



DECISION 5¹

“Electricity Futures Contract Specifications in the Financial Energy Market (Derivatives Market) of HEnEx”

THE HELLENIC ENERGY EXCHANGE S.A.

Having regard to the provisions of par. 2.1, 2.2.1, 2.3, 2.6.3, 3.2.2 and 3.3.1 of the Financial Energy Market Rulebook of HEnEx (here-in-after the “Rulebook”) as well as the need to determine the Electricity Futures Contract terms and specifications.

HAS DECIDED AS FOLLOWS

SCOPE

The herein Decision defines the following:

- α) the contract specifications,
- β) the terms and the procedure governing the admission of the trading series,
- γ) the methodology to determine the daily settlement price,
- δ) the admission phases,

of the Electricity Futures Contracts.

Article 1. Admission Phases

Phase I: the phase under which the Underlying Value of the Futures Contracts is based on the hourly clearing prices of the Day Ahead Scheduling (DAS) of Law 4001/2011.

Phase II: the phase under which the Underlying Value of the Futures Contracts is based on the hourly clearing prices of the Day Ahead Market of Law 4425/2016.

¹ Unofficial translation from the Greek language (Ref. HenEx: ~~7242256/2924.1003~~.2020), as of ~~2429/1003~~/2020. In case of any discrepancy between the Greek and the English version, the Greek version prevails.

Article 2. Tradable Futures Contracts

The following Futures Contracts are available for trading in the Derivatives Market of HEnEx:

- (a) Greek Electricity Base Load Futures Contract,
- (b) Greek Electricity Peak Load Futures Contract.

Article 3. Admission Specifications

Contract Type	Standardized Futures Contracts that are cash settled with the option of physical settlement.
Underlying Value	The corresponding, per Load Profile (Base or Peak), arithmetic mean (average) of the hourly clearing prices of the Day Ahead Scheduling of Law 4001/2011 (Phase I) or the Day Ahead Market of Law 4425/2016 (Phase II) of HEnEx during the Delivery Period.
Delivery Duration	The duration of a Contract may be: <ul style="list-style-type: none"> 1. Yearly, including a full calendar year, or 2. Quarterly, including three (3) full calendar months of the following options: a) January-February-March, or b) April-May-June, or c) July-August-September, or d) October-November-December, or 3. Monthly, including a full calendar month.
Delivery Period	The relevant period as specified in the Trading Series.
Load Profile	<p>Phase I</p> <ul style="list-style-type: none"> 1. Base Load from 00:00 EET (Eastern European Time) to 24:00 EET, all the delivery days from Monday to Sunday, during the Delivery Period. 2. Peak Load from 08:00 EET to 20:00 EET, all the delivery days from Monday to Friday, during the Delivery Period. <p>Phase II</p> <ul style="list-style-type: none"> 1. Base Load from 00:00 CET (Central European Time) to 24:00 CET, all the delivery days from Monday to Sunday, during the Delivery Period. 2. Peak Load from 08:00 CET to 20:00 CET, all the delivery days from Monday to Friday, during the Delivery Period.
(Trading) Series	<p>During Phase I Monthly Contracts are traded for the months until the month following the launch of the Day Ahead Market of Law 4425/2016, for each Load Profile.</p> <p>During Phase II the following Contracts are traded at all times:</p> <p>For Yearly Contracts, the next calendar year for each Load Profile.</p> <p>For Quarterly Contracts, the next four (4) quarters for each Load Profile.</p>

