of IPTO Imbalance Settlement, which was carried out during month M+1 by the HETS Operator, regarding the Medium and Low Voltage respectively (based on initial Medium Voltage measurements, as well as pre-estimated percentages of representation of the Low Voltage Customers, according to the Distribution Network Operator) hereinafter referred to as “Zero Settlement”.
- Results of the Final Settlement which is carried out by the HETS Operator and takes place after sending the final corrections of Medium and Low Voltage consumption by the Distribution Network Operator, hereinafter referred to as “Final Settlement”.
- Medium and Low Voltage Safety Ratio, respectively, which is calculated according to the methodology described below:

The following formula applies:

$$EIA_EFF_{\Sigma,period} = \sum_{\forall semester \in period} [(\Sigma A_{MT} \times \Sigma X_{MT,\Sigma,semester}) + (\Sigma A_{XT} \times \Sigma X_{XT,\Sigma,semester})]$$

$EIA_EFT_{\Sigma,period}$: The special guarantee that must be provided by the Participant who will be placed under the “Participant subject to Deletion Σ ” status, for the period before 1 November 2020, during which it actively participated in the Electricity Markets and for which corrective settlements are still pending due to corrections in the Medium and Low Voltage consumption by the Distribution Network Operator.

$\Sigma A_{MT,\Sigma}$: The percentage change between the Final Settlement, carried out by the HETS Operator, after the sending of the final Medium Voltage (MV) consumption corrections by the Distribution Network Operator, and the Zero Settlement, performed by the HETS Operator, for the last available semester in which Final Settlement results have been sent. This percentage is calculated for each Participant or Participant subject to Deletion Σ who is registered with the HETS Operator Registry and is represented in the Medium Voltage (MV) during the last available semester.

ΣA_{MT} : Medium Voltage (MV) Safety Ratio which is calculated as the average of the three largest change rates calculated among all Participants or Participants subject to Deletion Σ registered with the HETS Operator Registry and are represented in the Medium Voltage (MV) during the last available semester and have the same status as the Participant who is to be placed under the Participant subject to Deletion Σ status for whom the guarantee is calculated.

$\Sigma X_{MT,\Sigma,semester}$: The total results of the Zero Settlement for Medium Voltage (MV), for each Periodic Settlement semester during which the Participant who is to be placed under the Participant subject to Deletion Σ status was active. In case where, for a semester when intermediate but not final Corrective Settlements have taken place and a debit balance has arisen, which has been repaid by the Participant, this amount is taken into account and deducted from the total amount of the guarantee.

$\Sigma A_{XT,\Sigma}$: The percentage change of the Final Settlement, carried out by the HETS Operator, after the sending of the final Low Voltage (LV) consumption corrections by the Distribution Network Operator, and the Zero Settlement, performed by the HETS Operator, for the last available semester in which Final Settlement results have been sent. This percentage is calculated for each Participant or Participant subject to Deletion Σ who is registered with the HETS Operator Registry and is represented in the Low Voltage (LV) segment during the last available semester.

ΣA_{XT} : Low Voltage (LV) Safety Ratio which is calculated as the average of the three largest change rates calculated among all Participants or Participants subject to Deletion Σ registered with the HETS Operator Registry and are represented in the Low Voltage (LV) during the last available semester and have the same status as the Participant who is to be placed under the Participant subject to Deletion Σ status for whom the guarantee is calculated.

The calculation of the Low Voltage (LV) Safety Ratio does not take into account the percentages of change of the settlement results $\Sigma A_{XT,\Sigma}$ for the Participants who, during the last available semester, had for the first time been represented in the electricity market in the Low Voltage.

$\Sigma X_{XT,\Sigma,semester}$: The total results of the Zero Settlement for Low Voltage (LV), for each Periodic Settlement semester during which the Participant who is to be placed under the Participant subject to Deletion Σ status was active. In case where, for a semester when intermediate but not final Corrective Settlements have taken place and a debit balance has arisen, which has been repaid by the Participant, this amount is taken into account and deducted from the total amount of the guarantee.

8. Example of calculation of special guarantee

The HETS Operator calculates a special guarantee for Participant Ξ , who at its request, will be placed under Deletion status within the year 2021.

