



# BALANCING MARKET RULEBOOK

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# SECTION I

## GENERAL PROVISIONS

### CHAPTER 1

#### OBJECTIVE OF THE BALANCING MARKET RULEBOOK

##### Article 1.      **Balancing market**

1. The Balancing Market is governed by the applicable law, including the principles and provisions of Laws 4001/2011 and 4425/2016 and Regulation (EU) 2017/2195, as in force each time.
2. The Balancing Market consists of the Balancing Capacity Market, the Balancing Energy Market and the Imbalance Settlement.
3. The Balancing Service Providers submit Balancing Energy Offers and Balancing Capacity Offers to the Balancing Market on behalf of the Balancing Service Entities they represent.
4. In the context of the Balancing Market, the HETS Operator executes the Integrated Scheduling Process (ISP) for the commitment (synchronization) or de-commitment (desynchronization) of Balancing Service Entities and for the commitment of Balancing Capacity as described in SECTION II of this Rulebook.
5. The HETS Operator operates the Balancing Energy Market for the activation of Balancing Energy Offers for manual and automatic FRR and issues manual and automatic FRR Dispatch Instructions to Balancing Service Entities, as described in SECTION III of this Rulebook.
6. The Balancing Market operates throughout the year, for each calendar day.

##### Article 2.      **Balancing Market Rulebook**

1. The Balancing Market Rulebook is adopted in line with the provisions of Articles 17 and 18 of Law 4425/2016.
2. The aim of the Balancing Market Rulebook is to define the terms and conditions for the operation of the Balancing Market and in particular to:
  - a) designate the Participants in the Balancing Market and describe the relevant registration procedure.
  - b) set out detailed rules and conditions under which Participants may participate in the Balancing Market, including their rights and obligations, and determine the procedures that shall apply to the settlement of disputes between the Participants and the HETS Operator,
  - c) define the rights and obligations of the HETS Operator vis-à-vis the Participants in connection to their participation in the Balancing Market,



- d) describe the interface between the Balancing Market, the Day-Ahead Market and the Intra-Day Market, including the exchange of information between the Power Exchange and the HETS Operator,
  - e) set out detailed rules for the validation of Balancing Energy Offers and Balancing Capacity Offers by the HETS Operator,
  - f) describe the input data, the operation, and the results of the Integrated Scheduling Process,
  - g) describe the interface between the Integrated Scheduling Process and the Energy Balancing Market,
  - h) describe the input data, the operation and the results of the Energy Balancing Market,
  - i) define the accounts kept by the HETS Operator for the purposes of the Balancing Market Settlement,
  - j) determine the penalties for the Participants in the event of non-compliance with the provisions of this Rulebook,
  - k) define the Balancing Market Settlement procedure,
  - l) define the procedure for exchanging information with other stakeholders,
  - m) specify the reporting and monitoring obligations of the HETS Operator in relation to the Balancing Market, and
  - n) define the procedures for the protection of commercially sensitive information.
3. Unless otherwise defined, all capitalized terms used in this Rulebook shall have the meaning specified in Article 3 of this Rulebook.
  4. This Rulebook shall be amended upon recommendation by the HETS Operator, which shall be approved by RAE following a public consultation conducted by the Authority, and shall be published in the Government Gazette in accordance with the provisions of Article 17(2)(p) of Law 4425/2016. The amendment process can also start at the initiative of RAE. The new text of the Rulebook, as amended each time, shall be published in a consolidated version on the website of the HETS Operator. The body of the consolidated text shall indicate the amendments, the conditions of validity thereof and any other point that facilitates public information. This codification is informal and shall in no case take precedence over the above texts as approved by RAE and published in the Government Gazette.
  5. Any amendment to this Rulebook shall automatically govern the applicable Balancing Service Contract concluded between the HETS Operator and the registered Balancing Service Provider, and the applicable Balance Responsible Party Contract concluded between the HETS Operator and the registered Balance Responsible Party, without the need for the registered Balancing Service Provider / the Balance Responsible Party to take any action and without prejudice to the right of the registered Balancing Service Provider or the registered Balance Responsible Party to request the termination of the Balancing Service Contract or the Balance Responsible Party Contract, as stipulated in Article 7 of this Rulebook.
  6. The Balancing Market Rulebook is supplemented by methodologies, parameters and other specific approvals foreseen therein and decided by the Regulatory Authority for Energy (RAE), upon recommendation by the HETS Operator, and published in the Government Gazette in accordance with Article 18(4) of Law 4425/2016.

7. For an effective implementation of the provisions of the Balancing Market Rulebook, the HETS Operator may issue Technical Decisions to specify the details of technical issues of a non-regulatory nature. The Technical Decisions shall be issued following public consultation and shall be posted on the website of the HETS Operator. The HETS Operator shall send RAE the drafts of the Technical Decisions to be submitted to public consultation as well as the approved Technical Decisions. In the event of any contradiction between the provisions of this Rulebook and the corresponding Technical Decisions, the provisions of this Rulebook shall prevail.
8. Technical Decisions shall be amended by decision of the HETS Operator either on its own initiative or at the request of RAE or of third parties that have a legitimate interest, pursuant to the procedure of the preceding paragraph.
9. Prior to the implementation of the target-model of the European Union for the internal electricity market, the HETS Operator shall submit to RAE the methodologies, parameters and other special approvals provided for in this Rulebook, which shall be approved in accordance with Article 18 par. 4 of Law 4425/2016.
10. The Participants shall be liable to the HETS Operator for the timely and full performance of their obligations under this Rulebook and for the completeness and accuracy of the information and data submitted to the HETS Operator. This liability includes any act or omission of their representative bodies, their servants, their agents and, in particular, of the persons they use for the performance of their obligations under this Rulebook.
11. The HETS Operator shall not be liable to the Participants for the performance of the actions set out in this Rulebook, unless it has acted with malice or gross negligence. The HETS Operator shall take the appropriate measures to prevent any operational issues in the systems it manages and shall try to restore any failure or malfunction, as soon as possible.

### **Article 3. Definitions**

Apart from the definitions contained in the current legislation, and, in particular, in Law 4425/2016 and Law 4001/2011, in Union legislation, in the Day-Ahead & Intra-Day Markets Trading Rulebook, in the Clearing Rulebook for Balancing Market Positions and in the HETS Grid Code, the terms below, whether stated in the singular or plural, shall have the following meaning, for the purpose of implementation of this Rulebook.

1. **Energy Balancing Market:** It shall have the meaning of Article 5(l) of Law 4425/2016, i.e. the market where Participants offer electricity, which is used by the HETS Operator to maintain the System frequency within a predetermined range, as well as the balance between electricity generation and demand, while observing the electricity exchange programs with neighbouring countries.
2. **Balancing Market:** It shall have the meaning of Article 5(j) of Law 4425/2016, i.e. the Electricity Balancing Market, which includes the Balancing Capacity and Balancing Energy Markets and the Imbalance Settlement procedure.
3. **Day-Ahead Market:** It shall have the meaning of Article 5(g) of Law 4425/2016, i.e., the Electricity Market, in which electricity purchase and sale transactions are performed with the obligation of physical delivery on the day ahead (Delivery Day) and in which the transactions performed on Energy Financial Instruments with physical delivery are declared.

4. **Balancing Capacity Market:** It shall have the meaning of Article 5(k) of Law 4425/2016, i.e. the market in which capacity is offered to cover the System's reserve requirements, which (capacity) is retained by the Participants for a predetermined period of time.
5. **Market Time Unit:** It shall have the meaning of Article 2(19) of Regulation (EU) 543/2013, i.e. the period for which the market price is established or the shortest possible common time period for the two bidding zones, if their market time units are different.
6. **Trading License:** The license granted to carry out the activity of electricity trading.
7. **Production License:** The license granted to carry out the activity of electricity generation.
8. **Supply License:** The license granted to carry out the activity of electricity supply.
9. **RES Aggregator License:** The license granted to carry out the activity of representing RES electricity producers in accordance with Article 13 of Law 4001/2011.
10. **Direct Clearing Member:** The Clearing Member, as defined in the Clearing Rulebook for Balancing Market Positions, which participates in the clearing procedures of the Clearing House and is responsible for the fulfillment of obligations arising from the Positions it represents in accordance with the Clearing Rulebook for Positions on Balancing Market.
11. **Upward Balancing Energy:** The Balancing Energy that corresponds to more generated energy or less consumed energy in relation to the Market Schedule.
12. **Balancing Capacity Offer Maximum Price:** The upper limit on the pricing of Balancing Capacity Offers, which is imposed for technical reasons, in accordance with Article 51 of this Rulebook.
13. **Balancing Energy Offer Maximum Price:** The upper limit on the pricing of Balancing Energy Offers, which is imposed for technical reasons, in accordance with Article 55 of this Rulebook.
14. **Safety Maximum Reservoir Level:** The maximum level per reservoir, above which the owners of Dispatchable Hydro Generating Units connected to the Reservoir may submit mandatory hydro injection declarations for the above Units to avoid overflow.
15. **Force Majeure:** It shall have the meaning referred to in Article 26 of this Rulebook.
16. **Imbalance:** It shall have the meaning of Article 2(8) of Regulation (EU) 2017/2195, i.e. the energy volume calculated for a Balance Responsible Party and representing the difference between the allocated volume attributed to that Balance Responsible Party and the final position (Market Schedule) of that Balance Responsible Party, including any imbalance adjustment applied to that Balance Responsible Party, within a given Imbalance Settlement Period.
17. **Initial Settlement:** It shall have the meaning of Settlement specified in Article 107(2), of this Rulebook.
18. **Auto-producer:** It shall have the meaning of Article 2, paragraph 3(e) of Law 4001/2011, i.e. the producer that generates electricity mainly for its own use and injects any surplus energy into the transmission system or the distribution network.
19. **Self-Supplied customer:** It shall have the meaning of Article 5(1)(o) of Law 4425/2016, i.e. the natural or legal person that chooses to purchase energy directly from the Energy Markets for its own exclusive use.

20. Automatic Generation Control (AGC): The automatic load-frequency control procedure, which aims to reduce the frequency restoration control error to zero in accordance with the provisions of Regulation (EU) 2017/1485.
21. RES Producer Certificate: The certificate provided for in Law 4685/2020.
22. General Clearing Member: The Clearing Member, as defined in the Clearing Rulebook for Balancing Market Positions, which participates in the settlement procedures of the Clearing House and is responsible for the fulfillment of obligations arising from the Balancing Market Positions of contracted Participants or the HETS Operator in accordance with the above Rulebook.
23. Declared Characteristics: The characteristics defined as a combination of the following technical and operational elements of the Balancing Service Entity and constitute the actual technical capacity of the Balancing Service Entity for a specific Dispatch Period and Dispatch Day: (a) Registered Characteristics, (b) Techno-Economic Declaration, (c) Non-Availability Declaration (total or partial), and (d) Major Outage Declaration.
24. Major Outage Declarations: The declarations submitted by the Balancing Service Providers pursuant to Article 48 of this Rulebook.
25. Non-Availability Declarations: The declarations submitted by Balancing Service Providers pursuant to Article 47 of this Rulebook for each Dispatch Day during which the Available Capacity for a Balancing Service Entity is reduced.
26. Techno-Economic Declarations: The declarations submitted by Balancing Service Providers for each Dispatch Day pursuant to Article 44 of this Rulebook regarding the techno-economic data of the Balancing Service Entities they represent.
27. Integrated Scheduling Process (ISP): It shall have the meaning of Article 2(19) of Regulation (EU) 2017/2195, i.e. an iterative process that uses at least integrated scheduling process bids that contain commercial data, complex technical data of individual power generating facilities or demand facilities and explicitly includes the start-up characteristics, the latest control area adequacy analysis and the operational security limits as an input to the process.
28. Inter-Zonal Corridor: A virtual link between two Bidding Zones, which is used to model the flow between the Bidding Zones.
29. Available Capacity: The capacity of the Balancing Service Entity as per Article 43 of this Rulebook.
30. RES and Guarantees of Origin Operator (DAPEEP): The public limited company provided for in Article 118 of Law 4001/2011.
31. Settlement or Cash Settlement: The process implemented by the Clearing House for the fulfillment of cash obligations and the collection of the corresponding claims from the Clearing of Positions and Non-Compliance Charges in accordance with this Rulebook and the terms of the Clearing Rulebook for Balancing Market Positions.
32. Distribution Network Operator: It shall have the meaning of Article 2(3)(j) of Law 4001/2011, i.e. the legal person exercising, under the provisions of Law 4001/2011, the duties of an Electricity or Natural Gas Distribution Network Operator, including the Operators of the Closed Electricity or Natural Gas Distribution Networks.
33. Hellenic Electricity Distribution Network Operator (HEDNO): The public limited company provided for in Article 123 of Law 4001/2011.

34. HETS Operator: The public limited company provided for in Article 97 of Law 4001/2011.
35. Corrective Settlement: It shall have the meaning of Settlement specified in paragraph 3, Article 107 of this Rulebook.
36. Testing operation: The status of a Balancing Service Entity, which is registered in the HETS Operator Registry, during tests or operational controls.
37. Commissioning operation: The status of a pre-registered Balancing Service Entity in the course of the tests or operational controls that are conducted for its connection to the HETS, as set out in the connection contract and the relevant provisions of the HETS Grid Code, so that it can be registered in the HETS Operator Registry.
38. Imbalance Settlement: It shall have the meaning of Article 2(9) of Regulation (EU) 2017/2195, i.e. a financial settlement mechanism for charging or paying Balance Responsible Parties for their Imbalances.
39. Clearing of Positions: The processes of notification of Positions by the HETS Operator to the Clearing House and their finalization by the Clearing House, calculation of net cash obligations and claims arising from the Positions, valuation of collateral, calculation and coverage of Margin requirements, as well as the announcement of Clearing results to Clearing Members, management of the Clearing Capital, management of cases of defaulting Clearing Members and any other similar issue in relation to credit risk management as set out in the Clearing Rulebook for Balancing Market Positions.
40. Balancing Market Settlement: The transparent calculation of the quantities of Balancing Energy and Balancing Capacity and the relevant Imbalances, and the calculation of the monetary value of the debits and credits to Participants, as detailed in Article 76 of this Rulebook.
41. Clearing Member: An undertaking, as defined in the Clearing Rulebook for Balancing Market Positions, which participates in the Clearing House System for the clearing of the Positions it represents and is responsible to the Clearing House for the fulfillment of cash obligations arising from the relevant Positions in accordance with the provisions of Law 4425/2016 and the provisions specified in the above Rulebook.
42. Load Representative: Balance Responsible Parties representing Entities that offtake energy from the HETS or the electricity Distribution network, other than Demand Response Aggregators.
43. Trader: The natural or legal person that performs the energy activity of electricity trading, as stipulated in Law 4001/2011.
44. Minimum Available Capacity: The capacity defined in Article 43 of this Rulebook.
45. Safety Minimum Reservoir Level: The minimum level per reservoir, above which the Dispatchable Hydro Generating Units Providers connected to the Reservoir may submit declarations of maximum daily energy injection constraint for the above Units.
46. Minimum up time: It is the minimum time of operation, as set out in the Registered Characteristics of the Balancing Service Entity, between a start-up and the next shut-down.
47. Minimum down time: It is the minimum time of operation, as set out in the Registered Characteristics of the Balancing Service Entity, between a shut-down and the next start-up.
48. Balancing Energy: The energy provided by a Balancing Service Provider and used by the HETS Operator to make a balance, i.e. to cover the generation/demand imbalances. It is divided into Upward and Downward Balancing Energy.