	<p>For Monthly Contracts, the current month and the next six (6) months for each Load Profile.</p> <p>Increase or decrease of the number of Series being traded is possible in accordance with the relevant procedures set by HEnEx and with the consent of ATHEXClear.</p>
Contract Expiry (Last Trading Day)	<p>Yearly Contract: The Last Trading Day (LTD) is the third Trading Day (TD) before the first delivery day (D) of the relevant year (LTD=D-3TD). Cascading for the Yearly Contracts is performed during the TDS after the end of the trading period.</p> <p>Quarterly Contract: The LTD is the third Trading Day before the first delivery day of the relevant quarter (LTD=D-3TD). Cascading for the Quarterly Contracts is performed during the TDS after the end of the trading period.</p> <p>Monthly Contract: The LTD is the penultimate day of delivery of the relevant Delivery Period and the specific Load Profile. For Base Load Profile, if this day is a Saturday or a Sunday or a public holiday, then the LTD is considered to be the previous Trading Day. For Peak Load Profile, if this day is a public holiday, then the LTD is considered to be the previous Trading Day.</p>
Trading Expiry Time	<p>Yearly Contract: For the Yearly Contract, for each Load Profile, the Trading Expiry Time of the Series is set to be the time that marks the end of the trading period (according to the Trading Hours) on the Last Trading Day of the Series.</p> <p>Quarterly Contract: For the Quarterly Contract, for each Load Profile, the Trading Expiry Time of the Series is set to be the time that marks the end of the trading period (according to the Trading Hours) on the Last Trading Day of the Series.</p> <p>Monthly Contract: For the Monthly Contract, for each Load Profile, the Trading Expiry Time is set to be 12:00 EET (Phase I) / 11:30 CET (Phase II) on the Last Trading Day, except as follows:</p> <p>a) for Base Load Profile, if the penultimate day of delivery of the relevant Delivery Period and the corresponding Load Profile is Saturday or Sunday or public holiday, or</p> <p>b) for Peak Load Profile, if the penultimate day of delivery of the relevant Delivery Period and the corresponding Load Profile is a public holiday or is followed by Saturday,</p> <p>then the Trading Expiry Time is set to be 14:30 CET.</p>
Contract Price	The buy or sell price of the Contract. The Contract Price is expressed Euro per MWh.
Price Tick	0.01 EUR per MWh.
Delivery Rate	1 MWh per hour
Contract Size	<p>Contract Size (in MWh): “Delivery Rate x delivery days x delivery hours per delivery day”, for each Load Profile.</p> <p>The Contract Size depends on the number of days of each Delivery Period and the winter/summer time (for Base Load Profile).</p>

	<p>Twenty-three (23) delivery hours are set for the delivery day on which the time is switched to daylight saving (summer) time for Base Load Profiles. Twenty-five (25) delivery hours are set for the delivery day on which the time is switched to winter time for Base Load Profiles.</p>
<p>Starting Price</p>	<p>The Starting Price equals to the Daily Settlement Price of the immediately preceding Trading Day. On the first Trading Day of the Series concerned, the Starting Price shall be equal to the last available Daily Settlement Price of the immediately preceding Series with a corresponding Delivery Duration.</p> <p>If, for any reason, the Starting Price does not exist or cannot be determined based on the above, then:</p> <ol style="list-style-type: none"> for the Monthly Contracts, the Starting Price equals to the relevant, per Load Profile, arithmetic mean of the hourly clearing prices of the Day Ahead Scheduling of Law 4001/2011 or the Day Ahead Market of Law 4425/2016, as appropriate, that correspond to the immediately previous calendar month, for the Quarterly and Yearly Contracts, the Starting Price equals to the relevant, per Load Profile, arithmetic mean of the hourly clearing prices of the Day Ahead Scheduling of Law 4001/2011 or the Day Ahead Market of Law 4425/2016, as appropriate, that correspond to the <u>three (3)</u> immediately previous calendar year<u>months</u>.
<p>Daily Price Fluctuation Limits</p>	<p>The maximum daily price fluctuation limit in the Market is set to:</p> <ul style="list-style-type: none"> ±20% of the Starting Price for Monthly Contracts. ±15% of the Starting Price for Quarterly Contracts. ±10% of the Starting Price for Yearly Contracts. <p><u>For the period starting from the introduction of a Series until the trading day when the first trade of the Series occurs, the above limits for that Series are doubled. Further change of the above limits is possible by decision of HEnEx.</u></p> <p>The above limits are doubled for each Series until the trading day when the first trade of the Series occurs.</p> <p>If at least one trade has been performed on a Series and provided that two trading sessions have preceded without any trade having been performed, HEnEx may modify, prior to the beginning of the trading session and with the consent of ATHEXClear, the maximum fluctuation limit of the Series. For this change, HEnEx shall take into account the orders submitted and their time duration that were active in the Trading System. HEnEx may increase, prior to the start of the trading session and with the consent of ATHEXClear, the maximum fluctuation limit of Series provided that two trading sessions have taken place without any trade having been performed. For this increase, HEnEx shall take into account the orders submitted and their time duration that were active in the Trading System.</p> <p><u>All above changes</u> This increase shall be communicated to HEnEx Members through the Trading System.</p>

