

DECISION OF RAE DECISION UNDER NO. 1008A/2020

Definition of the percentage X% of the retail supply share and A% of energy quantities that are included in the validated Physical Offtake Nominations and correspond to energy quantities of trades on Energy Financial Instruments for the year 2020, in accordance with the provisions of subsection 4.4.2.2 of the Day-Ahead Market & Intra-Day Market Rulebook and article 18 par. 6 of the L. 4425/2016, as in force

The Regulatory Authority for Energy

At its regular meeting, at its headquarters, **on the 17th of June 2020** which continued on the **18th of June 2020** and

Taking into account:

1. The provisions of Chapter C' *"Stipulations coming under the competency of the Ministry for the Environment and Energy"* of L. 4425/2016 *"Urgent regulations of the Ministries of Finance, Environment and Energy, Infrastructure, Transport and Networks and the Ministry of Labor, Social Security and Social Solidarity, on the application of the agreement on fiscal targets and structural reforms and other stipulations"* (GG A' 185/30.09.2016), as applying and in particular article 18 par. 6 of this law.
2. The stipulations of L. 4001/2011 *"On the operation of Energy Markets for Electricity and Natural Gas, for Research, Production and Hydrocarbon transfer networks and other regulations"* (GG A' 179/22.08.2011), as applying.
3. The Decision of the Deputy Minister of Environment and Energy *Setting a schedule for the date of commencement of the Day-Ahead, Intra-Day and Balancing Markets of L. 4425/2016 (A' 185), as applying"* (ΥΠΕΝ/ΔΗΕ/7083/112, GG B' 172/30.01.2020).
4. The No. 369/2018 Decision of RAE *"Directions for drawing up the Rulebooks of Energy Markets, as provided for in L. 4425/2016, as applying"* (GG B' 1880/24.05.2018).
5. The Day-Ahead and Intra-Day Market Trading Rulebook, (Decision of RAE under the No. 1116/2018, (GG B' 5914/31.12.2018), as applying following its modification by

the No. 820/2020 Decision of RAE, (GG B' 1941/21.05.2020), and in particular the provisions of sub-section 4.4.2.2.

6. The under Reg. No. RE I-275984/31.01.2020 letter of HEnEx S.A.. (No./DATE./HEnEx: 203/31.01.2020) with the subject: *"Submission of Proposals, Methodologies and Draft Technical Decisions based on the Day-Ahead and Intra-Day Market Trading Rulebook of the Hellenic Energy Exchange S.A.."*
7. The RAE Public Consultation on the aforementioned proposals of HEnEx S.A. (relevant document 6), that took place from 05.02.2020 up until 28.02.2020¹ and about which the following remarks have been posted in its website ²:
 - (a) The under Reg. No. RAE I-277077/18.02.2020 letter of UNICEN.
 - (b) The under Reg. No. RAE I-277723/27.02.2020 letter of Public Power Corporation.
 - (c) The under Reg. No. RAE I-277724/28.02.2020 letter of Public Power Corporation.
 - (d) The under Reg. No. RAE I-277805/28.02.2020 letter of Hellenic Association of Independent Power Producers.
 - (e) The under Reg. No. RAE I-277876/03.03.2020 letter of Natural Gas - Hellenic Energy Company.
 - (f) The under Reg. No. RAE I-277879/03.03.2020 letter of HERON.
8. The under Reg. No. O-81505/17.03.2020 letter of RAE with subject *"Proposals of HEnEx S.A. on the amendment of Day-Ahead and Intra-Day Market Trading Rulebook as well as the relevant Methodologies and Technical Decisions in the frame of its application"*.
9. The under Reg. No. RAE I-279139/24.03.2020 letter of HEnEx S.A. (No./DATE./HEnEx: 716/23.03.2020), with subject *"Transfer of planned proposals of HEnEx S.A. on the amendment of Day-Ahead and Intra-Day Market Trading Rulebook as well as the relevant Methodologies and Technical Decisions in the frame of its application"*.
10. The under Reg. No. RAE I-279630/01.04.2020 letter of HEnEx S.A. (No./DATE./HEnEx: 762 /31.03.2020) with the subject: *"Transfer of proposals of HEnEx S.A. on the amendment of Day-Ahead and Intra-Day Market Trading Rulebook as well as the relevant Methodologies and Technical Decisions in the frame of its application"*.
11. The fact that in accordance with the provisions of par. 1 of article 32 of L. 4001/2011, the regulatory acts issued by RAE are published in the Official Gazette.
12. The fact that the provisions hereof do not entail any charge on the State Budget.