49. Priority Price-Taking (Sell/Buy) Orders: The priority price-taking (sell/buy) orders are one-step Hourly Hybrid (sell/buy) Orders that are submitted to the Day-Ahead Market and the Intra-Day Market (Intra-day Auctions), at a price equal to the highest/lowest acceptable price, namely at the Market Order Upper/Lower Price that applies to each of the above Markets.
50. Dispatch Instruction: The instruction issued by the HETS Operator, determining active power generation, active power increase or decrease, synchronization or desynchronization, provision of reserves and other Ancillary Services and, in general, the mode of operation of Balancing Service Entities.
51. Ancillary Service: It shall have the meaning of Article 2(3)(q) of Law 4001/2011, i.e. a service necessary for the operation of a transmission or distribution system, such as voltage control, frequency control, provision of reserves, provision of reactive power, Transmission System black start and load fluctuation monitoring.
52. Frequency Restoration Reserve (FRR): It shall have the meaning of Article 3(7) of Regulation (EU) 2017/1485, that is, the active power reserves available to restore system frequency to the nominal frequency and, for a synchronous area consisting of more than one load frequency control area, to restore power balance to the scheduled value. It is divided into FRR with automatic activation and FRR with manual activation (automatic and manual FRR).
53. Frequency Containment Reserve (FCR): It shall have the meaning of Article 3(6) of Regulation (EU) 2017/1485, that is, the active power reserves available to contain system frequency after the occurrence of an imbalance.
54. Reliability Year: The period of time starting on 1st October of a calendar year and ending on 30th September of the following calendar year.
55. Bidding Zone: Bidding zone is defined under Article 2(3) of Regulation (EU) 543/2013, i.e. the largest geographical area within which market participants are able to exchange energy without capacity allocation. The Bidding Zones are approved by decision of RAE, upon recommendation by the Transmission System Operator, following a relevant study as provided for in the HETS Grid Code.
56. Physical Delivery Day: It shall have the meaning of Article 5(f) of Law 4425/2016, that is, the day on which the quantities of energy traded on the Electricity Markets are delivered.
57. Dispatch Day: It has the meaning specified in Article 36 of this Rulebook, that is, the day to which the ISP refers, which coincides with the Physical Delivery Day of the Day-Ahead Market and the Intra-Day Market. Dispatch Day D starts at 01:00 EET of calendar day D and ends at 01:00 EET of calendar day D +1.
58. Termination Date: The date referred to in Article 7, paragraph 3 of this Rulebook.
59. Positions: The cash claims and the corresponding obligations of the Participants and the HETS Operator arising in relation to the Balancing Market, excluding Non-Compliance Charges, as calculated by the HETS Operator in accordance with Article 76 of this Rulebook and entered into the Clearing House system on the basis of the relevant notifications to the HETS Operator, under the terms of the Clearing Rulebook for Balancing Market Positions.
60. Balancing Capacity: A volume of reserve capacity that a Balancing Service Provider has agreed to hold in each Dispatch Period and in respect to which the Balancing Service

- Provider has agreed to submit bids to the HETS Operator for a corresponding volume of Balancing Energy for the duration of the contract.
61. Downward Balancing Energy: The Balancing Energy that corresponds to less generated energy or more consumed energy in relation to the Market Schedule.
  62. Clearing Rulebook for Balancing Market Positions: The Rulebook issued by the Clearing House and approved by RAE in accordance with article 13(2) of Law 4425/2016.
  63. Consumer: It shall have the meaning of Article 2(n) of Law 4001/2011, i.e., electricity Customers, excluding Natural Gas System and Distribution Network Operators, as well as Electricity Transmission System or Distribution Network Operators.
  64. Dispatchable Generating Units: The power generating units with a valid production license, which are located on the mainland or on the interconnected islands, have made and activated a connection to HETS, have submitted an operating license and have an installed capacity over 5 MW, for which the HETS Operator may issue Dispatch Instructions, provided they are not RES Units, Emergency Reserve Units, and only during the period for which an Ancillary Service Contract or a Supplementary System Energy Contract is not in force or is not implemented, in accordance with the HETS Grid Code.
  65. Dispatchable Generating Units with Alternative Fuel: Dispatchable Generating Units having the obligation or the ability to operate both with primary and alternative fuels.
  66. Dispatchable HECHP Units: Partial cogeneration units with an installed capacity over 35 MWe which, by decision of RAE, have been designated as Dispatchable High Efficiency CHP Units.
  67. Multi-Shaft Combined Cycle Dispatchable Generating Units: Combined Cycle Dispatchable Generating Units in which gas turbines and steam turbines are located on different axes and are connected to distinct generators.
  68. Emergency Situation: The Situation described in the HETS Grid Code.
  69. Registered Characteristics: The technical and operational characteristics of Balancing Service Entities that remain stable every Dispatch Day, unless modified by the Balancing Service Providers. They are submitted as provided for in the HETS Grid Code.
  70. Balancing Energy Offer Minimum Price: The lower limit on the pricing of Balancing Energy Offers, which is imposed for technical reasons, in accordance with Article 55 of this Rulebook.
  71. Balancing Capacity Offer Minimum Price: The lower limit on the pricing of Balancing Capacity Offers, which is imposed for technical reasons, in accordance with Article 51 of this Rulebook.
  72. HETS Grid Code: The Code specified in Article 96 of Law 4001/2011.
  73. Maximum Available Capacity: The capacity defined in Article 43 of this Rulebook.
  74. Maximum Net Capacity: The maximum level of capacity that a Balancing Service Entity can maintain for any period of time, provided that it operates under ISO conditions, it is not constrained by any equipment, technical or other limitations pertaining to the institutional or financial framework governing the Entity's operation, and that the internal service, as well as any other auxiliary load have been taken into consideration.

75. Maximum Net Capacity in AGC mode: It is the Maximum Net Capacity of the Entity while operating under Automatic Generation Control (AGC). It is expressed in MW. The Maximum Net Capacity in AGC mode cannot exceed the Maximum Net Capacity.
76. Maximum contribution to FCR: It is the technical capacity of a Balancing Service Entity to offer Frequency Containment Reserve, as derived from the test results and specified in the Registered Characteristics. It is defined separately for upward and downward Frequency Containment Reserve. It is expressed in MW.
77. Maximum contribution to automatic FRR: It is the technical capacity of a Balancing Service Entity to offer automatic Frequency Restoration Reserve, as derived from the test results and specified in the Registered Characteristics. It is defined separately for upward and downward automatic Frequency Restoration Reserve. It is expressed in MW.
78. Maximum contribution to manual FRR: It is the technical capacity of a Balancing Service Entity to offer manual Frequency Restoration Reserve, as derived from the test results and specified in the Registered Characteristics. It is defined separately for upward and downward manual Frequency Restoration Reserve. It is expressed in MW.
79. HETS Operator Registry: The Registry provided for in Article 4 of this Rulebook.
80. Balancing Market Generating Units Registry: The Registry provided for in Article 11 of this Rulebook.
81. Balancing Service Providers Registry: The Registry provided for in Article 5 of this Rulebook.
82. Balance Responsible Parties Registry: The Registry provided for in Article 5 of this Regulation.
83. Dispatchable RES Units Portfolio Registry: The Registry provided for in Article 12 of this Regulation.
84. Dispatchable Load Portfolio Registry: The Registry provided for in Article 13 of this Rulebook.
85. RES Unit: A unit generating electricity from Renewable Energy Sources (RES) as defined in Law 3468/2006.
86. RES Units with Market Participation Obligation: The RES Units for which a Contract for Differential State Aid Support has been concluded in accordance with the provisions of Law 4414/2016 as well as the RES Units covered by the provisions of Article 3 (19) and article 12A of Law 4414/2016.
87. RES Units without Market Participation Obligation: The RES units for which a Feed-in Tariff Agreement has been concluded in accordance with the provisions of Law 4414/2016, as well as the RES Units for which a Power Purchase Agreement has been concluded in accordance with the provisions of Article 12 of Law 3468/2006 or a similar electricity purchase and sale agreement prior to the entry into force of Law 3468/2006.
88. Balance Responsible Entities: The entities represented by Balance Responsible Parties in accordance with Article 10 of this Rulebook.
89. Balancing Service Entities: The units or portfolios that are capable of providing Balancing Services to the HETS Operator and are represented by the Balancing Service Providers in accordance with Article 10 of this Rulebook.



90. Final Settlement: It shall have the meaning of Settlement as laid down in paragraphs 4 and 6, of this Rulebook.
91. Producer: The holder of a Production License or a relevant exemption from the obligation to obtain a Production License.
92. Balancing Service Provider (BSP): It shall have the meaning of Article 23(8) of Regulation (EU) 2017/2195, i.e. a market Participant with units or portfolios able to provide Balancing Services to the HETS Operator.
93. Imbalance Settlement Period: The time unit for which the Imbalance of the Balance Responsible Parties is calculated.
94. Dispatch Period: It shall have the meaning specified in Article 36 of this Rulebook, that is, a period of time that lasts for half an hour. The first Dispatch Period of Dispatch Day D is 01:00 – 01:30 EET.
95. Market Schedule: The net energy schedule (net position) resulting from all transactions of the entity on the wholesale market (i.e. transactions on the Energy Financial Market, the Day-Ahead Market or the Intra-Day Market) as defined in the Day-Ahead Market & Intra-Day Market Trading Rulebook.
96. ISP Schedule: The indicative generation/consumption schedule for each Balancing Service Entity and for each Dispatch Period of the Dispatch Day as it derives from the ISP solution system.
97. Supplier: The natural or legal person that performs the energy activity of electricity Supply, as stipulated in Law 4001/2011.
98. Default Supplier: The electricity Supplier as defined in article 58 of Law 4001/2011.
99. Supplier of Last Resort: The electricity Supplier as defined in article 57 of Law 4001/2011.
100. Adjusted Dispatch Instruction: The Dispatch Instruction modified in such a way as to take into account the availability of the Balancing Service Entity as laid down in the “Activated Balancing Energy Calculation Methodology”.
101. Balancing Energy Deficit Premium: A price determined by Decision of RAE, which provides a premium on top of the manual FRR Upward Balancing Energy Price, if during an Imbalance Settlement Period energy from Contracted Generating Units or Supplementary Energy from Emergency Imports was injected or Load Cuts were performed.
102. Balancing Energy Offer: A Balancing Energy Offer corresponds to the intention to provide upward or downward Balancing Energy in relation to the Market Schedule of the respective Balancing Service Entity. Balancing Energy Offers are described in Article 54 of this Rulebook.
103. Balancing Capacity Offer: A Balancing Capacity Offer corresponds to the intention to provide reserves for Reserve Capacity products. Balancing Capacity Offers are described in Article 50 of this Rulebook.
104. Ramp Up Rate: The rate of increase of the active power of a Balancing Service Entity, expressed in MW/min, when the Entity is committed and not in the start up or shut down phase.

105. Ramp Down Rate: The rate of decrease of the active power of a Balancing Service Entity, expressed in MW/min, when the Entity is committed and not in the start up or shut down phase.
106. Ramp Up Rate in AGC mode: The rate of increase of the active power of a Balancing Service Entity, expressed in MW/min, when operating under AGC.
107. Ramp Down Rate in AGC mode: The rate of decrease of the active power of a Balancing Service Entity, expressed in MW/min, when operating under AGC.
108. Balance Responsible Party (BRP): It shall have the meaning specified in Article 23(7) of Regulation (EU) 2017/2195, i.e. a Market Participant or its chosen representative responsible for its imbalances.
109. Balancing Service Contract: The contract concluded with the HETS Operator upon registration of the Participants in the Balancing Service Providers Registry, in accordance with Article 5 of this Rulebook.
110. Balance Responsible Party Contract: The contract concluded with the HETS Operator upon registration of the Participants in the Balance Responsible Parties Registry, in accordance with Article 5 of this Rulebook.
111. HETS Operator Transactions Contract: The contract between the HETS Operator and the Participants registered in the HETS Operator Registry, which is concluded as provided for in the HETS Grid Code.
112. Contracted Generating Units: The Dispatchable Generating Units that have concluded Supplementary System Energy Contracts or Ancillary Services Contracts with the HETS Operator in accordance with the HETS Code.
113. Participant: The participant in the Balancing Market, either as a Balancing Service Provider or as a Balance Responsible Party.
114. Supplementary Settlements: The Corrective Settlement or the Final Settlements.
115. Supplementary Energy from Emergency Imports: It shall have the meaning specified in the HETS Grid Code, i.e. the active power quantity which the System Operator is responsible for providing to the System in order to cover the needs in Supplementary System Energy.
116. Balancing Market System: A system that performs all the processes and all the necessary calculations, and records all the data and the results of the Balancing Market in terms of ISP, Balancing Energy Market and Balancing Market Settlement. The Balancing Market System is described in Article 14 of this Rulebook.
117. Emergency Plan: It means a plan that is drawn up in accordance with Article 73 of Law 4001/2011.
118. Technical Decisions: The technical decisions provided for in Article 18 of Law 4425/2016 and Annex I of this Rulebook.
119. Technically Minimum Generation: The minimum level of capacity that a Balancing Service Entity can maintain for any period of time, provided that it operates under ISO conditions, it is not constrained by any equipment, technical or other limitations pertaining to the institutional or financial framework governing the Entity's operation, and provided that the internal service and any other auxiliary load have been taken into consideration.
120. Technically Minimum Generation under Automatic Generation Control (AGC): The Technically Minimum Generation of an Entity when it is operating under Automatic

- Generation Control (AGC). It is expressed in MW. Technically Minimum Generation under Automatic Generation Control (AGC) may be higher or equal to Technically Minimum Generation.
121. Manual FRR Upward Balancing Energy Price: The price calculated in accordance with Article 85 of this Rulebook, based on which the Balancing Service Providers that provide Manual FRR Upward Balancing Energy are remunerated.
  122. Imbalance Price: The price calculated in accordance with Article 88 of this Rulebook based on which Balance Responsible Parties are charged or credited for their respective imbalances.
  123. Manual FRR Downward Balancing Energy Price: The price calculated in accordance with Article 85 of this Rulebook based on which the Balancing Service Providers that provide Manual FRR Downward Balancing Energy are remunerated.
  124. Balancing Services: They must be interpreted according to the meaning of Article 2(3) of Regulation (EU) 2017/2195, i.e. Balancing Energy or Balancing Capacity, or both.
  125. Clearing House: It shall have the meaning of Article 2(p) of Law 4425/2016.
  126. RES Aggregator: It shall have the meaning of Article 2 (22) of Law 4414/2016.
  127. Last Resort RES Aggregator: It shall have the meaning of Article 2 (23) of Law 4414/2016.
  128. Demand Response Aggregator: It shall have the meaning of Article 5(2)(o) of Law 4425/2016.
  129. Dispatchable Load Portfolio Baseline: A load calculated by the HETS Operator, which corresponds to the electricity that would have been consumed by the Dispatchable Load Portfolio if it hadn't received a Dispatch Instruction to activate a Balancing Energy Offer.
  130. Physical Transmission Right: The right ascribed to the holder for physical delivery of a specific quantity of electricity within a specified time unit between two bidding zones and in a specific direction.
  131. Dispatchable Load Portfolio: A load portfolio, that includes one or more loads which are connected to a specific Bidding Zone and which, based on their technical capacity, offer Balancing Services to the HETS Operator. A Dispatchable Load Portfolio shall be represented by a Demand Response Aggregator. A Dispatchable Load Portfolio that includes only one load can be represented by one Consumer. Each Pumped Storage Hydro Generating Unit shall be a distinct Dispatchable Load Portfolio and shall be represented by one Producer.
  132. Non-Dispatchable Load Portfolio: A load portfolio that includes one or more loads which are connected to a specific Bidding Zone and which do not offer Balancing Services to the HETS Operator. Each Non-Dispatchable Load Portfolio shall be represented by one Supplier or one Consumer.
  133. RES Units Portfolio without Market Participation Obligation: The RES Units Portfolio for which either a Feed-in Tariff Agreement has been concluded in accordance with the provisions of Law 4414/2016, or a Power Purchase Agreement has been concluded in accordance with the provisions of Article 12 of Law 3468/2006 or a similar electricity purchase and sale agreement prior to the entry into force of Law 3468/2006, which (Units) are connected to a specific Bidding Zone. RES Units Portfolios without Market Participation Obligation shall be represented by DAPEEP. DAPEEP has balancing responsibility for the RES Units Portfolios without Market Participation Obligation.