Trading Methods and Trading Hours	<p>Scheduled Trading Methods and Trading Hours: Method 1 – Continuous Trading: during the working days from 09:30 CET to 14:30 CET.</p> <p>Secondary Trading Methods for the purposes of the Automatic Volatility Interruption Mechanism (AVIM): Method 2 – Call Auction.</p>
Minimum Quantity during Continuous Trading	<p>One (1) Contract.</p>
Cascading	<p>Yearly Contracts: Cascading procedure is foreseen. On the Last Trading Day of a Yearly Contract, each open position therein shall be replaced by an equivalent position in the three corresponding Monthly Contracts for the calendar months from January to March, as well as in the three corresponding Quarterly Contracts for the second up to the fourth quarters, which overall correspond to the Delivery Period of the Yearly Contract, at the last Daily Settlement Price of the Yearly Contract, while the original Yearly Contract expires.</p> <p>Quarterly Contracts: Cascading procedure is foreseen. On the Last Trading Day of a Quarterly Contract, each open position therein shall be replaced by an equivalent position in the three corresponding Monthly Contracts, which overall correspond to the Delivery Period of the Quarterly Contract, at the last Daily Settlement Price of the Quarterly Contract, while the original Quarterly Contract expires.</p> <p>Monthly Contracts: For the Monthly Contracts no Cascading is foreseen.</p> <p>The Cascading procedure is performed at the Position Account level, as foreseen in the Rulebook for Clearing Derivatives Transactions of ATHEXClear.</p>
Physical Settlement	<p>Phase I: Not available.</p> <p>Phase II: Solely the Participants of the Day Ahead Market of HEnEx have the option of Physical Settlement of the amount of electrical energy that corresponds to the positions they hold in Monthly Futures, as specified in the Rulebook for Clearing Derivatives Transactions of ATHEXClear and the Day-Ahead and Intra-Day Markets Trading Rulebook.</p>
Daily Cash Settlement	<p>The Contracts are subject to a Daily Cash Settlement based on the Daily Settlement Price.</p> <p>Payment and collection of Daily Cash Settlement amounts shall be performed on the following trading day.</p>
Daily Settlement Price	<p>The price that is calculated based on the relative calculation methodology set by HEnEx for the Contract, rounded to the nearest valid price step. ATHEXClear may determine alternative methods for this calculation, taking into consideration the necessary circumstances at each time.</p>