Suppose that the Participants who have the same status as Participant Ξ present the following change rates between Final Settlement and Zero Settlement for the last available semester, i.e. the first half of 2018 with respect to Medium Voltage ($\Sigma A_{MT,\Sigma}$).

Participants who have the same status as Participant Ξ	MV Percentage Change % ($\Sigma A_{MT,\Sigma}$) for the first half of 2018
E	1,26%
Z	-0,18%
H	0,04%
Θ	-2,34%
I	0,00%

The above table shows that the three largest percentages of MV change are found in Participants E, H and I. Therefore, the Medium Voltage Safety Ratio (ΣA_{MT}) is calculated as follows:

$$\Sigma A_{MT} = \frac{(\Sigma A_{MT,E} + \Sigma A_{MT,H} + \Sigma A_{MT,I})}{3} = \frac{(1,26\% + 0,04\% + 0,00\%)}{3} = 0,43\%$$

Suppose that the Participants who have the same status as Participant Ξ present the following change rates between Final Settlement and Zero Settlement for the last available semester, i.e. the first half of 2018 with respect to Low Voltage ($\Sigma A_{XT,\Sigma}$).

Participants who have the same status as Participant Ξ	LV Percentage Change % ($\Sigma A_{XT,\Sigma}$) for the first half of 2018
E	32,53%
Z	40,48%
H	47,23%
Θ	13,26%
I	7,80%
Π	112,91%

From the table above, it appears that the three largest percentages of change in LV are found in Participants Z, H and Π . However, because Participant Π has recently started being active in LV, this percentage is not taken into account, but the next one, i.e. that of Participant E. Thus, the Safety Ratio for Low Voltage (SR_{LV}) is calculated as follows:

$$\Sigma A_{XT} = \frac{(\Sigma A_{XT,E} + \Sigma A_{XT,Z} + \Sigma A_{XT,H})}{3} = \frac{(32,53\% + 40,48\% + 47,23\%)}{3} = 40,08\%$$

Then, the total results of the Zero Settlement for Medium and Low Voltage are presented, for each available Periodic Settlement semester, for Participant Ξ .

For Medium Voltage:

Semester	Zero MV Settlement Results for Participant Ξ (€)	Results of the Interim MV Settlement for Participant Ξ (if any)
1st semester 2019	186.334,58	-
2nd semester 2019	394.576,32	-
1st semester 2020	732.895,22	-
2nd semester 2020	956.187,24	-

As it can be seen from the table, the total MV results of the Zero Settlement for Participant Ξ ($\Sigma X_{MT,\Xi}$) is equal to € 2.269.993,36. Also, no interim Corrective Settlement has been performed.

For Low Voltage:

Semester	Zero LV Settlement Results for Participant Ξ (€)	Results of the Interim LV Settlement for Participant Ξ (if any)
1st semester 2019	23.388,18	-
2nd semester 2019	53.892,34	-
1st semester 2020	77.623,66	105.887,54
2nd semester 2020	89.192,74	-

As it can be seen from the table above, the total LV results of the Zero Settlement for Participant Ξ ($\Sigma X_{XT,\Xi}$) is equal to € 244.096,92. Also, an interim Corrective Settlement has been carried out for the first half of 2020.

Based on the above data and applying the formula in section 7.1, it appears that the special guarantee for Participant Ξ , who is to be placed under Deletion, is calculated as follows:

$$EIA_EFF_{\Xi,(2021-2023)} = [(0,43\% \times 2.269.993,36) + (40,08\% \times 244.096,92)] = 107.595,02\text{€}$$

However, as an interim LV Corrective Settlement was carried out during the first half of the year, the amount of the special guarantee is reduced by the difference of the LV Zero Settlement for the first half of 2020 for Participant Ξ , from the intermediate Corrective Settlement for the first half of 2020.

$$\text{Impairment} = 105.887,54 - 77.623,66 = \text{€ } 28.263,88$$

Therefore, the new amount of the special guarantee, taking into account the impairment, is equal to:

$$EIA_EFF_{\Xi,(2021-2023)} = 107.595,02 - 28.263,88 = 79.331,14\text{€}$$