134. Dispatchable RES Units Portfolio: The RES units portfolio, that includes one or more RES Units with Market Participation Obligation which are connected to a specific Bidding Zone and which, based on their technical capacity, offer Balancing Services to the HETS Operator. A Dispatchable RES Units Portfolio shall be represented by one RES Producer or by one RES Aggregator.
135. Non-Dispatchable RES Units Portfolio: The RES units portfolio, that includes one or more RES units with Market Participation Obligation connected to a particular Bidding Zone and which do not offer Balancing Services to the HETS Operator. Each Non-Dispatchable RES Units Portfolio shall be represented by one RES Producer or by one RES Aggregator.
136. Non-Compliance Charges: The charges provided for in CHAPTER 21 of this Rulebook.
137. Power Exchange: A public limited company that manages one or more Energy Markets and/or Energy Financial Markets.

## **CHAPTER 2**

### **CONTRACTS AND REGISTRATION PROCEDURE**

#### **Article 4. HETS Operator Registry**

1. The HETS Operator keeps the HETS Operator Registry, which consists of the following individual Registries:
  - a) the Balancing Service Providers Registry in accordance with Article 5 of this Rulebook,
  - b) the Balance Responsible Parties Registry in accordance with Article 5 of this Rulebook,
  - c) the Balancing Market Generating Units Registry in accordance with Article 11 of this Rulebook,
  - d) the Dispatchable RES Units Portfolio Registry in accordance with Article 12 of this Rulebook, and
  - e) the Dispatchable Load Portfolio Registry in accordance with Article 13 of this Rulebook,
2. Upon registration in the HETS Operator Registry, the registrants expressly and unreservedly accept the provisions of this Rulebook and the HETS Grid Code and the Methodologies, parameters and other special approvals, Technical Decisions and Manuals issued in accordance therewith, as amended each time and in force, and they are bound to comply with their content.
3. For their registration in the HETS Operator Registry, the interested parties shall file an application as laid down in the procedure specified in Article 8 of this Rulebook and the Technical Decision “Procedure for registration in the HETS Operator Registry”.
4. The HETS Operator shall not be responsible for the completeness, correctness and trueness of the data provided by the Participants and entered in the HETS Operator Registry. The Participants are exclusively liable therefor.

**Article 5. Balancing Service Contract and Balance Responsible Party Contract**

1. Natural or legal persons, in one or more of the following capacities, shall be entitled to register in the Balancing Service Providers Registry kept by the HETS Operator, as long as they are able to provide Balancing Services:
  - a) Producer, holder of a Production License or a relevant exemption from the obligation of Production License issuance, as long as he/she owns a power generating unit with a valid production license in force, which is located on the mainland or on the interconnected islands and has an installed capacity over 5 MW,
  - b) RES Producer, holder of a RES Production License or a RES Producer Certificate or a relevant exemption from the obligation of a Production License Issuance, for RES Units with Market Participation Obligation, as long as he/she owns a RES unit and he/she is not represented by a RES Aggregator,
  - c) Auto-producer,
  - d) RES Aggregator, holder of a RES Aggregator License for RES Units with Market Participation Obligation,
  - e) Demand Response Aggregator, holder of a relevant license, and
  - f) Consumer, including Self-Supplied customers, providing demand response services, as long as they are not represented by a Demand Response Aggregator.

Registration in the Balancing Service Providers Registry is mandatory for producers under item (a).

2. For registration in the Balancing Service Providers Registry, the terms and conditions described in the “Terms and Conditions for Balancing Service Providers” must be fulfilled, as approved by decision of RAE following a recommendation by the Operator, as set out in article 18, par. 4 of Law 4425/2016.
3. Upon registration in the Balancing Service Providers Registry, the natural or legal persons of paragraph 1 of this Article (Balancing Service Providers) conclude a Balancing Service Contract with the HETS Operator, whose content is identical to the provisions of this Rulebook. The Balancing Service Contract is deemed as concluded between the parties upon registration in the Balancing Service Providers Registry and shall not be subject to any further formalities.
4. Natural or legal persons, in one or more of the following capacities, are obliged to be registered in the Balance Responsible Party Registry kept by the HETS Operator:
  - a) Producer, holder of a Production License or a relevant exemption from the obligation of Production License issuance, as long as he/she owns a power generating unit with a valid production license in force, which is located on the mainland or on the interconnected islands and has an installed capacity over 5MW,
  - b) RES Producer, holder of a RES Production License or a RES Producer Certificate or a relevant exemption from the obligation of a Production License Issuance, for RES Units with Market Participation Obligation, as long as he/she owns a RES unit and it is not represented by a RES Aggregator,
  - c) Auto-producer,

- d) RES Aggregator, holder of a RES Aggregator License for RES Units with Market Participation Obligation, including Last Resort RES Aggregator.
  - e) Demand Response Aggregator, holders of a relevant license,
  - f) Consumer, including Self-Supplied Customers, providing demand response services, as long as they are not represented by a Demand Response Aggregator,
  - g) Suppliers, holders of a Supply License, including Suppliers of Last Resort and Default Suppliers,
  - h) Self-Supplied customer,
  - i) Trader, holder of a Trading License, and
  - j) DAPEEP, which is the Operator of the RES Units Portfolio without Market Participation Obligation.
5. For registration in the Balance Responsible Parties Registry, the terms and conditions described in the “Terms and Conditions for Balancing Service Providers” must be fulfilled, as approved by decision of RAE following a recommendation by the Operator, as set out in article 18, par. 4 of Law 4425/2016.
  6. Upon registration in the Balance Responsible Parties Registry, the natural or legal persons of paragraph 4 of this Article (Balance Responsible Parties) conclude a Balance Responsible Parties Contract with the HETS Operator, whose content is identical to the provisions of this Rulebook. The Balance Responsible Party Contract is deemed as concluded between the parties upon registration in the Balance Responsible Parties Registry and shall not be subject to any further formalities.

#### **Article 6. Dispute Resolution**

1. In the event of a dispute between the parties in the Balancing Service / Balance Responsible Parties Contract, the HETS Operator and the registered Balancing Service Provider / registered Balance Responsible Party shall initially seek an amicable settlement by mutual consultation in accordance with paragraph 2. To that end, the party raising the dispute shall send a notice to the other party, stating:
  - a) the Balancing Service Contract or the Balance Responsible Parties Contract between the Parties,
  - b) the reason for the dispute, and
  - c) a request for a future meeting, with a view to the amicable settlement of the dispute.
2. The parties shall meet within twenty (20) business days from communication of the notice. The parties must conduct the consultations in good faith and in accordance with business conventions in order to settle the dispute. The results of the consultations shall be reflected in a report, which shall be signed by their representatives and shall be binding upon the parties.
3. If no agreement is reached or no response is received within thirty (30) business days from the date of the above request for a meeting, either party may refer the issue for resolution in accordance with paragraph 4 of this Article.
4. In the event that the dispute is not resolved through the amicable settlement process, the parties may refer the dispute to RAE, through the complaint procedure under Article 34 of Law 4001/2011, or on the basis of paragraph 8, article 5 of Regulation 2017/2195, or resort



to the process of resolution through arbitration, in accordance with the provisions of article 37 of Law 4001/2011 and the arbitration mechanism of RAE, or to another arbitration body or the competent courts. For the resolution of any dispute regarding the interpretation or the implementation of this Rulebook, the Greek law shall apply.

5. Recourse to amicable settlement, arbitration or litigation pursuant to this Article shall not relieve the parties of their duty to perform their obligations under this Rulebook and the Balancing Service Contract of the registered Balancing Service Provider or the Balance Responsible Party Contract of the registered Balance Responsible Party.
6. This Article shall also apply after the termination of the Balancing Service Contract of the registered Balancing Service Provider or the Balance Responsible Party Contract of the registered Balance Responsible Party.

#### **Article 7. Termination of the Balancing Service Contract or the Balance Responsible Party Contract**

1. The Balancing Service Contract / Balance Responsible Party Contract shall be dissolved by termination by one of the Parties, in accordance with the provisions of this Article.
2. Each Balancing Service Provider / Balance Responsible Party is entitled to terminate the Balancing Service Contract / Balance Responsible Party Contract at any time, provided that:
  - a) the Balancing Service Provider / Balance Responsible Party has no outstanding obligations (overdue or not) against the HETS Operator or the Clearing House that derive from this Rulebook or the HETS Grid Code or the Clearing Rulebook for Balancing Market Positions at the Termination Date specified in paragraph 3 of this Article, or in the event that no Clearing House operates in the Balancing Market, it does not have any outstanding obligations (overdue or not) against the HETS Operator that derive from this Rulebook or the HETS Grid Code at the Termination Date specified in paragraph 3 of this Article, and
  - b) the Balancing Service Provider / Balance Responsible Party has no obligation to participate in the Balancing Market, on the basis of this Rulebook.
3. In the case of paragraph 2 of this Article and subject to the conditions described therein, the termination shall be notified in writing through a bailiff, and shall enter into force and take effect after a period of thirty (30) business days from such notification to the HETS Operator or after the expiry of the period specified by the party that terminates the contract, which period cannot be less than thirty (30) business days from the date of notification ("Termination Date") under any circumstances. The termination shall enter into force as soon as the terminating party adduces a certificate from the Clearing House proving that it has no outstanding obligations, overdue or not, against the Clearing House that derive from this Rulebook. In the event that no Clearing House operates in the Balancing Market, the termination shall enter into force in accordance with the provisions of the first item of this paragraph.
4. The HETS operator may terminate the Balancing Service Contract / Balance Responsible Party Contract in the following cases:
  - a) if the registered Balancing Service Provider / registered Balance Responsible Party does not meet the conditions for the lawful exercise of an electricity activity and/or the conditions for participation in the Balancing Market, or

- b) if the registered Balancing Service Provider / registered Balance Responsible Party is in breach of its obligations against the Clearing House, or is subject to a measure on the basis of the Clearing Rulebook for Balancing Market Positions, and, in particular, to limitations regarding its participation in the Clearing of Positions and Cash Settlement procedures carried out by the Clearing House, to suspension of its capacity to act as a Clearing Member or deletion, or, in the event that no Clearing House operates in the Balancing Market, it hasn't submitted guarantees in accordance with Article 115 of this Rulebook or it has financial obligations against the HETS Operator deriving from this Rulebook that have fallen due, or
  - c) if the registered Balancing Service Provider / registered Balance Responsible Party has not submitted guarantees for the charges foreseen in the HETS Grid Code or it has financial obligations against the HETS Operator deriving from the HETS Grid Code that have fallen due, or
  - d) if the registered Balancing Service Provider / registered Balance Responsible Party has lost the capacity to act as a Clearing Member or if is not on a contract with a General Clearing Member for the settlement of the cash claims and obligations it may have in accordance with the provisions in the Clearing Rulebook for Balancing Market Positions.
5. The HETS operator may terminate the Balancing Service Contract / Balance Responsible Party Contract in the following cases:
    - a) if the registered Balancing Service Provider / registered Balance Responsible Party repeatedly breaches its obligations under this Rulebook or the Balancing Service Contract / Balance Responsible Party Contract, or the HETS Grid Code, or
    - b) if the measure of deletion has been imposed on the registered Balancing Service Provider / registered Balance Responsible Party on the basis of the Clearing Rulebook for Balancing Market Positions,
  6. In the cases of paragraphs 4 and 5 of this Article, the termination shall be notified in writing through a bailiff and shall enter into force and take effect as of the date of its service.
  7. The Balancing Service Contract / Balance Responsible Party Contract shall be dissolved ipso jure if the HETS Operator Transactions Contract provided for in the HETS Grid Code is terminated.
  8. The termination of the Balancing Service Contract / Balance Responsible Party Contract with Self-Supplied customers or Consumers, whose facilities are connected to HETS, shall mean that electricity supply shall cease for these facilities. In the event of termination of the Balancing Service Contract / Balance Responsible Party Contract with Self-Supplied customers or Consumers, whose facilities are connected to the Distribution Network, the HETS Operator shall notify the competent Distribution Network Operator, in order to take the necessary action to interrupt power supply as provided for in the Distribution Network Operation Code.
  9. The registered Balancing Service Provider / registered Balance Responsible Party whose Balancing Service Contract / Balance Responsible Party Contract is terminated, shall continue to be liable to the HETS Operator and the Clearing House, in accordance with the provisions of this Rulebook, the Clearing Rulebook for Balancing Market Positions and the HETS Grid Code, for obligations incurred prior to the termination.



10. In the cases of paragraph 4 of this Article, as of the termination of the Balancing Service Contract / Balance Responsible Party Contract and deletion from the HETS Operator Registry, all the obligations of the deleted participant under this Rulebook shall fall due and immediately payable.
11. The HETS Operator is required to notify the termination of the Balancing Service Contract / Balance Responsible Party Contract to RAE, the Power Exchange, the Clearing House, and any other person deemed necessary, as soon as possible.

**Article 8. Procedure for registration in the Balancing Service Providers Registry and the Balance Responsible Parties Registry**

1. The interested party that wishes to register in the Balancing Service Providers Registry and/or the Balance Responsible Parties Registry shall submit the following to the HETS Operator:
  - a) A registration application whereby it declares that it expressly and unconditionally accepts this Rulebook, the HETS Grid Code and the Methodologies, parameters, special approvals, Technical Decisions and Manuals issued in accordance thereof, as amended and in force each time, and that it is obliged to comply with their content, including the fulfillment of the cash obligations deriving therefrom.
  - b) A solemn declaration by the interested party or its legal representative, indicating the documents attached to the Registration Application.
  - c) Documents evidencing the legal incorporation and operation of the interested party, and the legal representation of the applicant by the person signing the application and the above declarations.
  - d) Certificate from the Clearing House confirming that a Clearing Account has been created for the Participant as a Direct Clearing Member, or that a Clearing Account has been created for the Participant as a General Clearing Member, or Guarantees, in accordance with Article 115 in the event that no Clearing House operates in the Balancing Market, for any reason whatsoever.
  - e) Guarantees in accordance with the HETS Grid Code.
  - f) A Production License or RES Producer Certificate or Supply License or Trading License or RES License or Demand Response Aggregator License, depending on the capacity of the interested party. If the interested party acts in many Capacities, it should adduce an appropriate license for each capacity.
  - g) For RES Producers, a Copy of the Contract for Differential State Aid Support or a certificate from DAPEEP regarding the operational status of the RES and the HPCHP Units covered by the provisions of par. 19, Article 3 of Law 4414/2016.
2. Along with the Application, the Applicant shall pay the application fee, which is determined by decision of RAE, upon recommendation of the HETS Operator.
3. The HETS Operator shall register the applicant in the HETS Operator Registry within fifteen (15) business days from the day of submission of a complete application. Upon registration, the HETS Operator shall issue a relevant certificate to the interested party. A copy of the certificate shall be notified to RAE, the Distribution Network Operator, the Clearing House and the Power Exchange.

4. Details regarding the registration in the Balancing Service Providers Registry and the Balance Responsible Parties Registry are specified in the Technical Decision "Procedures for Registration in the HETS Operator Registry".

**Article 9. Rejection of application for registration in the HETS Operator Registry**

1. The HETS Operator may reject the application for registration in the HETS Operator Registry, when:
  - a) the applicant has not submitted a complete application or has not paid the application fee in accordance with Article 5 and Article 8 of this Rulebook,
  - b) in the past, the Applicant has been in breach of its obligations under an earlier Balancing Service Contract or a Balance Responsible Party Contract or a HETS Operator Transaction Contract, resulting in the termination of the Contract, unless the circumstances giving rise to the termination have ceased to exist,
  - c) the conclusion of a Balancing Service Contract or a Balance Responsible Party Contract with the applicant Participant is a reason of breach on the part of the HETS Operator of any term of any mandatory legal or regulatory obligation as laid down in the applicable legislation,
  - d) the applicant has outstanding financial obligations to the HETS Operator for any reason whatsoever that have fallen due,
  - e) the relevant requirements, as set out in this Rulebook and the HETS Grid Code, are not met.
2. The HETS Operator shall justify the rejection of the Application. The rejection shall be notified to RAE, the Distribution Network Operator, the Clearing House and the Power Exchange.
3. The Applicant may lodge an objection within ten (10) business days from the notification of the above rejection, on which the HETS Operator shall decide within ten (10) business days. The above objection and decision shall be notified to RAE, the Distribution Network Operator, the Clearing House and the Power Exchange.