Final Settlement	Final Settlement is performed via cash settlement.
Final Settlement Day	<p>For the Monthly Contracts, the trading day after the Last Trading Day. If the Last Trading Day is followed by a Sunday or public holidays following a Sunday which are included in the relevant Delivery Period, then the Final Settlement Day is the second (2nd) business day following the Last Trading Day.</p> <p>The Quarterly and Yearly Contracts are subject to Cascading on their Last Trading Day.</p> <p>HEEx publishes on an annual basis and in collaboration with ATHEXClear the trading, clearing and settlement calendar, which includes all relevant details.</p>
Final Settlement Price	<p>The Final Settlement Price which is used on the Final Settlement Day of the Monthly Contract corresponds to the value of the arithmetic mean (average) of the hourly clearing prices of the Day Ahead Scheduling of Law 4001/2011 (Phase I) or the Day Ahead Market of Law 4425/2016 (Phase II) of HEnEx for the specific Load Profile and Delivery Period of the Contract.</p> <p>The Final Settlement Price is calculated by ATHEXClear on the Last Trading Day.</p> <p>If the Last Trading Day is followed by a Sunday or public holidays following a Sunday which are included in the relevant Delivery Period, then the Final Settlement Day is calculated by ATHEXClear on the first (1st) business day following the Last Trading Day, in order to perform the final settlement during the Final Settlement Day. In the above case, the relevant Contract are subject to Daily Cash Settlement on the Last Trading Day based on the Daily Settlement Price.</p> <p>In the event of modification in the Trading Expiry Time due to exceptional circumstances, HEnEx may modify accordingly the time schedule of the methods of the above paragraphs for the calculation of the Final Settlement Price.</p> <p>HEEx announces the Final Settlement Price immediately after its calculation as set out in the preceding paragraphs.</p> <p>HEEx publishes on an annual basis and in collaboration with ATHEXClear the trading, clearing and settlement calendar, which includes all relevant details.</p>
Payable / Receivable Daily & Final Cash Settlement Amount	<p>Whenever the Daily/Final Settlement Price of the Contract, per Series, is higher than:</p> <ol style="list-style-type: none"> a) the Contract trade price, on the first Daily Cash Settlement, b) the Daily Settlement Price of the immediately preceding trading day, for each subsequent Daily Cash Settlement other than the first, <p>the buyer is entitled to receive and the seller is obliged to pay the Daily/Final Cash Settlement Amount resulting from the difference between the above prices.</p>

	<p>Whenever the Daily/Final Settlement Price of the Contract, per Series, is lower than:</p> <ul style="list-style-type: none"> a) the Contract trade price, on the first Daily Cash Settlement, b) the Daily Settlement Price of the immediately preceding trading day, for each subsequent Daily Cash Settlement other than the first, <p>the seller is entitled to receive and the buyer is obliged to pay the Daily/Final Cash Settlement Amount resulting from the difference between the above prices.</p> <p>The Daily/Final Cash Settlement Amount results from the following formula::</p> <p>Daily/Final Cash Settlement Amount = (Dsettle – Pfuture) x M</p> <p>where:</p> <p>Dsettle: The Daily Settlement Price of the Contract on the current trading day/Final Settlement Price of the Contract (using two decimal places),</p> <p>Pfuture: The Contract trade price or the Daily Settlement Price of the immediately preceding trading day (using two decimal places),</p> <p>M: The Contract Size.</p>
Settlement Currency	Euro
Available Order Types	<p>Based on the price:</p> <ul style="list-style-type: none"> - Market order - Limit order <p>Based on the condition:</p> <ul style="list-style-type: none"> - Order with condition “Immediate Or Cancel” - Order with condition “Fill Or kill” <p>Based on the duration:</p> <ul style="list-style-type: none"> - “Good For Day” orders - “Good Till Cancel” orders - “Good Till Date” orders

Article 4. Series

4.1 Series Nomenclature

The Series nomenclature contains the following characters.

a) Country

The base of the Series name consists of exactly two (2) characters of the Latin alphabet, identifying the Country (GR).

b) Commodity type

The Commodity Type is identified by the Latin "E" for Electricity.

c) Load Profile

The Load Profile is identified by a Latin character: B for the Baseload Contracts and P for the Peakload Contracts.

d) Delivery Duration

The Duration of delivery is identified by a Latin character, as follows:

- M, for Monthly Contracts
- Q , for Quarterly Contracts and
- Y, for Yearly Contracts

e) Delivery Period (period of Underlying Value)

The Delivery Period is identified by two (2) digits, according to the following coding:

- for Monthly Contracts based on the following table as well as two digits representing the Year (00-99)

Month	Contract
January	01
February	02
March	03
April	04
May	05
June	06
July	07
August	08
September	09
October	10
November	11
December	12

For example, the Monthly Baseload Electricity Contract for June 2020 is symbolized by GREBM0620.