¹ http://www.rae.gr/categories_new/about_rae/activity/global_consultation/current/2020/0502_2.csp
http://www.rae.gr/site/categories_new/about_rae/factsheets/2020/maj/2102_3.csp

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http://www.rae.gr/categories_new/about_rae/activity/global_consultation/history_new/2020/0503_lix_0502_1.csp

Has come to the following conclusions:

Because, according to par. 6 of article 18 of L. 4425/2016, as applying, *"In order to ensure the efficient operation of Power Markets, it is possible, by decision of RAE, to define for the Participants, per supply portfolio, a maximum transaction rate on Energy Financial Instruments, settled with natural delivery of energy and/or on other energy derivatives and/or on wholesale energy products of the Rulebook (EU) No. 1227/2011 with the obligation of physical delivery, that have been concluded within the Energy Derivatives Market or bilaterally, outside of it, which can be declared in the trading system of the Day-Ahead Market, as specified in detail in the Energy Exchange Rulebook."*

Because, RAE, in accordance with its No. 369/2018 Decision, regarding the *"Directions for drawing up the Regulations of Energy Markets, as provided for in L. 4425/2016, as in force"*, defined, inter alia, that *"9. The NEMO audits sell orders prior to the settlement of Day-Ahead Market. The audit includes the following: [...] Additionally, the NEMO following the settlement of Day-Ahead Market, audits sell orders in terms of meeting the maximum transaction rate through Energy Financial Instruments, settled with natural delivery of energy and have been concluded within the Energy Derivatives Market or bilaterally, outside of it, and/or other wholesale energy products of the Rulebook (EU) No. 1227/2011 with the obligation of physical delivery for the Participants per supply portfolio."*

Because, in accordance with paragraph 1 of subsection 4.4.2.2 "Non-Compliance Charge for breaching the restriction of the Maximum Percentage of Physically Delivered Energy Financial Instruments" of the Day-Ahead Market and the Intra-Day Market Trading Rulebook (hereinafter referred to as the "Rulebook", RAE Decision 1116/2018, as amended by RAE Decision 820/2020), it applies that: *"1. For each Supplier with a retail market share exceeding a X% threshold and for each Market Time Unit, the percentage of energy quantities included in the validated Physical Offtake Nominations that correspond to energy quantities of trades on Energy Financial Instruments executed within the Energy Derivatives Market or concluded bilaterally, on the total amount of energy quantities purchased under accepted Day-Ahead Market Buy Orders, may not exceed an A% threshold. The X% and A% values are set for each calendar year by a RAE Decision, following a proposal of HEnEx."*

Because, as of the decision dated 23.01.2020 by the Deputy Minister of Environment and Energy, the schedule was set for the commencement of the Day-Ahead, Intra-Day and Balancing Markets of L. 4425/2016, as in force. In particular, according to point A:

"The expiry date for the submission of the proposals required subject to the stipulations of L. 4425/2016, as applying, on Regulations, Codes, Manuals, methodologies, as well as technical decisions to the Regulatory Authority for Energy, is the 31st of January, 2020, [...]"

Because, with the dated as of 31.01.2020 document (rel. 6), HEnEx S.A. submitted on time, inter alia, its proposal regarding the definition of the percentage X% of the

retail supply share and A% of the quantities of energy that are included in the validated Physical Offtake Nominations and that correspond to energy quantities of trades on Energy Financial Instruments within the Energy Derivatives Market or bilaterally, on the total amounts of energy purchased with acceptable Buy Orders in the Day-Ahead Market, in accordance with the provisions of subsection 4.4.2.2 of the Rulebook.