## CHAPTER 3

### REGISTRIES OF ENTITIES

**Article 10. Entities**

1. The entities participating in the Balancing Market shall be categorized into Balancing Service Entities and Balance Responsible Entities. The Balancing Service Entities shall be represented by Balancing Service Providers, while the Balance Responsible Entities shall be represented by the Contracted Balance Responsible Parties.
2. The Balancing Service Entities shall be entitled to provide Balancing Energy and/or Balancing Capacity and shall include the following categories:
  - a) Dispatchable Generating Unit,

- b) Dispatchable RES Units Portfolio,
  - c) Dispatchable Load Portfolio.
3. The Contracted Generating Units are also included in the Entities, but they are not referred to in paragraph 2 of this Article as they do not participate in the Balancing Market procedures. The Contracted Generating Units shall provide additional services in any situation that may lead to the load and/or reserve requirements not being covered during the Integrated Scheduling Process (ISP), following conclusion of a relevant contract, as stipulated in the HETS Grid Code.
4. Entities with Balance Responsibility are the entities that assume responsibility for the imbalances they cause and include the Balancing Service Entities referred to in paragraph 2 of this Article as well as the following entities:
- a) Non-Dispatchable RES Units Portfolio,
  - b) Non-Dispatchable Load Portfolio,
  - c) RES Units Portfolio without Market Participation Obligation,
  - d) Import Portfolios and Export Portfolios.

#### **Article 11. Balancing Market Generating Units Registry**

1. The HETS Operator shall keep a Balancing Market Generating Units Registry for the registration of the Dispatchable Generating Units that have successfully completed the relevant pre-qualification tests described in the "Terms and Conditions for Balancing Service Providers".
2. The information included in the Balancing Market Generating Units Registry and any supporting documents required for registration therein are described in detail in the Technical Decision "Procedures of Registration in the HETS Operator Registry".
3. The Producer is obliged to immediately notify the HETS Operator of any modification in the Generating Unit data entered in the Balancing Market Generating Units Registry.
4. For a power generation unit which has a valid production license, is located on the mainland or on the interconnected islands and has an installed capacity over 5 MW to be put in the Commissioning operation or to perform pre-qualification tests, the unit must have been pre-registered in the Balancing Market Generating Units Registry.
5. Details on pre-registration are provided in the Technical Decision "Procedures of Registration in the HETS Operator Registry".
6. Dispatchable Generating Units shall be deleted from the Generating Units Registry if they permanently cease to operate, as a result of a relevant decision by RAE.
7. As regards Dispatchable Auto-producer Units, Dispatchable HPCHP Units, Dispatchable Units with Alternative Fuel and Dispatchable Multi-Shaft Combined Cycle Units, the provisions of this Rulebook relating to Dispatchable Generating Units shall apply, unless otherwise expressly stated.

#### **Article 12. Dispatchable RES Units Portfolio Registry**

1. The HETS Operator shall keep a Dispatchable RES Units Portfolio Registry for the registration of the Dispatchable RES Units Portfolios that have successfully completed the

- relevant pre-qualification tests described in the "Terms and Conditions for Balancing Service Providers".
2. The information included in the Dispatchable RES Units Portfolios Registry and any supporting documents required for registration therein are described in detail in the Technical Decision "Procedures of Registration in the HETS Operator Registry".
  3. Each RES Producer/RES Aggregator is obliged to immediately notify the System Operator of any changes in the data held in the Dispatchable RES Unit Portfolios Registry.
  4. For a Dispatchable RES Units Portfolio to be put in Commissioning operation or to undergo pre-qualification tests, the Portfolio must have been pre-registered in the Dispatchable RES Units Portfolio Registry.
  5. Details on pre-registration are provided in the Technical Decision "Procedures of Registration in the HETS Operator Registry".

### **Article 13. Dispatchable Load Portfolio Registry**

1. The HETS Operator shall keep a Dispatchable Load Portfolio Registry for the registration of the Dispatchable Load Portfolios that have successfully completed the relevant pre-qualification tests described in the "Terms and Conditions of Balancing Service Providers".
2. The information included in the Dispatchable Load Portfolios Registry and any supporting documents required for registration therein are described in detail in the Technical Decision "Procedures of Registration in the HETS Operator Registry".
3. Each Response Demand Aggregator and each Consumer participating in the Balancing Market as Balancing Service Provider is obliged to immediately notify the HETS Operator of any changes in the data held in the Dispatchable Load Portfolios Registry.
4. Each Dispatchable Pumped-Storage hydro Generating Unit shall be a distinct Dispatchable Load Portfolio. The Producers representing the above Units are obliged to immediately notify the HETS Operator of any changes in the data held in the Dispatchable Load Portfolios Registry.
5. For a Demand Response Load Portfolio to be put in the Commissioning operation or to undergo pre-qualification tests, the Portfolio must have been pre-registered in the Dispatchable Load Portfolio Registry.
6. Details on pre-registration are provided in the Technical Decision "Procedures of Registration in the HETS Operator Registry".

## **CHAPTER 4**

### **BALANCING MARKET SYSTEM**

#### **Article 14. Balancing Market System Description**

1. The Balancing Market System shall perform all the procedures and all the necessary calculations and shall record all the data and the results of the Balancing Market in connection to the ISP, the Balancing Energy Market, and the Balancing Market Settlement. The Balancing Market System shall include the following subsystems:

- a) the HETS Operator Registry,
  - b) the Physical Transmission Rights Declaration Submission System of the HETS Operator,
  - c) the Balancing Market Bidding Submission System,
  - d) the Dispatch Information Administration System, including: the Load Forecasting / RES Injection Forecasting / Reserve Requirements Forecasting Mechanism, the interface with the Power Exchange for acquisition of the Market Schedules of all Entities, the Integrated Schedule Process solution mechanism and the Balancing Energy Market solution mechanism, the mechanism that produces the Dispatch Instructions in real time and the interface with the Supervisory Control and Data Acquisition System (SCADA).
  - e) the Balancing Market Settlement System, which carries out all Settlement calculations and processes, and serves as the interface with the Clearing House, and
  - f) the Participant Communication System and the data bases required for the operation of the above.
2. The HETS Operator shall operate and maintain the Balancing Market System. The Balancing Market System must be fully compatible with the functions provided for in this Rulebook.
  3. The HETS Operator shall take the appropriate measures to prevent any operational issues in the Balancing Market System and shall try to restore any failure or malfunction, as soon as possible. The HETS Operator shall not be liable to the Participants for any loss they may incur due to any unforeseen failure or malfunction in the Balancing Market System, even temporary ones, or due to any loss of data from the Balancing Market System, or due to any malicious use of the Balancing Market System or the data therein by third parties.
  4. The Balancing Market System supports the commonly accepted principles of good business practices, it is based on modern, appropriate, and reliable information and communication technologies and complies with strict standards of uninterrupted operation, increased reliability and integrity of information.
  5. The Balancing Market System databases are protected by an appropriate security system that does not allow access to classified information to unauthorized persons. The System itself provides protection against deletion of information from the databases.

#### **Article 15. Access to the Balancing Market System**

1. The HETS Operator shall provide the specified access to the Balancing Market System if the following conditions are met:
  - a) the registered Balancing Service Provider / registered Balance Responsible Party has fulfilled the authentication requirements. These requirements may include, inter alia, the obligation to provide an electronic certificate for signature, encryption or other authentication technology purposes, and
  - b) the representative(s) of the Registered Balancing Service Provider/registered Balance Responsible Party, for whom the user account (s) is (are) created in the Balancing Market System, has (have) succeeded in the suitability test conducted by the HETS Operator on the proper use of the Balancing Market System.

2. The HETS Operator shall confirm the creation of the User Account(s) or send a rejection note to the registered Balancing Service Provider / Balance Responsible Party, no later than five (5) business days from the completion of the suitability test by the Balancing Market representative(s) of the registered Balancing Service Provider/Balance Responsible Party. The confirmation or rejection shall be sent by any means to the designated representative of the registered Balancing Service Provider / Balance Responsible Party.
3. If the conditions referred to in paragraph 1 of this Article are not met, the HETS Operator shall notify the registered Balancing Service Provider / Balance Responsible Party of the rejection and shall not grant access to the Balancing Market System.

#### **Article 16. Balancing Market System Certification**

1. The HETS Operator shall ensure that the Balancing Market System is certified by an independent inspection firm, which shall certify compatibility with the functions and procedures included in this Rulebook and shall conduct either:
  - a) a full inspection, or
  - b) a partial inspection of the changes and their impact on the remainder of the Balancing Market System.

Such certification shall take place every time the Balancing Market System is significantly modified. The HETS operator shall publish the inspection certificate on its website.

2. Every time the HETS Operator shall determine whether a full inspection or partial inspection is needed time at its discretion.

#### **Article 17. Communication between the HETS Operator and the Participants**

1. Communication between the HETS Operator and the Participants, which includes all notifications or submissions provided for in this Rulebook, shall be performed by electronic means through the Balancing Market System. In case communication through the Balancing Market System is not possible for any reason, or in case of emergency, communication can take place by other means such as telephone, email or fax at the discretion of the HETS Operator.
2. The HETS Operator shall use the appropriate international standards to establish appropriate interconnection protocols for the Participants to communicate with the Balancing Market System and shall make these interconnection protocols available to all requesting persons. The Participants shall put into service systems that are suitable for effective communication with the Balancing Market System operated by the HETS Operator.
3. The Balancing Market System automatically issues an acknowledgment of receipt, which is sent directly to the Participants through the Participants Communication System.
4. In the event of a total or partial unavailability of the Participants Communication System, the HETS Operator shall immediately notify all the Participants by sending a relevant notice by any appropriate means, specifying the procedure to be followed for further communication and the expected amount of time required to restore the system availability. As soon as the system is restored, the HETS Operator shall notify all Participants electronically.



5. In any case, the Participants Communication System shall be the preferred route of communication as long as there is no unavailability issue. In that case, the provisions on Emergency Situations, as defined in the HETS Grid Code, shall apply.
6. Each Participant shall comply with specific standards in its communications with the HETS Operator. These standards shall apply with regard to the operational capability, reliability and safety of its own communication centers and the appropriate computer and data networking equipment. The equipment must be used by the Participants only for their communications with the Balancing Market System.
7. Each Participant shall be responsible for the provision and maintenance of telephone, fax and e-mail equipment at its own expense.
8. The HETS Operator shall not be liable to the Participants for the timely transmission of offers, declarations or other data from the Participants, or for technical failures in the systems and the equipment used by the Participants to communicate with the Balancing Market System.

#### **Article 18. Participants Support**

The HETS Operator shall inform the Participants about the Balancing Market System and shall provide support and instructions so that they can get a suitable and compatible system for their communication with the Balancing Market System

#### **Article 19. Record Keeping**

1. The HETS Operator shall keep a record of all the information used for the execution of its responsibilities under this Rulebook, for at least five (5) years. The HETS Operator shall provide the Participants with a copy of the information pertaining to them, in editable form, at their request.
2. All data generated by the Balancing Market System are the property of the HETS Operator.

#### **Article 20. Publication of Information by the HETS Operator**

The HETS Operator shall publish on its web site, at the end of each calendar month, information on the operation of the Balancing Market in the preceding calendar month, which shall include at least the following items:

- a) the total electricity and maximum total HETS load per Dispatch Day,
- b) the zonal imbalances per Imbalance Settlement Time Period,
- c) any important HETS events,
- d) aggregate information on Dispatch Instruction violations by Balancing Service Providers.

## CHAPTER 5

### Hydro Resources Management

#### Article 21. General Obligations for the Hydro Resources Management

1. The Balancing Service Providers representing Dispatchable Hydro Generating Units, including Dispatchable Pumped-Storage hydro Generating Units shall submit to the HETS Operator the following hydro management declarations:
  - a) Yearly ahead hydro usage declarations,
  - b) Weekly mandatory hydro management declarations and
  - c) Daily mandatory hydro injection declarations.
2. The Balancing Service Providers representing Dispatchable Hydro Generating Units are required to:
  - a) submit to the HETS Operator annual curves regarding reservoir reserves for the last ten (10) years, on a monthly basis. As for the new power stations of Dispatchable Hydro Generating Units, given that the historical data on water levels are limited, they must submit the estimated curves and shall take into account any available historical data.
  - b) inform the HETS Operator about the reservoir water level of the Dispatchable Hydro Generating Unit and any changes expected, and about the water supply to the reservoir of the Dispatchable Hydro Generating Unit (instantaneous or average for a specific period), one day before the Dispatch Day or on an ad hoc basis, as the HETS Operator deems appropriate.
  - c) take into account the current level of the relevant water reserves, any forecasts for the evolution of these reserves, their obligations for water supply, irrigation and ecological supply, and ensure that the Safety Minimum Reservoir Level is constantly maintained when planning the operation of these Units and, in particular, at the time of submission of hydro management declarations and at the time of submission of Techno-Economic Declarations, which include information on the maximum daily energy injection for the Generating Units in question.
  - d) notify the HETS Operator of the forecasted changes in any components affecting mandatory hydro management as soon as possible after the occurrence of the emergency.
  - e) notify the HETS Operator, on a weekly basis, of the daily quantity of water in cubic meters and the corresponding energy in MWh that came through the spillway for each reservoir.
3. The height of the Safety Maximum Reservoir Level and the Safety Minimum Reservoir Level shall be determined for each Dispatchable hydro Generating Unit by RAE following a proposal of the relevant Balancing Service Provider and an opinion of the HETS Operator.
4. The Balancing Service Providers representing Dispatchable hydro Generating Units that are connected to the reservoir may:



- a) submit mandatory hydro injection declarations for the above Units to avoid an overflow only when the water level in the relevant reservoir is expected to be equal or higher than the Safety Maximum Reservoir Level.
  - b) submit declarations of maximum daily energy injection constraint for the above Units only when the water level in the relevant reservoir is expected to be equal or higher than the Safety Minimum Reservoir Level.
5. Upon expiration of the Dispatch Day, the HETS Operator shall immediately publish the quantity of energy injected by each Dispatchable hydro Generating Unit for each Imbalance Settlement Period of the Dispatch Day.
  6. The HETS Operator shall submit to RAE, on a monthly basis, a report containing the submitted requests for amendment of the weekly mandatory hydro management declarations, which shall provide the reasons for their submission, the relevant evidence submitted by the Balancing Service Providers, their acceptance or rejection by the HETS Operator and any other relevant information.
  7. The HETS Operator shall send to RAE, by the end of the following month, a report including at least the following information on a daily basis and for each Dispatchable hydro Generating Unit.
    - a) the water level in the relevant reservoir,
    - b) curves on reservoir reserves,
    - c) total injected energy,
    - d) mandatory hydro injection declarations with distinct reference to the quantities by reason of overflow,
    - e) pumping energy.
  8. The HETS Operator shall inform the Energy Exchange with regard to the mandatory hydro injection declarations in accordance with the provisions of the Day-Ahead & Intra-Day Markets Trading Rulebook.
  9. Details on the hydro resources management may be specified in the Technical Decision “Integrated Scheduling Process”.

## **Article 22. Yearly Ahead Hydro Usage Declarations**

1. The yearly ahead hydro usage declaration refers to the upcoming twelve months and shall be submitted on a rolling basis up to five (5) days before the start of the first month to which it refers. The yearly ahead hydro usage declaration shall be submitted to the HETS Operator, accompanied by the evidence on the maximization of the hydro resources value and the overall benefit of using the Dispatchable hydro Generating Units for the electricity sector.
2. The yearly ahead hydro usage declaration shall determine for each month of the following twelve-month period, as a sum for all Dispatch Periods of the Dispatch Days of the month, as a sum for all Dispatchable hydro Generating Units of each Balancing Service Provider, and for three hydrological scenarios (high, low and intermediate total inflows) the following:
  - a) the schedule of forecasted energy injection due to mandatory operation,
  - b) the schedule of forecasted generation of additional energy,

- c) the expected water inflows in the reservoirs, and
  - d) the forecasted water reserves in the reservoirs at the end of the month.
3. Within one (1) month from the expiration of each Reliability Year, the Balancing Service Providers representing Dispatchable hydro Generating Units shall submit to the HETS Operator and to RAE a report on the hydro recourse management during the previous Reliability Year. The report shall include:
  - a) the real data of paragraph 1 of this Article,
  - b) a comparison with the corresponding yearly ahead hydro usage declarations and evidence on the imbalances, and
  - c) evidence on the maximization of the hydro recourse value and the overall benefit of using the Dispatchable hydro Generating Units for the electricity sector.