- for Monthly Contracts based on the following table as well as two digits representing the Year (00-99)

Quarter	Symbol
A' Quarter	1
B' Quarter	2
C' Quarter	3
D' Quarter	4

For example, the Quarterly Peakload Electricity Contract for the first quarter of 2020 is symbolized by GREPQ320.

- for Yearly Contracts the last two digits that represent the Year (00-99).
For example, the Yearly Peakload Electricity Contract for 2021 is symbolized by GREPY21.

4.2 Series admission procedure

1. **Regular procedure.** New Series on the Contracts are introduced on the trading day after the Last Trading Day of a Contract with corresponding Delivery Duration.
2. **Non regular procedure.** New Series on the Contracts may be introduced, irrespective of the regular procedure, provided that HEnEx considers it appropriate for the operation of the Contract or to ensure trading on the Contract orderly.

Article 5. Calculation Methodology of the Daily Settlement Price

For the calculation of the Futures' Daily Settlement Price, the method foreseen in the following provisions shall be applied based on the trades and/or orders conducted. As trades, for the purposes of this article, shall be considered the trades that have taken place with Method 1 (automatic and continuous trading) as applied to the Derivatives Market in accordance with the provisions of the Rulebook. Cancelled trades are not taken into account to the calculation of the Daily Settlement Price. As orders, for the purposes of this article, shall be considered the orders (or the unexecuted part of trades) that are contained in the Main Board of Method 1 at the close of the session.

5.1 Algorithm parameters

Settlement Reference Window (SRW)	The last one (1) hour of trading during the continuous trading period.
Minimum Trade Volume (MTV)	The minimum trade volume so as it can be considered in the calculation of the Daily Settlement Price is set to one (1) Contract.
Minimum Order Volume (MOV)	The minimum order volume so as it can be considered in the calculation of the Daily Settlement Price is set to one (1) Contract.

Maximum Bid-Ask Order Spread (MBAOS)	The maximum percentage spread between a buy order price and the best sell order price, and vice versa, so as an order can be considered in the calculation of the Daily Settlement Price of a Series is set at 10%.
Minimum Period an Order Remains Active (MPORA)	The last ten (10) minutes of trading at the continuous trading period, during which an order shall have, at least, remained active based on its time stamp, in order to be considered in the calculation of the Daily Settlement Price.
Number of Trades during the Settlement Reference Window (X)	The number of valid trades (based on the Minimum Trade Volume criterion) during the Settlement Reference Window, which distinguishes Cases A and B of the algorithm, is set at ten (10).
Number of Last Orders (Y)	The minimum number of last valid trades (based on the Minimum Trade Volume criterion) for the needs of Case B is set at ten (10).

5.2 Calculation algorithm

The Daily Settlement Price is determined based on the following algorithm:

- Case A: Number of trades during the Settlement Reference Window is greater than or equal to X:** the Daily Settlement Price is the sum of (a) the weighted average price of the trades satisfying the MTV during the SRW, with a coefficient of 0.75, and (b) the average of b1) the weighted average price of the best sell orders and, b2) the weighted average price of the best buy orders, with a coefficient of 0.25. The weighted average price of the best sell (buy) orders shall be calculated on the basis of the sell (buy) orders with the minimum (maximum) price that satisfy the MOV, the MBAOS and the MPORA. In the event that there are no orders that meet the MOV, the MBAOS and the MPORA criteria, the calculation of the Daily Settlement Price, based on the above methodology, considers only term (a) which is related to the trades using coefficient 1 (100%).
- Case B: Number of trades during the Settlement Reference Window is lower than or equal to X:** the Daily Settlement Price is the sum of (a) the weighted average price of the last Y trades satisfying the MTV during the trading session, with a coefficient of 0.75, and (b) the average of b1) the weighted average price of the best sell orders and, b2) the weighted average price of the best buy orders, with a coefficient of 0.25. In the event that there are no Y trades in total satisfying the MTV during the trading session, then the Daily Settlement Price is calculated based on the available trades provided that there is at least one valid trade. In the event that there are no orders that meet the MOV, the MBAOS and the MPORA criteria, the calculation of the Daily Settlement Price, based on the above methodology, considers only term (a) which is related to the trades using coefficient 1 (100%).
- Case C: If there are no trades during the trading session** then the Daily Settlement Price is calculated based on the average of a) the weighted average price of the best sell orders and, b) the weighted average price of the best buy orders.