Because, already, from the design phase for the adaptation of the domestic Electricity Market to the requirements of the European Target Model³, in order to assess the need to introduce market power mitigation measures in the context of the operation of new markets, in December 2017, ECCO International – which had undertaken with the support of the European research institute JRC (Joint Research Center) the elaboration of the detailed design (Detailed Level Market Design) of the four (4) new markets and the Regulations that will govern these markets – prepared the study entitled "*Study on proposals on potential market power mitigation measures for the Hellenic electricity market*"⁴. This study, after presenting in detail the various cases of market power, combining economic competition models and their application in the wholesale electricity market, and listing some potential measures to mitigate market power, evaluated a set of Market Power Indexes, calculating them in a simulation of market scenarios. The Forward Hedging Ratio (FHR), i.e. the percentage of A%, was considered the most appropriate for exploring the interaction of the two markets, Derivatives and Day-Ahead Market, and exercising a dominant position, in the form of retaining demand from the physical market delivery (or equivalent to the submission of buy/sell order price-taking). The implementation and monitoring of the FHR (percentage of A%), as a regulatory rule, was proposed as a transitional measure, until a sufficient level of competition was created.

Because, according to the submitted proposal (rel. 6), HEnEx S.A., in order to meet its obligation to submit a relevant methodology to RAE for the definition of the limits X% and A%, with the main goal of a smooth transition to the new market structure, assigned, in April 2019, ECCO International to update and expand the scope of the aforementioned study, that the same company had prepared in December 2017. Specifically, as mentioned in the proposal of HEnEx S.A., in the new study of ECCO International⁵, a quantitative investigation of the impact of different levels of the FHR was performed (percentage A%) on the liquidity of the Day-Ahead Market, on the ability to set prices that reflect short-term marginal costs and on the shaping the shares of the participants, under specific conditions and assumptions of change in key market sizes.

In particular, simulations were performed in the medium-long term (2020-2023), for different levels of values of this index (0%, 5%, 10%, 20%, 30% and 40%) and then a

³ <http://www.rae.gr/system/docs/consultations/30092014/anak.csp>

⁴ ECCO International Inc (2017) "Study on proposals on potential market power mitigation measures for the Hellenic electricity market – Lot 3", Report for Joint Research Centre, September 2017.

⁵ ECCO International Inc (2019) "Buyer Side Market Power Analysis & Calculation of the Various Indices Including the Forward Hedging Ratio for the Greek Wholesale Energy market", Report for HEnEx, September 2019.

relevant analysis was performed on the shaped prices and shares of the Participants in the Day-Ahead Market. For each FHR scenario (percentage A%) the liquidity in the Day-Ahead Market was calculated as well as the number of hours that the liquidity drops to zero. The market price profile for each scenario was also analyzed.

Liquidity in the Day-Ahead Market on an annual basis was calculated as follows:

$$Liquidity_m = 100\% - \frac{\sum_{t \in m} TotalOutofMarketInjections_t}{\sum_{t \in m} (Electricity\ consumption_t + Exports_t)}$$

$$TotalOutofMarketInjections_t = BilateralsPPC_t + BilateralsPrivate_t + RESinjections_t + HydroMandatoryInjections_t$$

Wherein,

t time marker

m month marker

Data from the existing wholesale market operating with Day-Ahead Scheduling (DAS) were used for hourly market solution simulations as well as assumptions for predicting parameters such as: the evolution of electricity consumption in the interconnected system, the generation capacity mix (taking into account the lignite plant withdrawal program (Data as reported by: June 2019), the Draft of the Ten-year Network Development Plan of the HTSO for the period 2019-2028, the penetration of RES and the evolution of fuel and CO₂ prices.

In the study it was considered that all thermal units submit Simple Hourly Orders consisting of quantity (MWh) - price (€/MWh) pairs, where the quantity is equal to the total availability of each unit and the price corresponds to the Minimum Average Variable Cost of the generation unit. The cycling operation strategies of the units (starting and extinguishing the gas units during the same day) as well as the use of Block Orders were not examined.

Taking into account the results of the above analysis, ECCO International, concluded that the maximum FHR limit (percentage of A%) should be between 10% and 20% and under no circumstance should exceed 20%;

Because, HEnEx S.A. take into account all of the above assumptions and the results of the above study, proposed the value of 10% for the percentage A% and the value of 4% for the percentage X%, to be applied for all vertical Suppliers. Moreover, HEnEx S.A. suggested, the above percentages to be applied for an initial transitional period of operation of the new wholesale markets, and specifically from the start of operation of the new markets until December 2020, in order to ensure sufficient liquidity and to form/balance the price signals in the Day-Ahead Market.