### **Article 23. Weekly Mandatory Hydro Management Declarations**

1. The weekly mandatory hydro management declaration shall be submitted by the relevant Balancing Service Providers every Thursday by 12:00 EET and shall refer to a period of seven Dispatch Days in total starting on the following Saturday. The weekly mandatory hydro management declaration shall specify the estimated quantity of mandatory energy injection for each Dispatchable hydro Generating Unit and for each Dispatch Period of the Dispatch Days to which the declaration refers and shall correspond to the following mandatory operations:
  - a) water supply,
  - b) irrigation, and
  - c) ecological supply
2. The Balancing Service Providers representing Dispatchable Hydro Generating Units must substantiate the energy quantity declarations for the mandatory operations on a weekly basis, by submitting data on the said operations and on the inflow-outflow water balance in the reservoirs. The data substantiating the declarations shall be both actuarial and budget data and shall be published on the website of the HETS operator. The weekly mandatory hydro management declaration of each Dispatchable hydro Generating Unit is binding and cannot be amended for the energy quantities of item (c), paragraph 1 of this Article.
3. The Balancing Service Providers representing Dispatchable hydro Generating Units may submit a request for amendment of the weekly mandatory hydro management declaration with regard to the information of paragraph 1 of this Article for emergency reasons, which include cases of violation of the Safety Maximum Reservoir Level, other safety reasons or special works and third-party claims. The Balancing Service Provider shall fully substantiate the request for amendment. The HETS Operator may request additional information at a later stage if in its judgment the justification is not complete. In case of amendment of the weekly mandatory hydro management declaration, the HETS Operator shall notify the Participants as soon as possible.

### **Article 24. Daily Mandatory hydro Management Declarations**

1. Balancing Service Providers representing Dispatchable hydro Generating Units are required to notify the HETS Operator of a forecasted change in any components affecting

mandatory hydro management as soon as possible after the occurrence of the event. In particular, they are required to inform the HETS Operator with regard to:

- a) the water level in the reservoir of the Dispatchable hydro Generating Units and the expected changes therein, especially if a violation of the Safety Maximum Reservoir Level is ascertained or forecasted,
  - b) the water supply in the reservoir of the Dispatchable hydro Generating Unit (instantaneous or average for a specific period),
  - c) any necessary measures taken for the safety of the reservoir dams when increased water supplies are observed,
  - d) the modification of irrigation needs,
  - e) special works and third-party claims or
  - f) other safety reasons (Force Majeure).
2. Balancing Service Providers representing Dispatchable hydro Generating Units are required to submit to the HETS Operator daily mandatory hydro injection declarations until 09:30 EET of the previous Dispatch Day. Furthermore, they are required to submit to the HETS Operator daily hydro mandatory injection declarations as soon as possible after the occurrence of an event affecting the management of mandatory waters.
3. A deviation of the daily hydro mandatory injection declaration from the weekly mandatory hydro management declaration is allowed only in the following cases:
- a) modification of water supply needs,
  - b) modification of irrigation needs,
  - c) avoidance of overflow,
  - d) special works and third-party claims and
  - e) other safety reasons (Force Majeure)
4. Any deviation of the daily mandatory hydro injection declaration from the weekly mandatory hydro management declaration shall be fully substantiated by the Balancing Service Provider. The HETS Operator may request additional information at a later stage if in its judgment the justification is not complete. In case of amendment of the weekly mandatory hydro management declaration, the HETS Operator shall notify the Participants as soon as possible.
5. If an amended daily mandatory hydro injection declaration is submitted during the Dispatch Day to which the declaration refers, the HETS Operator shall:
- a) depending on the extent of the amendment, decide if an execution of an ad-hoc ISP is required,
  - b) include the amended daily mandatory hydro injection declarations in the Balancing Energy Market, and
  - c) have the possibility to allocate the additional quantities within the Dispatch Day, so that the operation of the HETS is ensured and the operation of the Balancing Market is not disturbed to the extent possible.

## CHAPTER 6

### MISCELLANEOUS

#### Article 25. Balancing Market Fee

1. The expenditure related to the obligations of the HETS Operator in accordance with this Rulebook, which are considered reasonable, efficient and proportionate, as well as their rate of return, shall be recovered by the Operator through a Balancing Market Fee payable by every Balancing Service Provider and Balance Responsible Party.
2. The Balancing Market Fee shall be determined every year, at least two months before the start of the year, upon proposal by the HETS Operator and approval by RAE. In the determination of the Balancing Market Fee for each year corrections from previous years shall be taken into account, if necessary.
3. The Balancing Market Fee may comprise the following elements:
  - a) A Fixed Participation Fee to be paid by every Participant for participation in the Balancing Market. The fee shall be paid on a monthly basis and may be different for every Category of Participant.
  - b) A Proportional Balancing Fee, per Participant, in accordance with the following paragraph. The fee shall be paid on a monthly basis.
4. The Proportional Balancing Fee shall be charged to Balance Responsible Parties based on their monthly energy imbalance quantities and to Balancing Service Providers based on their monthly activated Balancing Energy quantities.
5. The Balancing Market Fees shall be collected every month by the Clearing House and shall be paid to the HETS Operator.

#### Article 26. Force Majeure

1. For the purpose of this Rulebook Force Majeure events shall mean all events that affect the performance of obligations arising from this Rulebook, and are beyond the control of the party affected by them and which could not have been anticipated or prevented, despite the diligence that any prudent party might have shown.
2. If any party is unable to fulfill any of its obligations under this Rulebook due to Force Majeure events, the fulfillment of mutual claims and obligations arising from the corresponding Balancing Service Contract or the Balance Responsible Party Contract shall be suspended for the Force Majeure period.
3. In case of Force Majeure event, the HETS Operator or the registered Balancing Service Provider / registered Balance Responsible Party that invokes Force Majeure event, shall have the following obligations:
  - a) it shall be required to send to the other party a notice, as soon as possible, describing the nature of Force Majeure event and its probable duration, and to continue to give reports with reasonable frequency during the period of Force Majeure event.
  - b) it shall make every possible effort to limit the consequences of Force Majeure event, as soon as possible, after the occurrence of Force Majeure event,

- c) it shall cooperate with the other party in the interest of finding the best way to continue their activities to the extent possible in accordance with this Rulebook.
4. If Force Majeure continues for a period longer than six (6) months, the HETS Operator or any registered Balancing Service Provider / registered Balance Responsible Party may unilaterally terminate the Balancing Service Contract or the Balance Responsible Party Contract, respectively, by notice to the other party. The termination shall take effect within ten (10) business days from the date of the notice or at any later date specified in the Termination Notice.

#### **Article 27. Notices**

1. In addition to communication through the Balancing Market System as described in Article 17 or otherwise specified in this Rulebook, any notice or other communication in the context of or in connection with this Rulebook shall be conducted by personal delivery, or by post, fax or email, and shall be addressed to the representative of the other party, as defined in the Balancing Service Contract / Balance Responsible Party Contract, or as notified by the registered Participant.
2. In particular, for any communication concerning (i) the conclusion of the Balancing Service Contract / Balance Responsible Party Contract pursuant to Article 5, communication shall be conducted by personal delivery only or by post, with proof of receipt, or (ii) the termination thereof, according to Article 7, by bailiff service.
3. All notices and other communications, shall be deemed to have been received by the party they are addressed to, as follows:
  - a) in case of personal delivery or delivery by post, at the time of delivery,
  - b) in case of fax, at the time indicated on the proof of delivery of the sender's facsimile machine,
  - c) in case of e-mail, at the time the e-mail was sent, indicated on the proof of sending.
4. If a notification or other announcement has been received outside the working hours of a business day, it shall be deemed to have been received at the beginning of the working hours on the following business day.

#### **Article 28. Transparency – Confidentiality**

1. The HETS Operator shall comply with all the rules laid down in the applicable legislation regarding transparency and disclosure of information with respect to the transactions carried out in the context of the Balancing Market, and, in particular, with the provisions of:
  - a) Regulation (EU) 1227/2011 of the European Parliament and of the Council of 25 October 2011 on the integrity and the transparency of the wholesale energy market,
  - b) Implementing Commission Regulation (EU) 1348/2014 of 17 December 2014 on the reporting of data for the implementation of Article 8 (2) and (6) of Regulation (EU) 1227/2011 of the European Parliament and of the Council on the integrity and the transparency of the wholesale energy market, and
  - c) Commission Regulation (EU) 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and on amending Annex I to Regulation (EC) 714/2009 of the European Parliament and of the Council,

- d) Commission Regulation (EU) 2017/2195 of 23 November 2017 on establishing a guideline on electricity balancing,
  - e) or any other relevant regulatory act or law.
2. The HETS Operator shall provide to third parties, and, in particular, to the Participants, following a reasoned request, information relating to transactions carried out in the framework of the Balancing Market, provided that:
  - a) this act is not contrary to a provision of law,
  - b) the information does not constitute commercially sensitive information and its provision does not entail unfair commercial or competitive advantages to third parties and, in particular, to the registered Participants and
  - c) the third party, including the registered Participants, is bound by a confidentiality clause.
3. General information on the operation of the System as well as information on statistical data is not considered to be confidential.
4. Without prejudice to paragraph 3 of this Article, the HETS Operator and any Registered Balancing Service Provider / Registered Balance Responsible Party that receives confidential information in connection with this Rulebook shall preserve the confidentiality of such information and shall not disclose, report, publish, communicate, transfer or use, directly or indirectly, any part of the confidential information for a purpose other than that for which it was notified to it.
5. Without prejudice to paragraph 3 of this Article, the HETS Operator or the Registered Balancing Service Provider / Registered Balance Responsible Party may disclose confidential information of another party:
  - a) to the extent provided for in this Rulebook or the Clearing Rulebook for Balancing Market Positions,
  - b) to the extent required, in order to comply with the applicable national or European legislation as provided for in paragraph 1 of this Article,
  - c) to the extent required by competent courts or authorities during proceedings before them, in which the addressee participates,
  - d) if required for the proper fulfillment of its duties and obligations under applicable law and this Rulebook, or
  - e) if required for the issuing of licenses or approvals by the competent authority.
6. Moreover, the obligations arising from this Article shall not apply:
  - a) if the party receiving the information can prove that, at the time of disclosure, such information was already publicly available,
  - b) if the party receiving the information presents evidence that, since the notification the information has been legally received by a third party or made available to the public,
  - c) to confidential information disclosed in accordance with legal and regulatory arrangements in an aggregated form, from which no information relevant to a particular Market Participant can be deducted,
  - d) to information whose publication is explicitly provided for in the present Rulebook.



7. The confidentiality obligations of this Article shall remain in effect for the entire duration and for a period of five (5) years from the termination of the Balancing Service Contract or the Balance Responsible Party Contract.
8. The conclusion of a Balancing Service Contract or Balance Responsible Party Contract and the exchange of confidential information shall not give rise to any right to patents, knowledge or any other form of copyright in respect of information or tools made available or sent by one party to another by virtue of this Rulebook.

#### **Article 29. Release and Assignment**

The Registered Participant may not release or assign any of the rights or obligations arising from the Balancing Service Contract or the Balance Responsible Party Contract, or this Rulebook to third parties. In particular, the above persons are allowed to assign the Clearing of Positions they may possess to a Clearing Member with respect to their cash obligations and the corresponding claims arising from such Positions in accordance with the Clearing Rulebook for Balancing Market Positions

#### **Article 30. Applicable law and jurisdiction**

1. This Rulebook is governed by and interpreted in accordance with the Greek law.
2. The courts of Athens are competent for resolving any dispute that may arise from or in connection with this Rulebook.

#### **Article 31. Language and Currency**

1. If this Rulebook is translated into English, in the event of discrepancy between the Greek text and the English version, the Greek text shall prevail over the English language version.
2. For the purposes of implementation of the provisions of this Rulebook, all amounts shall be in Euros.

#### **Article 32. Waiver**

Omission or delay in the exercise of any right, power or judicial remedy, or individual or partial exercise of any such right, power or judicial remedy provided for by law or by this Rulebook, shall not constitute a waiver of this or any other right, power or judicial remedy.

#### **Article 33. Entirety of the agreement**

1. This Rulebook, the Balancing Service Contract, the Balance Responsible Party Contract the HETS Grid Code and the HETS Transactions Contract constitute the entire agreement between the HETS Operator and each registrant in the HETS Operator Registry.
2. If any provision of this Rulebook or the Balancing Service Contract or the Balance Responsible Party Contract or the HETS Grid Code or the HETS Transactions Contract is declared null, unenforceable or unlawful by the competent courts, or according to an arbitration or by order of a competent authority, such nullity, non-enforceability or unlawfulness shall not prejudice or affect the remaining provisions of this Rulebook, the Balancing Service Contract or the Balance Responsible Party Contract or the HETS Grid Code or the HETS Transactions Contract, which shall continue to be in force and have legal effects.

**Article 34. Special cases**

1. Regarding Emergency Situations, the provisions of the HETS Grid Code and the Natural Gas Emergency Plan shall apply.
2. In the event that the operation of the Balancing Market is impossible, in particular due to an Emergency Situation, or failure of the Balancing Market System or of the other electronic systems of the HETS Operator, the HETS Operator shall apply the "Rules for Suspension and Restoration of Market Activities", approved by RAE, upon the recommendation of the HETS Operator according to the provisions of paragraph 4, article 18 of Law 4425/2016.



## SECTION II

# INTEGRATED SCHEDULING PROCESS

## CHAPTER 7

### GENERAL PROVISIONS

#### Article 35. Scope

This section presents:

- 1) the exchange of information between the Day-Ahead Market and the Intra-Day Market on the one hand and the Balancing Market on the other,
- 2) the procedure and the conditions for the submission of a Total or Partial Non-Availability Declaration by the Balancing Service Providers for the Balancing Service Entities they represent,
- 3) the procedure for the submission of a Techno-Economic Declaration by the Balancing Service Providers for the Balancing Service Entities they represent,
- 4) the procedure for the submission of ISP Balancing Energy Offers by the Balancing Service Providers for the Balancing Service Entities they represent,
- 5) the procedure for the submission of Balancing Capacity Offers by the Balancing Service Providers for the Balancing Service Entities they represent, and
- 6) details on the implementation of the Integrated Scheduling Process (ISP).

#### Article 36. General Provisions for the Integrated Scheduling Process

1. ISP aims to (a) commit the Balancing Capacity needed in the short term and (b) to achieve a schedule that meets the technical constraints of the HETS and the Balancing Service Entities based on ex ante estimation of any HETS Imbalances.
2. All procedures and actions related to ISP shall refer to a specific Dispatch Day D.
3. The Dispatch Day to which the ISP refers, coincides with the Delivery Day of the Day-Ahead Market and the Intra-Day Market. Dispatch Day D starts at 01:00 EET of calendar day D and ends at 01:00 EET of calendar day D +1.
4. A Dispatch Day consists of individual Dispatch Periods. The duration of each Dispatch Period is set at half an hour. The first Dispatch Period of Dispatch Day D is 01:00 – 01:30 EET.
5. The ISP is executed at three scheduled times:
  - a) one (ISP1) which is executed at 17:30 EET on calendar day D-1 and covers all Dispatch Periods of Dispatch Day D,
  - b) one (ISP2) which is executed at 00:00 EET on calendar day D and covers all Dispatch Periods of Dispatch Day D, and
  - c) one (ISP3) which is executed at 12:00 EET on calendar day D and covers the last twenty-four (24) Dispatch Periods of Dispatch Day D,

6. The HETS Operator may execute the ISP at any time for all or for certain Dispatch Periods (“ad-hoc ISP”), in the event of an occurrence which significantly affects the scheduling of the Balancing Service Entities and the dispatch of the Balancing Capacity. Such events include but are not limited to, significant changes in the zonal Load Forecast, or zonal RES Units Forecast, or the availability of resources, or the HETS conditions.
7. The following products are used in the ISP:
  - a) upward and downward Balancing Energy without distinction between manual FRR and automatic FRR;
  - b) the following Balancing Capacity products:
    - i. Upward and downward FCR,
    - ii. Upward and downward automatic FRR, and
    - iii. Upward and downward manual FRR.
8. The submission of the Balancing Capacity Offers and the ISP Balancing Energy Offers of the Balancing Service Providers to ISP, for Dispatch Day D starts at 14:00 EET on calendar day D-1 and ends at 17:30 EET on calendar day D-1. During this time period, the Balancing Service Providers may submit Offers for the Balancing Service Entities they represent, as many times as they wish. Only the last validated Offers shall be taken into consideration in the execution of the ISP.
9. The Deadline for the Submission of ISP Offers is set at 17:30 EET.
10. The HETS Operator shall draw up a timetable for the activities governing the actions required for the execution of the ISP, which shall include the actions required during calendar days D and D-1. This timetable shall be published on the website of the HETS Operator.
11. Details on the ISP are provided in the Technical Decision “Integrated Scheduling Process”.