4. **Case D: If the calculation cannot be performed based on Cases A-C**, then the Daily Settlement Price is considered equal to the relevant price of the previous trading day for the same Series, if any.
5. Case E: In cases where a) the Daily Settlement Price cannot be calculated under Cases A-D and in particular if on the first trading day of a Series the calculation cannot be performed based on Cases A-C or b) alternatively to Case D and provided that it has been requested to update the Daily Settlement Price, the latter is calculated as the average of the prices provided by the Trading Members through the chief trading procedure. HEnEx reserves the right to exclude from the above calculation values that deviate significantly from the average value. Each Trading Member may participate in the above process through its certified traders. Eligible for requesting update of the Daily Settlement Price are HEnEx, ATHEXClear, or any Trading Member while the request shall be submitted within 15 minutes of the end of the session provided that 10 consecutive trading sessions have elapsed at which the Daily Settlement Price has been determined on the basis of Case D. The Daily Settlement Price update request is submitted on the form specified by HEnEx. HEnEx shall notify, by all appropriate means, its Members in the event of commencement of the chief trading procedure. If the calculation of the Daily Settlement Price under the chief trading procedure was not feasible for any reason, the Daily Settlement Price shall be the Starting Price.

5.3 Redefining Daily Settlement Prices for overlapping Series

In order to prevent arbitrage between overlapping Series, it is foreseen to redefine the Daily Settlement Prices as they arise under par. 3.2. Possible overlapping Contracts are:

- α) Quarterly and Yearly Contracts
- β) Monthly and Quarterly Contracts

Between the Daily Settlement Price of the Yearly Contract and the relevant Quarterly Contracts currently traded, the following mathematical equation shall apply:

$$PY_y = \frac{\sum_{q=1}^4 PQ_{qy} * QQ_{qy}}{\sum_{q=1}^4 QQ_{qy}}$$

where

- PY_y the Daily Settlement Price of the Yearly Contract corresponding to year y ,
- PQ_{qy} the Daily Settlement Price of the Quarterly Contract q ($q=1,2,3,4$) of year y ,
- QQ_{qy} the size of the Quarterly Contract q ($q=1,2,3,4$) of year y .

Between the Daily Settlement Price of a Quarterly Contract and the relevant Monthly Contracts currently traded, the following mathematical equations shall apply:

$$PQ_{qy} = \frac{\sum_{m \in M^q} PM_{my} * QM_{my}}{\sum_{m \in M^q} QM_{my}}$$

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- M^q the set of the three months corresponding to quarter q ,
- PM_{my} the Daily Settlement Price of the Monthly Contract m ($m=1,\dots,12$) of year y ,
- QM_{my} the size of the Monthly Contract m ($m=1,\dots,12$) of year y .

5.4 Modification of the calculation

HEnEx may modify the calculation of the Daily Settlement Price by way of derogation from the terms of par. 3.2-3.3, if there are exceptional events in the markets that necessitate such modification or the Contract admission specifications are amended or for Market protection reasons.

Article 6. Pre-Agreed Trades

The pre-agreed trades of par. 2.3.4 of the Rulebook will be added to the Trading Methods upon decision of HEnEx.

Article 7. Position Limits

They are defined upon decision of the Hellenic Capital Market Commission.

Article 8. Validity

The herein decision is valid from 2429/1003/2020.

The herein decision shall be uploaded to the website of HEnEx <https://www.enexgroup.gr/>.