Because, RAE has published the relevant proposal of HEnEx S.A. for Public Consultation from 05.02.2020 until 21.02.2020, which was extended until 28.02.2020 (rel. 7). In the context of the public consultation, views were submitted for this proposal by PPC S.A., UNICEN, the Hellenic Association of Independent Power

Producers, the Natural Gas - Hellenic Energy Company S.A. and HERON S.A.. HEnEx S.A., as per rel. 10 letter, submitted, inter alia, to the Authority its views on the comments made by the participants in the aforementioned public consultation together with its documented decision whether to accept or not the above comments.

Because, the definition of the above percentages X% and A%, according to the explanatory memorandum of L. 4425/2016, is introduced as a measure, which aims at the efficient operation of the market, namely at the operation of a market, which will have sufficient liquidity and the Clearing Price will reflect the short-term marginal cost of production. The above measure, aimed at tackling the abuse of a dominant position, should be introduced taking into account in particular the prevailing conditions of competition and the structure of the Hellenic electricity market as a whole, at the generation and supply level, both for the wholesale and retail markets.

Accordingly, in accordance also with the proposal of HEnEx S.A., the adoption of respective measures for Market Power Mitigation, has been proposed in markets with characteristics similar to the Hellenic electricity market, in which there is a dominant player (dominant participant), who carries out a vertical generation/supply activity and who holds a percentage in the supply market that lags far behind the ability to meet the needs of its serviced load with its own means (net-buyer).

Because, as RAE has acknowledged in its No. 369/2018 Decision, such regulatory measures (percentages X% and A%) have to be imposed, at least during the initial stage of operation of the new Markets and given the existing structure of the Hellenic electricity market and the significant share held by the Public Power Corporation S.A., in electricity supply (66.27%, according to the May Wholesale and Retail Penetration and Shares Monthly Report 2020⁶), in order to limit its dominant position, to improve liquidity and transparency in markets, as well as to enhance its participation in the Day-Ahead Market and the Intra-Day Market.

Because, the Day-Ahead Market is the dominant wholesale market, which reflects the forecasts regarding the supply and demand of electricity in terms of physical delivery. It is also the field of shaping the wholesale buy and sell price and can offer opportunities for short-term profit and seasonal scarcity. The operation of the Day-Ahead Market, without the parallel operation of the Energy Derivatives Market (hereinafter "Derivatives Market") may expose the Participants, Producers and/or Suppliers, to the risk of price volatility and prevent the efficient operation of the market, both the wholesale and retail, in its entirety. Therefore, the Derivatives Market, operating in parallel with the Day-Ahead Market, allows Participants, through the conclusion of derivatives contracts, to guard against a possible, intense short-term volatility of prices, while offering incentives to producers to offer their production at competitive prices, securing in the long run part of the necessary cash flows. However, the benefits of the Derivatives Market must be weighed against the effect of the Derivatives Markets on the liquidity of the Day-Ahead

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http://www.enexgroup.gr/fileadmin/groups/EDSHE/FEP/MonthlyReports/FEPAS_MonthlyReport_202005_GR_V01.pdf

Market, taking into account the structural conditions of competition in the production/consumption mix.

Because, the smooth operation of the Day-Ahead Market is based on the price formation, which is achieved when the Clearing Price reflects the short-term marginal cost of production.

Because, RAE, weighting the need to find the optimal balance between the above objectives, namely the existence of sufficient liquidity in the Day-Ahead Market, dealing with phenomena of dominance practice and the existence of hedging tools and taking into account:

- that, according to the results of the ECCO International study (see Table 2 and Graph 2 of the presentation submitted by HEnEx S.A.), for the year 2020 in the case of Scenario 4 (A% equal to 20%) the liquidity ratio of the Day-Ahead Market is higher than 50%, while for the same Scenario 4, limited cuts are observed (these cuts are an additional indicator of declining liquidity) of RES price-taking injections only during the year 2022;
- that, ECCO International, taking into account the results of the above study, concluded that the maximum FHR limit (percentage of A%) should be between 10% and 20% and in no case should exceed 20%;
- the time needed for the preparation of the ECCO International study and subsequent developments (namely, the ratification of the National Energy and Climate Plan, the final plan for the withdrawal of lignite plants, the evolution of fuel and CO₂ costs, the adoption of a series of regulatory decisions, which further specify the regulatory framework of the new Markets), which may substantially affect the results of this study;
- that, in proportion, competition and liquidity conditions and market signals may be affected, to the extent of the interest in market participation , not only by the dominant player but also by other participants whose ability to apply similar practices may affect the overall effectiveness of the market;
- that, in the medium to long term, on the one hand, the degree of dependence of the revenues of RES units on the level of the liquidation price of the Day-Ahead Market will continue to be high and on the other hand, the penetration of RES into the generation mix will be increasing;
- that in the near future, withdrawal policies for lignite production will be implemented, which will diversify the portfolio mix of vertical producers, the corresponding costs and respectively the strategies for concluding derivatives contracts and undertaking physical delivery;
- that, the selected settings should be developed gradually and the transition time can be used for the qualitative and quantitative evaluation of the technical and regulatory changes based on the actual market data;