**Article 37. Transmission of information to the HETS Operator within the framework of the ISP.**

1. The Power Exchange shall transmit to the HETS Operator, for each Market Time Unit of each Dispatch Day, no later than 15 minutes after the last Local Intra-Day Auctions Gate Closure Time or the Complementary Regional Intra-Day Auction or the Continuous Intra-Day Trading, the following information:
  - a) The Scheduled Energy Exchanges and the corresponding purchase prices, for each inter-zonal corridor, as calculated in the results of the Day-Ahead Market and the Intra-Day Market. The Scheduled Energy Exchanges shall be submitted to the HETS Operator in order to calculate any remaining Inter-Zonal Capacity after the solution of the Intra-Day Market.
  - b) The Market Schedules, i.e. the algebraic sum of the energy volumes of the accepted Day-Ahead and Intra-Day Market Orders per Market Time Unit of the Dispatch Day for each of the following Entities:
    - i. Dispatchable Generating Units,
    - ii. Dispatchable Generating Units or RES Units in Testing operation,
    - iii. generating units or RES Units in Commissioning operation,

- iv. Dispatchable RES Units Portfolios per Bidding Zone,
    - v. Non-Dispatchable RES Units Portfolios per Bidding Zone,
    - vi. Load Portfolios per Bidding Zone,
    - vii. Pumping Load from Dispatchable Pumped Storage Hydro Generating Units,
    - viii. RES Units Portfolio without Market Participation Obligation per Bidding Zone.
  - c) The Market Schedules related to the HETS Losses per Bidding Zone, as calculated in the results of the Day-Ahead Market and the Intra-Day Market.
2. The Distribution Network Operators shall notify the HETS Operator as soon as possible in case of disconnection:
  - a) of any component of the Distribution Network that may affect the normal operation of the HETS in real time,
  - b) of any load connected to the Distribution Network which may affect the zonal Load Forecast performed by the HETS Operator in the context of the Balancing Market operation, and
  - c) of any RES Unit connected to the their Distribution Network, which may affect the zonal RES Forecast performed by the HETS Operator in the context of the Balancing Market operation.
3. The Distribution Network Operators shall immediately notify the HETS Operator, on justifiable grounds, if they plan to have a load curtailment or any other Network operations that are expected to cause a decrease in load in excess of ten (10) MW at a specific point of connection to the HETS.
4. The Load Representatives that have submitted a Buy Order to the Electricity Markets managed by the Power Exchange are obliged to immediately notify the HETS Operator of any possible changes in the energy volumes that correspond to the load meters they represent. The Load Representatives that have not submitted a Buy Order to the Electricity Markets managed by the Power Exchange for load meters they represent on the Dispatch Day in question, in accordance with the Meter to Load Representative Correspondence Table as defined in the HETS Grid Code, are obliged to notify the HETS Operator of any possible changes in the total load they expect those load meters to offtake for each Dispatch Period of the Dispatch Day.
5. The RES Producers and/or RES Aggregators representing RES Units Portfolios, shall submit injection forecasts for each Dispatch Period of the Dispatch Day no later than two (2) hours prior to the execution of each scheduled ISP.

## CHAPTER 8

### HETS OPERATOR OBLIGATIONS

#### Article 38. HETS Operator Obligations

1. In the framework of the ISP, the HETS Operator shall prepare and then publish on its website the following forecasts for each Dispatch Period of the Dispatch Day, seven (7) hours before the Expiration of the Submission Deadline for the ISP:
  - a) The zonal Load Forecasts,
  - b) The zonal RES Units Forecasts,
  - c) the zonal and systemic upward and downward HETS needs in FCR, automatic FRR, and manual FRR.
2. The above forecasts shall be updated by the HETS Operator and published on its website three (3) hours prior to the execution of each scheduled ISP.
3. The HETS Operator shall keep records of the data and the parameters used for the above forecasts, as well as the results of such forecasts for each calendar year.
4. The HETS Operator shall not be liable for the accuracy of the forecasts it prepares in the framework of its obligations under this Rulebook.
5. The HETS Operator shall publish statistical data on the accuracy of the above forecasts within two (2) months from the end of each calendar year. The above data shall be communicated to RAE.
6. The HETS Operator shall determine the inter-zonal transfer capacity between the internal Bidding Zones and identify the imbalances in the import/export schedules in the interconnections for the execution of the ISP.
7. The HETS Operator shall publish on its website the availability of the Dispatchable Generating Units based on the Non-Availability Declarations three (3) hours prior to the execution of each scheduled ISP.
8. The HETS Operator shall calculate the constraints in the maximum daily energy injection from Dispatchable Natural Gas Units for the total of Dispatchable Natural Gas Units or for individual groups of Dispatchable Natural Gas Units after having received the volumes of the maximum daily Natural Gas consumption from DESFA.
9. The HETS Operator shall execute the ISP, it shall notify each Balancing Service Provider of the ISP results that refer to the Balancing Service Entities it represents and shall publish the results on its website.

#### Article 39. Zonal Load Forecasting

The HETS Operator shall prepare the zonal Load Forecasts for the Dispatch Periods under consideration, taking into account the following information:

- a) Historical data of Non-Dispatchable Load Portfolios and statistics deriving from the processing of the historical data, including, but not limited to, the evolution of load per energy use category,

- b) the weather forecast, historical data on load under similar weather conditions, comparable statistics, as well as the covariance of load and weather parameters,
- c) events that the HETS Operator already anticipates,
- d) operations in the HETS and/or the Distribution Network affecting the half-hourly energy offtake at a Transmission Meter, of which the HETS Operator has been informed, and
- e) other information collected and notified to the HETS Operator.

#### **Article 40. Zonal RES Units Forecasting**

The HETS Operator shall prepare the zonal RES Units Forecasts for the Dispatch Periods under consideration, taking into account the following information:

- a) historical data on injections of RES Units, as well as statistics deriving from the processing of the historical data,
- b) weather forecasts (wind speed, sunshine, etc.), historical data on injections of RES Units under similar weather conditions, comparable statistics, as well as the covariance of RES Units injections and weather parameters,
- c) events that the HETS Operator already anticipates,
- d) other information collected and notified to the HETS Operator.

#### **Article 41. Determination of Zonal/Systemic Balancing Capacity Needs**

The HETS Operator shall determine the zonal and system needs in Balancing Capacity for the (a) FCR, (b) automatic FRR and (c) manual FRR, in order to ensure an adequate system response / regulation / reserve within acceptable limits established in the HETS Grid Code, taking into account the particular characteristics of the HETS, as defined in the "Methodology for Determination of Zonal/Systemic Balancing Capacity Needs", which is approved by RAE upon recommendation by the HETS Operator in accordance with the provisions of article 18(4) of Law 4425/2016.

## **CHAPTER 9**

### **OBLIGATIONS OF BALANCING SERVICE PROVIDERS**

#### **Article 42. General Obligations of Balancing Service Providers**

1. Balancing Service Providers representing Dispatchable Generating Units have the obligation to submit to the HETS Operator:
  - a) ISP Balancing Energy Offers,
  - b) Balancing Capacity Offers,
  - c) Techno-Economic Declarations,
  - d) Non-Availability Declarations and
  - e) Major Outage Declarations.

2. Balancing Service Providers representing Dispatchable RES Units Portfolios or Dispatchable Load Portfolios are entitled to submit to the HETS Operator:
  - a) ISP Balancing Energy Offers and
  - b) Balancing Capacity Offers.
3. In case that the Balancing Service Providers representing Dispatchable RES Units Portfolios or Dispatchable Load Portfolios do submit to the HETS Operator ISP Balancing Energy Offers and/or Balancing Capacity Offers, they are required to submit for that particular Dispatch Day:
  - a) Techno-Economic Declarations,
  - b) Non-availability Declarations and
  - c) Major Outage Declarations.
4. The Balancing Service Providers representing Balancing Service Entities in Testing operation are required to submit to the HETS Operator Operation Schedule Declarations for the Units in Testing operation.
5. The Balancing Service Providers representing generating units / RES Units in Commissioning operation or Dispatchable Generating Units / RES Units in Testing operation are entitled to submit to the HETS Operator updated Commissioning or Testing operation schedules for their Units, for each Dispatch Period of the Dispatch Day, no later than one (1) hour prior to the execution of the ISP. The imbalances arising between the updated schedules and the Market Schedule for these Units shall be incorporated into the HETS Imbalance.
6. The Balancing Service Providers representing Dispatchable Hydro Generating Units have the obligation to submit to the HETS Operator Hydro Resources Management Declarations in accordance with CHAPTER 5 of this Rulebook.
7. The Balancing Service Providers representing Dispatchable Hydro Generating Units shall submit, if required, to the HETS Operator Declarations of Maximum Daily Energy Injection Constraint in accordance with CHAPTER 5 of this Rulebook. The Regulatory Authority for Energy, exercising its powers, shall check the above declarations.

#### **Article 43. Available Capacity**

1. Available Capacity means the Capacity of the Balancing Service Entity deriving from the Techno-Economic Declaration decreased by any non-available capacity which is declared as set out in this Chapter.
2. The Available Capacity of Dispatchable Generating Units is used in the ISP and the Balancing Energy Market.
3. Minimum Available Capacity means the Technically Minimum Generation, as modified by the Balancing Service Entity.
4. Maximum Available Capacity means the Maximum Net Capacity, as modified on the basis of the Non-Availability Declarations and the Major Outage Declarations by the Balancing Service Entity. In case of Total Non-Availability, Maximum Available Capacity is zero. In case of Partial Non-Availability, Maximum Available Capacity is modified on the basis of the Non-Availability Declaration.



#### Article 44. Techno-Economic Declarations

1. Balancing Service Providers representing Dispatchable Generating Units, Dispatchable Load Portfolios or Dispatchable RES Units Portfolios and having this obligation pursuant to Article 42 of this Rulebook, shall submit to the HETS Operator, separate Techno-Economic Declarations for each Balancing Service Entity they represent.
2. Balancing Service Providers representing Dispatchable Generating Units with Alternative Fuel are required to submit separate Techno-Economic Declarations for the operation both with the primary and the alternative fuel.
3. The Producers representing Dispatchable Multi-Shaft Combined Cycle Generating Units are additionally required to submit separate Techno-Economic Declarations for all possible configurations (combinations of gas turbine and steam turbine operation) of their Dispatchable Generating Units.
4. The Techno-Economic Declarations shall include the data of the following tables. The financial data of the Techno-Economic Declaration must reflect the actual operating costs of the Balancing Service Entities.

<b>A. Technical parameters</b>				
Description	Numerical value	Unit of measurement		
Maximum daily energy injection		MWh		
<b>B. Variable Cost Parameters for Dispatchable Thermal Generating Units</b>				
Fuel cost by fuel type	Fuel A		€/unit of quantitative measurement	
	Fuel B			
	Fuel C			
Lower Heating Value of Fuel by fuel type	Fuel A		GJ/unit of quantitative measurement	
	Fuel B			
	Fuel C			
Percentage composition of fuels on each capacity interval of the Specific Heat Consumption function.	Net Generation Level (MW)	Fuel A (%)	Fuel B (%)	Fuel C (%)
	1.			
	2.			
	3.			
	4.			
	5.			
	6.			
	7.			
	8.			
	9.			
10.				
Average Special cost of raw materials besides fuel for all capacity intervals	<b>Net Generation Level (MW)</b>		<b>Cost (euro/MWh)</b>	

of the Specific Heat Consumption function.		
Average Special cost of additional maintenance costs due to operation, (excluding fixed maintenance costs) for all capacity intervals of the Specific Heat Consumption function.	<b>Net Generation Level (MW)</b>	<b>Cost (euro/MWh)</b>
Average special cost of CO <sup>2</sup> emissions for all capacity intervals of the Specific Heat Consumption function.	<b>Net Generation Level (MW)</b>	<b>Cost (euro/MWh)</b>

5. The fuel cost referred to in the Techno-Economic Declarations corresponds to all costs incurred by the Balancing Service Provider for the supply of fuel irrespective of the type of individual cost factors. The cost per one unit of fuel quantity shall be calculated as if the fuel was supplied to the Balancing Service Provider by an independent third party at a uniform fuel price for each unit of fuel quantity. In case that fuel cost cannot be evidenced by documents, it shall be calculated as the ratio between the total expenses or the total cost for fuel supply, as recorded over a reasonable period of time, and the total quantity of fuel supplied to the Balancing Service Provider for the Dispatchable Generating Unit over the same period of time.
6. A Techno-Economic Declaration submitted for a Dispatchable Auto-producer Unit, shall refer only to the part of Unit Capacity that corresponds to the Registered Capacity of the Unit, as defined in the Balancing Market Generating Units Registry.
7. By the end of week W+1, the HETS Operator shall send to RAE the minimum variable cost of power generation incurred by the Dispatchable Thermal Generating Units for each day of Settlement Week W. The cost for each Dispatchable Thermal Generating Unit is calculated based on the data in the above table as set out in the "Variable Cost Parameters for Thermal Production Units Calculation Methodology".

#### **Article 45. Techno-Economic Declaration Submission Procedure**

1. Techno-Economic Declarations shall be submitted for each Dispatch Day, within the Deadline for Submission of the ISP Offers. During that period, Balancing Service Providers may submit Declarations for the Balancing Service Entities they represent as many times as they wish. Only the last validated Declarations shall be taken into consideration in the execution of the ISP.
2. The Techno-Economic Declaration may refer to one or more Dispatch Days. A more recent Techno-Economic Declaration shall replace the one preceding it, provided it is submitted in accordance with paragraph 1 of this Article.
3. Declarations submitted to the ISP shall be taken into consideration for the execution of ISP1, ISP2 and ISP3, as well as for any ad-hoc ISP. Any submission of a Techno-Economic Declaration after the Expiration of the Deadline for Submission of ISP Offers (for the first Dispatch Day to which the Declaration refers) shall not be accepted.

#### **Article 46. Acceptance and Rejection of the Techno-Economic Declaration by the HETS Operator**

The HETS Operator shall accept the Techno-Economic Declarations provided that they have been submitted in time and comply with the requirements set out in Article 44 and Article 45 of this Rulebook. In the event that a Techno-Economic Declaration does not meet the above requirements, the last legally submitted Declaration for the corresponding Dispatch Day shall apply.

#### **Article 47. Non-Availability Declarations**

1. The Balancing Service Provider is required to submit directly to the HETS Operator a Declaration of Total or Partial Non-Availability for each Dispatchable Generating Unit or Dispatchable RES Units Portfolio or Dispatchable Load Portfolio it represents and for which it has that obligation according to Article 42 of this Rulebook for each Dispatch Day on which the Balancing Service Entity has a reduced Available Capacity in comparison to the one arising out of the Declared Characteristics. Reduced Available Capacity may occur in case of failure for technical reasons, related to the operation or the safety of its facilities, or for other reasons, which make it impossible to generate electricity and/or provide Balancing Services at the level of Maximum Net Capacity.
2. The Producers representing Dispatchable Units with Alternative Fuel are required to submit separate Non-Availability Declarations for the operation of their Dispatchable Generating Units both with the primary and the alternative fuel.
3. The Producers representing Dispatchable Multi-Shaft Combined Cycle Generating Units are obliged to submit separate Non-Availability Declarations for each configuration of their Dispatchable Generating Units.
4. The Total or Partial Non-Availability Declarations shall include at least the following:
  - α) the Dispatch Periods within a Dispatch Day or the Dispatch Days when non-availability is expected to occur,
  - β) the Non-Available Capacity for each Dispatch Period of the Dispatch Day or Dispatch Days, and
  - γ) a detailed technical description of the reasons for the total or partial non-availability.
5. Without prejudice to the provisions of Article 49 hereof, Non-Availability Declarations shall remain in effect for all the Dispatch Periods to which they refer, unless they are revoked or amended by the Balancing Service Providers that submitted them.

#### **Article 48. Major Outage Declaration**

1. The Balancing Service Provider is required to submit directly to the HETS Operator a Major Outage Declaration for each Dispatchable Generating Unit or Dispatchable RES Units Portfolio or Dispatchable Load Portfolio it represents and for which it has that obligation under Article 42 of this Rulebook, for each Dispatch Day on which the inability exists, if the respective Balancing Service Entity is unable to operate for technical reasons, for a period that is expected to exceed a continuous period of ten (10) days in periods of high-demand (from 15th June to 15th August and from 10th December to 31st January) and two months for the remainder of the year.

2. The Producers representing Dispatchable Generating Units with Alternative Fuel are required to submit separate Major Outage Declarations for the operation of their Dispatchable Generating Units both with the primary and the alternative fuel.
3. The Producers representing Dispatchable Multi-Shaft Combined Cycle Generating Units are obliged to submit separate Major Outage Declarations for each configuration of their Dispatchable Generating Units.
4. The Major Outage Declarations shall include at least the following:
  - α) the Dispatch Days on which the failure is expected to occur
  - β) a detailed technical description of the causes of the failure and the expected recovery time.
5. Major Outage Declarations shall remain in effect for all the Dispatch Periods to which they refer, unless they are revoked or amended by the Balancing Service Providers that submitted them.

**Article 49. Acceptance and Rejection of Non-Availability Declarations and Major Outage Declarations**

1. The HETS Operator shall accept the submitted Non-Availability or Major Outage Declarations provided they meet the conditions of this Chapter. In case the submitted Declarations do not meet the conditions of this Chapter, the Declarations shall not be accepted by a reasoned decision of the Operator, which shall be notified to the Balancing Service Provider and to RAE.
2. The Balancing Service Provider is entitled to object to the decision of the HETS Operator within five (5) days from the notification of the decision. The HETS Operator shall issue a final reasoned decision on the objection within five (5) days from the notification of the objection. If no decision is issued within that period, the objection shall be considered to have been tacitly rejected.
3. In case the Partial Non-Availability Declaration or the Total Non-Availability Declaration or the Major Outage Declaration for a Dispatch Period is rejected, the Available Capacity of the Dispatchable Generating Unit shall be equal to Maximum Available Capacity.

**CHAPTER 10**

**BALANCING CAPACITY OFFERS TO THE ISP**

**Article 50. Submission of Balancing Capacity Offers to the ISP**

1. Balancing Capacity Offers represent the intention to provide reserves for the Balancing Capacity products referred to in Article 36, paragraph 7 of this Rulebook:
  - a) Upward and downward FCR,
  - b) Upward and downward automatic FRR, and
  - c) Upward and downward manual FRR.

2. The Balancing Service Providers representing Dispatchable Generating Units that are registered in the Balancing Market Generating Units Registry are obliged to submit to the ISP, for each Balancing Capacity product:
  - a) an upward Balancing Capacity Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total upward Balancing Capacity quantity that corresponds to the Registered Characteristics, and
  - b) a downward Balancing Capacity Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total downward Balancing Capacity quantity that corresponds to the Registered Characteristics.
3. The Producers representing Dispatchable Generating Units with Alternative Fuel are obliged to submit separate Balancing Capacity Offers for the operation both with the primary and the alternative fuel.
4. The Producers representing pumped storage Dispatchable hydro Generating Units are obliged to submit separate Balancing Capacity Offers for generation and pumping. The submission of Balancing Capacity Offers for the pumping operation is not obligatory.
5. The Producers representing Dispatchable Multi-Shaft Combined Cycle Generating Units are required to submit separate Balancing Capacity Offers for each configuration of their Units.
6. The Balancing Service Providers representing Dispatchable RES Units Portfolios are entitled to submit to the ISP:
  - a) an upward Balancing Capacity Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total upward Balancing Capacity quantity that corresponds to the Registered Characteristics (Maximum contribution to FCR, Maximum contribution to automatic FRR, Maximum contribution to manual FRR), and
  - b) a downward Balancing Capacity Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total downward Balancing Capacity quantity that corresponds to the Registered Characteristics (Maximum contribution to FCR, Maximum contribution to automatic FRR, Maximum contribution to manual FRR).
7. The Balancing Service Providers representing Dispatchable Load Portfolios are entitled to submit to the ISP:
  - a) an upward Balancing Capacity Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total quantity which shall be no higher than the total technical capacity to provide upward Balancing Capacity, and
  - b) a downward Balancing Capacity Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day for a total quantity which is no higher than the total technical capacity to provide downward Balancing Capacity.
8. The offers submitted to the ISP shall be taken into consideration for the execution of ISP1, ISP2 and ISP3, as well as for any ad-hoc ISP. A re-submission of Offers before ISP2 and ISP3 or for any ad-hoc ISP is not allowed.

#### **Article 51. Content of the Balancing Capacity Offers**

1. The Balancing Capacity Offers for each Balancing Service Entity and for each Dispatch Period shall consist of individual steps and shall refer to all types of Balancing Capacity

- for which their Balancing Service Entities have the required technical capacity as per their Registered Characteristics. Each step shall contain the price of the Balancing Capacity Offer in €/MW, accurate to two (2) decimal places, and the quantity of the Balancing Capacity Offer in MW, accurate to one (1) decimal place. The minimum quantity of the Balancing Capacity Offer shall be equal to one (1) MW.
2. The upward Balancing Capacity Offer shall include between one (1) and ten (10) steps. The Balancing Capacity Offer price for each successive step may not be reduced in relation to the price of the Offer for the preceding step.
  3. The downward Balancing Capacity Offer shall include between one (1) and ten (10) steps. The Balancing Capacity Offer price for each successive step may not be reduced in relation to the price of the Offer for the preceding step.
  4. In the stepwise Balancing Capacity Offers of the Dispatchable Load Portfolios, the Balancing Service Providers are entitled to include a specific quantity of Balancing Capacity per step, which is offered as a whole and can, therefore, either be accepted in its entirety or rejected in its entirety by the ISP.
  5. The Balancing Capacity Offers for each Dispatch Period of the Dispatch Day shall be submitted separately for upward and downward FCR Balancing Capacity, for upward and downward automatic FRR Balancing Capacity and for upward and downward manual FRR Balancing Capacity. The price for each step of the above offers shall be greater or equal to the Balancing Capacity Offer Minimum Price and less than or equal to the Balancing Capacity Maximum Price for each type of reserve. The above Balancing Capacity Offer Prices shall be submitted in €/MW per hour per Dispatch Period and shall be accurate to two (2) decimal places.
  6. The numerical values of the Balancing Capacity Offer Minimum Price and the Balancing Capacity Offer Maximum Price are specified in the Technical Decision of the HETS Operator “Technical limits on bidding and clearing prices”. This Technical Decision shall be issued at least two (2) months prior to the date of enforcement of the new values of the above limits.

#### **Article 52. Amendment and Acceptance of the Balancing Capacity Offers**

1. In the event that a Balancing Capacity Offer is not submitted in accordance with Article 50 and Article 51, the Balancing Capacity Offer for all Dispatch Periods of the Dispatch Day shall be automatically rejected by the Balancing Market System. In that case, the grounds for the rejection shall be notified to the Balancing Service Providers through the Balancing Market System. The Balancing Service Provider may re-submit a Balancing Capacity Offer until the Expiration of the Deadline for the Submission of ISP Offers. If the Balancing Capacity Offer is submitted in accordance with Article 50 and Article 51, the Balancing Capacity Offer shall be validated. Only the last validated Balancing Capacity Offers shall be taken into consideration for the execution of the ISP.
2. After the Expiration of the Deadline for the Submission of ISP Offers, the Balancing Capacity Offers cannot be modified and shall be used as they are for the solution of ISP1, ISP2 and ISP3.

#### **Article 53. Consequences of non-submission of Balancing Capacity Offers**

1. In case of non-submission or non-acceptance of Balancing Capacity Offers for a Dispatch Day in connection with a Balancing Service Provider that is obliged to submit a Balancing



- Capacity Offer in accordance with Article 50, the HETS Operator shall impose on such Provider a Non-Compliance Charge for that Dispatch Day, as described in CHAPTER 21.
2. Apart from imposing the Non-Compliance Charge referred to in paragraph 1 of this Article, the Balancing Market System shall automatically create Balancing Capacity Offers for the respective Dispatchable Generating Unit and for all Dispatch Periods of the Dispatch Day, establishing prices equal to the corresponding prices included in the last validated Balancing Capacity Offer of the previous day. The Offers which are created automatically by the Balancing Market System shall be considered as having been submitted by the Participant and shall produce all the results provided for in this Rulebook, as if these Offers had been submitted by the Participant.

## **CHAPTER 11**

### **BALANCING ENERGY OFFERS TO THE ISP**

#### **Article 54. Submission of Balancing Energy Offers to the ISP**

1. An ISP Balancing Energy Offer corresponds to the intention to provide upward or downward Balancing Energy in relation to the Market Schedule of the respective Balancing Service Entity.
2. An upward ISP Balancing Energy Offer is:
  - a) the possibility of increase in the production level of the Dispatchable Generating Units and Dispatchable RES Units Portfolios in comparison to their Market Schedule,
  - b) the possibility of decrease in the consumption level of Dispatchable Load Portfolios in comparison to their Market Schedule.
3. A downward ISP Balancing Energy Offer is:
  - a) the possibility of decrease in the production level of the Dispatchable Generating Units and Dispatchable RES Units Portfolios in comparison to their Market Schedule,
  - b) the possibility of increase in the consumption level of Dispatchable Load Portfolios in comparison to their Market Schedule.
4. The Balancing Service Providers representing Dispatchable Generating Units registered in the Balancing Market Generating Units Registry are obliged to submit to the ISP:
  - a) an upward ISP Balancing Energy Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total upward Balancing Energy quantity equal to the Maximum Net Capacity of the Balancing Service Entity as set out in its Registered Characteristics, and
  - b) a downward ISP Balancing Energy Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total downward Balancing Energy quantity equal to the Maximum Net Capacity of the Balancing Service Entity as set out in its Registered Characteristics.
5. The Producers representing Dispatchable Generating Units with Alternative Fuel are obliged to submit separate Balancing Energy Offers for their operation both with the primary and the alternative fuel.

6. The Producers representing pumped storage Dispatchable hydro Generating Units are obliged to submit separate Balancing Energy Offers for generation and pumping. The submission of Balancing Energy Offers for pumping is not obligatory.
7. The Producers representing Dispatchable Multi-Shaft Combined Cycle Generating Units are obliged to submit separate Balancing Energy Offers for each configuration of their Dispatchable Generating Units.
8. The Balancing Service Providers representing Dispatchable RES Units Portfolios are entitled to submit to the ISP:
  - a) an upward ISP Balancing Energy Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total upward Balancing Energy quantity which shall be no higher than the Registered Capacity of the Balancing Service Entity as set out in its Registered Characteristics and
  - b) a downward ISP Balancing Energy Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day, for a total downward Balancing Energy quantity which shall be no higher than the Registered Capacity of the Balancing Service Entity as set out in its Registered Characteristics.
9. The Balancing Service Providers representing Dispatchable Load Portfolios are entitled to submit to the ISP:
  - a) an upward ISP Balancing Energy Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day for a total upward Balancing Energy quantity which shall be no higher than the full technical capacity to provide upward Balancing Energy, and
  - b) a downward ISP Balancing Energy Offer per Balancing Service Entity for each Dispatch Period of the Dispatch Day for a total downward Balancing Energy quantity which is no higher than the full technical capacity to provide downward Balancing Energy.
10. The Balancing Service Providers representing Dispatchable RES Units Portfolios or Dispatchable Load Portfolios are obliged to submit upward and downward Balancing Energy Offers to the ISP, provided that they also submit the corresponding Balancing Capacity Offers.
11. The offers submitted to the ISP shall be taken into consideration for the execution of ISP1, ISP2 and ISP3, as well as for any ad-hoc ISP. The re-submission of Offers is not allowed after the Expiration of the Deadline for the Submission of ISP Offers.
12. In the event that it is impossible to cover the expected imbalances and/or the zonal/systemic Balancing Capacity requirements for a Dispatch Period of the Dispatch Day, the HETS Operator shall be entitled to submit an ISP Balancing Energy Offer, for each of the Contracted Units for each Dispatch Period of the Dispatch Day. The Offer price (€/MWh) shall be determined on the basis of the relevant Supplementary System Energy Contract.

#### **Article 55. Content of the ISP Balancing Energy Offers**

1. The upward and downward ISP Balancing Energy Offers for each Balancing Service Entity and for each Dispatch Period shall consist of individual steps. Each step shall contain the price of the Balancing Energy Offer in €/MW, accurate to two (2) decimal places, and a quantity representing the generation/load level of the Balancing Service Entity in MW, accurate to one (1) decimal place. The minimum quantity of the Offer shall be equal to one (1) MW.

2. The upward ISP Balancing Energy Offer shall include between one (1) and ten (10) steps. The price of the ISP Balancing Energy Offer for each successive step may not be reduced in relation to the price of the Offer for the preceding step.
3. The quantity of the upward ISP Balancing Energy Offer taken into account in the ISP corresponds to the difference between the Available Capacity of the Balancing Service Provider and the capacity resulting from the Balancing Service Provider's Market Schedule, as in force at the time of submission of the Offer.
4. The downward ISP Balancing Energy Offer shall include between one (1) and ten (10) steps. The price of the ISP Balancing Energy Offer for each successive step may not be increased in relation to the price of the Offer for the preceding step.
5. The quantity of the downward ISP Balancing Energy Offer corresponds to the difference between zero quantity and the capacity resulting from the Balancing Service Provider's Market Schedule as in force at the time of submission of the Offer.
6. The ISP Balancing Energy Offer prices must be within the Balancing Energy Offer Maximum Price and the Balancing Energy Offer Minimum Price, as in force for the Dispatch Period to which the Balancing Energy Offer corresponds.
7. The numerical values of the Balancing Energy Offer Minimum Price and the Balancing Energy Offer Maximum Price are specified in the Technical Decision of the HETS Operator "Technical limits on bidding and clearing prices". This Technical Decision shall be issued at least two (2) months prior to the date of enforcement of the new values of the above limits.
8. In the stepwise ISP Balancing Energy Offers of the Dispatchable Load Portfolios, the Balancing Service Providers are entitled to include a specific quantity per step, which is offered as a whole and can, therefore, either be accepted in its entirety or rejected in its entirety by the ISP.

#### **Article 56. Amendment and Acceptance of the ISP Balancing Energy Offers**

1. In the event that an ISP Balancing Energy Offer was not submitted in accordance with Article 54 and Article 55, the ISP Balancing Energy Offer for all Dispatch Periods of the Dispatch Day shall be automatically rejected by the Balancing Market System. In case of rejection, the grounds for the rejection shall be notified to the Balancing Service Providers through the Balancing Market System. The Balancing Service Provider may re-submit an ISP Balancing Energy Offer until the Expiration of the Deadline for the Submission of ISP Offers. If the ISP Balancing Energy Offer is submitted in accordance with Article 54 and Article 55, the ISP Balancing Energy shall be validated. Only the last validated ISP Balancing Energy Offers shall be considered for the execution of the ISP.
2. After the Expiration of the Deadline for the Submission of ISP Offers, the **ISP** Balancing Energy Offers cannot be modified and shall be used as they are for the execution of ISP2 and ISP3.