- that, the operation of the Derivatives Market with sufficient liquidity will allow Participants to mitigate price risk, allowing them to "lock in" the prices of the quantities they contract, thus limiting their exposure to more volatile prices of the Day-Ahead Market and the Intra-Day Market, while at the same time transactions in Derivatives Market will strengthen long-term system design activities, such as investments in Production, Transportation, Distribution and Demand Management, indicating future expectations of hourly market prices and providing reliable financial reference signals to the Participants;

the Authority, in terms of the prices of the percentages X% and A% for the year 2020 – and specifically from the start of operation of the new markets until December 2020 – on the one hand, accepts the percentage X% to receive the value of 4%, meaning to be applied to all vertically supplied suppliers, according to the proposal of HEnEx S.A., on the other hand, it considers reasonable for A% to receive the value of 20%.

Decides:

Within the frame of its duties, subject to article 18, par. 6 of L. 4425/2016, and the provisions of sub-sections 4.4.2.2 of the Day-Ahead and Intra-Day Market Rulebook, as applying:

1. The definition, for the year 2020 and specifically from the start of operation of the new markets until December 2020, of the percentage A% to 20%.
2. The definition, for the year 2020 and specifically from the start of operation of the new markets until December 2020, of the percentage X% - which is the percentage corresponding to the Supply share of each Supplier, to which the restriction A% applies - at 4%.
3. The Supply share, X%, of each Supplier to be calculated on a monthly basis, taking into account the formed total position of Sells and Buys (for Position Correction) of the Supplier r in the Day-Ahead Market and in the Intra-Day Market, during the month of Physical Delivery m-1 for represented consumers in Load Portfolios of Bidding Zone z, and after the announcement of the Day-Ahead Market Results for the first day of physical delivery d of the month m, as follows:

$$X_{r,m,z} = \frac{\sum_{t=1}^T [BQ_{r,z,t} - SQ_{r,z,t}]}{\sum_{r=1}^R \sum_{t=1}^T [BQ_{r,z,t} - SQ_{r,z,t}]}$$

Wherein:

$BQ_{r,z,t}$ The total quantities of the Supplier's transactions r for buying energy in the Day-Ahead Market and the Intra-Day Market, for the Market Time Unit t of month m-1 in Load Portfolios of Bidding Zone z, at MWh, excluding the quantities of transactions corresponding to Pumping Units;

$SQ_{r,z,t}$ The total quantities of the Supplier's transactions r for selling energy in the Day-Ahead Market and the Intra-Day Market, for the Market Time

Unit t of month $m-1$ in Load Portfolios of Bidding Zone z , at MWh, excluding the quantities of transactions corresponding to Pumping Units;

T The total / number of Market Time Units of month $m-1$.

R The total / number of Suppliers R that participated in the Day-Ahead Market and the Intra-Day Market during month $m-1$.

4. In particular, for the month in which the operation of the Day-Ahead Market will commence, the Supply share, $X\%$, for every Supplier will be calculated on the basis of the Load Declarations that were entered in the DAS, during the immediately preceding month.
5. The results of the above calculations should be sent on a monthly basis to RAE.
6. The entry into force of this decision from the day of commencement of operation of the Day-Ahead Market

This Decision is notified to the company "Hellenic Energy Exchange S.A.", posted on the official website of RAE and published in the Government Gazette (GG).

Athens, 18th of June 2020

The President of RAE

Dr. Nikolaos G. Boulaxis

by deputy Michaela Latta

B' Vice-President of RAE