#### **Article 57. Consequences of non-submission of ISP Balancing Energy Offers**

1. In case of non-submission of ISP Balancing Energy Offers for a Dispatch Day in connection to a Balancing Service Provider that is obliged to submit an ISP Balancing Energy Offer in accordance with Article 54, the HETS Operator shall impose on such Provider a Non-Compliance Charge for that Dispatch Day, as described in CHAPTER 21

2. Apart from imposing the Non-Compliance Charge referred to in paragraph 1 of this Article, the Balancing Market System shall automatically create ISP Balancing Energy Offers for the respective Dispatchable Generating Unit and for all Dispatch Periods of the Dispatch Day, setting bidding prices equal to the corresponding prices of the last validated ISP Balancing Energy Offer of the Balancing Service Entity on the previous day. The Offers which are created automatically by the Balancing Market System shall be considered as having been submitted by the Participant and shall produce all the results provided for in this Rulebook, as if these Offers had been submitted by the Participant.

## **CHAPTER 12**

### **EXECUTION OF THE INTEGRATED SCHEDULING PROCESS**

#### **Article 58. Data of Integrated Scheduling Process**

1. The HETS Operator shall execute the ISP based on the following data, for each Dispatch Period concerned:
  - a) The price - quantity pairs of the stepwise ISP Balancing Energy Offers.
  - b) The price-quantity pairs of the Balancing Capacity Offers for upward and downward FCR, upward and downward automatic FRR and upward and downward manual FRR.
  - c) The Registered Characteristics of the Balancing Service Entities.
  - d) The Techno-Economic Declarations submitted by the Balancing Service Providers for the Balancing Service Entities they represent.
  - e) The Total and Partial Non-Availability Declarations and the Major Outage Declarations submitted by the Balancing Service Providers for the Balancing Service Entities they represent.
  - f) The operational status of the Balancing Service Entities at the start of the scheduling period, namely the number of half-hours already in operation or out of operation and the scheduled injection or consumption at the start of the ISP scheduling period.
  - g) The Market Schedules of all the Balancing Service Entities.
  - h) Any updates to the scheduled operation of the generating units/RES Units in Commissioning operation.
  - i) Any updates to the scheduled operation of the Dispatchable Generating Units/RES Units in Testing operation.
  - j) The mandatory schedules for hydroelectric power generation, as submitted by the respective Producers to the HETS Operator through the daily mandatory hydro injection declarations.
  - k) The zonal Load Imbalances.
  - l) The zonal RES Units Imbalances.
  - m) The available flows in the Inter-Zonal Corridors.
  - n) The import/export schedule Imbalances at the interconnections imposed by the HETS Operator.

- o) The zonal and systemic needs of the HETS in Balancing Capacity.
  - p) Events that are notified to the HETS Operator, in accordance with the HETS Grid Code.
  - q) The declarations of maximum daily energy injection constraint.
  - r) Other information collected and/or notified to the HETS Operator in accordance with the HETS Grid Code, as well as other technical data and simulation data regarding the operation of the HETS.
2. On the basis of the data sent by the Power Exchange, the HETS Operator shall determine:
- a) the Final Internal Schedules per Dispatch Period of the Dispatch Day, which correspond to Balancing Service Entities and Balance Responsible Entities in Greece and are equal to the Market Schedules sent by the Power Exchange, and
  - b) the Final External Schedules per Dispatch Period of the Dispatch Day, which correspond to import/export schedules at the interconnections, and take into account the Market Schedules, the schedules among Transmission System Operators, any imbalances due to technical constraints on interconnection lines and the import/export imbalances included in the latest Physical Transmission Rights Declarations of the Participants, caused:
    - i. either by the difference between the imported quantity included in the Market Schedule of a Participant and his nomination of long-term Physical Transmission Rights for electricity imports through an interconnection where there is an obligation for physical delivery,
    - ii. or by the difference between the quantities of energy sold/bought on the Day-Ahead Market that correspond to the short-term Physical Transmission Rights and the quantities of energy sold/bought on the Day-Ahead Market(s) of neighboring countries that correspond to the same short term Physical Transmission Rights.

### **Article 59. Integrated Scheduling Process Optimization Methodology and Algorithm**

1. The ISP is executed as a Mixed Integer Linear Programming model.
2. If the Balancing Energy prices of the ISP Balancing Energy Offers for the same Dispatch Period arithmetically coincide, and the respective Balancing Energy quantities of such ISP Balancing Energy Offers are not fully included in the ISP results, the bidding sections shall be selected in the following order of priority: (a) Dispatchable RES Units Portfolio, (b) Dispatchable hydro Generating Units, (c) Dispatchable Load Portfolio, and (d) Dispatchable thermal Generating Units. Among bidding sections under the same category, priority shall be given to the sections of the offers corresponding to the Balancing Service Entity with the highest Ramp Up Rate. For bidding sections that come into the same category and have the same Ramp Up Rate there will be random selection.
3. If the Balancing Capacity prices of the Balancing Capacity Offers for the same Dispatch Period arithmetically coincide, and the respective Balancing Capacity quantities of those Balancing Capacity Offers are not fully included in the ISP results, the bidding sections shall be selected in the following order of priority: (a) Dispatchable RES Units Portfolio, (b) Dispatchable hydro Generating Units, (c) Dispatchable Load Portfolio, and (d) Dispatchable thermal Generating Units. Among bidding sections in the same category,



priority shall be given to the sections of the offers corresponding to the Balancing Service Entity with the highest Ramp Up Rate. For bidding sections that come into the same category and have the same Ramp Up Rate there will be random selection.

4. The Integrated Scheduling Process Optimization Algorithm is briefly described as follows:
  - α) The ISP execution produces:
    - i. the commitment status (synchronization or de-synchronization) of each Balancing Service Entity, for each Dispatch Period of the Dispatch Day,
    - ii. the upward and downward Balancing Capacity for FCR in MW per Balancing Service Entity for each Dispatch Period of the Dispatch Day,
    - iii. the upward and downward Balancing Capacity for automatic FRR in MW per Balancing Service Entity for each Dispatch Period of the Dispatch Day,
    - iv. the upward and downward Balancing Capacity for manual FRR in MW per Balancing Service Entity for each Dispatch Period of the Dispatch Day, and
    - v. the inter-zonal flows.
  - β) The algorithm works in such a way that the total Balancing Energy and Balancing Capacity procurement cost is minimized. The total cost of Balancing Energy procurement may include the estimated cost for the activation of Balancing Capacity in real time, Total cost of Balancing Energy and Balancing Capacity procurement means the sum of the Balancing Energy and Balancing Capacity procurement for all Dispatch Periods of Dispatch Day D in the case of ISP1 and ISP2, or for the remaining Dispatch Periods of Dispatch Day D in the case of ISP3 and any other solution of any ad-hoc ISP during the Dispatch Day.
  - γ) The algorithm must comply with the following constraints:
    - i. the HETS Imbalances constraint, according to which the sum of the allocated upward and downward ISP Balancing Energy is equal to the forecasted HETS Imbalances, per Bidding Zone and in total,
    - ii. the inter-zonal constraints,
    - iii. the sum of the Balancing Capacity for FCR of all Balancing Service Entities that have been chosen to provide Balancing Capacity for FCR must be greater than or equal to the total requirements per Bidding Zone or/and of HETS as a whole in upward and downward Balancing Capacity for FCR,
    - iv. the sum of the Balancing Capacity for automatic FRR of all Balancing Service Entities that have been chosen to provide Balancing Capacity for automatic FRR must be greater than or equal to the total requirements per Bidding Zone or/and of HETS as a whole or of the bidding zone in upward and downward Balancing Capacity for automatic FRR,
    - v. the sum of the Ramp Up or Ramp Down Rates of the Balancing Service Entities that have been chosen to provide Balancing Capacity for automatic FRR must be greater than or equal to the total requirements of HETS in Ramp Up and Ramp Down Rate for automatic FRR,
    - vi. the sum of the Balancing Capacity for manual FRR of all Balancing Service Entities that have been chosen to provide Balancing Capacity for manual FRR



- must be greater than or equal to the total requirements per Bidding Zone or/and of HETS as a whole in upward and downward Balancing Capacity for manual FRR,
- vii. the updated operation schedules of generating units/RES Units in Commissioning operation,
  - viii. the updated operation schedules of Dispatchable Generating Units/RES Units in Testing operation,
  - ix. the daily mandatory hydro management declarations,
  - x. the technical constraints of the Dispatchable Generating Units that are included in their Declared Characteristics such as Balancing capacity supply constraints, Balancing Energy constraints, Technically Minimum Generation and Maximum Net Capacity and Available Capacity constraints under normal operation or under AGC, synchronization time, soak time and de-synchronization time, time and output of the Dispatchable Generating Unit between synchronization and the Technically Minimum Generation, the logical status of commitment constraints, the minimum up/down time constraints, the ramp rate of power output and Balancing Capacity of the Units constraints,
  - xi. the constraints in the maximum daily energy injection from Dispatchable Natural Gas Generating Units,
  - xii. the constraints in the maximum daily energy injection from Dispatchable hydro Generating Units based on the declarations of maximum daily energy injection constraints from Dispatchable hydro Generating Units,
  - xiii. in each Dispatch Period the Pumped Storage Dispatchable hydro Generating Units shall operate either as Dispatchable Generating Units or as pumping loads,
  - xiv. in each Dispatch Period the Dispatchable Generating Units with Alternative Fuel shall produce either with the primary or with the secondary fuel,
  - xv. in each Dispatch Period the Dispatchable Multi-Shaft Combined Cycle Generating Units shall operate only in one configuration.
5. In the event that it is impossible to cover the forecasted imbalances and/or the zonal/systemic Balancing Capacity requirements for a certain Dispatch Period of the Dispatch Day, the HETS Operator shall take the following action:
    - a) include ISP Balancing Energy Offers for Generating Contracted Units, and
    - b) re-execute the ISP problem in order to attain a feasible solution.
  6. If, after attaining the ISP solution, according to paragraph 5 of this Article, infeasibilities still occur in covering the imbalances and/or the zonal / systemic Balancing Capacity requirements, the constraints shall be gradually lifted and the ISP shall be executed again. The constraints shall be lifted in the following order:
    - a) First, the Balancing Capacity requirements constraint for upward and downward manual FRR is not implemented,
    - b) Then, the Balancing Capacity requirements constraint for upward and downward automatic FRR is not implemented,
    - c) Afterwards, the Balancing Capacity requirements constraint for upward and downward FCR is not implemented,

- d) Finally, the HETS Imbalances constraint is not implemented.
7. The Dispatchable Generating Units with Alternative Fuel may operate on the alternative fuel for the Dispatch Days for which the National Natural Gas System (ESFA) Operator has placed the ESFA at alert level (alert level 2) or at emergency level (alert level 3) according to the Emergency Plan. The fuel, primary or alternative, of the Dispatchable Generating Units with Alternative Fuel in the above cases shall be decided on the basis of the ISP results. The Dispatchable Generating Units with Alternative Fuel may only operate on one of the two fuel types in each Dispatch Period. The ISP algorithm shall take into account the Declared Characteristics corresponding to the fuel selected for each Dispatch Period.
  8. The HETS Operator shall include in the ISP data the declarations of maximum daily energy injection constraint from Dispatchable Natural Gas Generating Units. The quantity of injected electricity that is included in the ISP for the Dispatchable Natural Gas Generating Units, to which the submitted declarations of maximum daily energy injection constraint from Dispatchable Natural Gas Generating Units refer, may not exceed the quantity specified in the above declarations.
  9. The HETS Operator shall include in the ISP data the declarations of maximum daily energy injection constraint from Dispatchable hydro Generating Units. The quantity of injected electricity that is included in the ISP for the Dispatchable hydro Generating Units, to which the submitted declarations of maximum daily energy injection constraint from Dispatchable hydro Generating Units refer, may not exceed the quantity specified in the above declarations.

#### **Article 60. Results of the Integrated Scheduling Process**

1. The results of the ISP, shall provide:
  - a) the commitment / decommitment schedule of the Balancing Service Entities,
  - b) the Balancing Capacity for FCR, manual FRR and automatic FRR in any direction (upward and downward) for each Balancing Service Entity and for each Dispatch Period of the Dispatch Day.
2. An indicative generation schedule shall also results from the ISP, for each Balancing Service Entity and for each Dispatch Period of the Dispatch Day ("ISP schedule"). The differences between the ISP schedule and the automatic Dispatch Instruction mechanism (Balancing Energy Market) shall not be considered deviations from the ISP.
3. Without prejudice to paragraph 4 of this Article, as for the results of the ISP for Balancing Capacity, the following shall apply:
  - a) The results of ISP1 shall not be binding.
  - b) The results of ISP2 shall be binding for the first twenty-four (24) Dispatch Periods of Dispatch Day D.
  - c) The results of ISP3 shall be binding for the last twenty-four (24) Dispatch Periods of Dispatch Day D.
  - d) The results of the ad-hoc ISPs shall be binding for the Dispatch Periods to which they refer.
4. The results of all ISP executions shall be binding with regard to the commitment schedule of the Balancing Service Entities.

5. The Balancing Service Providers are obliged to comply with the binding results of the ISP executions. In case of non-compliance, the Balancing Service Providers shall not be entitled to a fee and shall be subject to Non-Compliance Charges, in accordance with CHAPTER 21 of this Rulebook.
6. The HETS Operator shall publish the results forty-five (45) minutes after the execution of each ISP. Within the same deadline, it shall inform the Balancing Service Providers whose Balancing Energy and Balancing Capacity Offers were submitted to the ISP and accepted of the results of the ISP that concern them.
7. The HETS Operator may deviate from the results of the ISP in all cases where it has substantiated evidence to consider that such a deviation is necessary so as to ensure the safe operation of the HETS and the smooth operation of the Balancing Market.

**Article 61. Surveillance of the Results of the Integrated Scheduling Process**

Until 11:00 EET on each D+1 calendar day, the HETS Operator shall notify RAE of all the data, the parameters and the results of the ISP that were executed on Dispatch Day D in editable form, in order for the Authority to supervise the normal operation of the ISP and to identify possible distortions in the results of the ISP and the scheduling of the Balancing Service Entities.

## SECTION III

### BALANCING ENERGY MARKET

#### CHAPTER 13

#### GENERAL PROVISIONS

##### Article 62. Scope

This Section presents:

- a) the obligations of the HETS Operator in the framework of the Balancing Energy Market,
- b) the obligations of the Balancing Service Providers in the framework of the Balancing Energy Market,
- c) The transmission of data between the Integrated Scheduling Process and the Energy Balancing Market,
- d) the conditions and the procedure for the submission of Balancing Energy Offers by the Balancing Service Providers for the Balancing Service Entities,
- e) details regarding input data, the optimization model, the clearing methodology, and the Balancing Energy Market results, and
- f) the Dispatch Instructions issued for each of the Balancing Service Providers.

##### Article 63. General Provisions

1. The Balancing Energy Market is the market in which quantities and prices are determined for the activation of Balancing Energy by the respective Balancing Service Providers, in order to balance energy supply and demand, taking into account the Market Schedules and the state of the HETS in real time. The Balancing Energy Market includes the manual FRR process and the automatic FRR process.
2. In the Balancing Energy Market, the following products are used:
  - a) The upward and downward Balancing Energy for manual FRR, which is activated by executing the manual FRR process for each manual FRR Time Unit. The Balancing Service Providers shall submit Balancing Energy Offers for manual FRR, that is, Balancing Energy Offers that correspond to the activation of the manual FRR.
  - b) The upward and downward Balancing Energy for automatic FRR, which is activated through the operation of the Automatic Generation Control. The Balancing Service Providers shall submit Balancing Energy Offers for automatic FRR, that is, Balancing Energy Offers that correspond to the activation of the automatic FRR.
3. The manual FRR Time Unit is defined as the 15-minute period, starting at 01:00 EET on the Dispatch Day. The manual FRR process is executed periodically for each manual FRR Time Unit.
4. The manual FRR process shall adopt, without modification or review, the binding results of the ISP for each Balancing Service Entity unless the Entity in question is subject to a

forced interruption, resulting from the submission of a Partial or Total Non-Availability Declaration or a Major Outage Declaration. In that case, the Balancing Service Entity shall be considered unavailable and the ISP may be executed again.

5. The Balancing Capacity for FCR, automatic FRR, and manual FRR, determined in the ISP, as per Article 59 of this Rulebook, shall remain in effect during all Dispatch Periods of the Dispatch Day. In case that a Balancing Service Entity is not available due to a failure, the ISP may be executed again in order to award a Balancing Capacity for the FCR, automatic FRR and manual FRR that are actually available.

#### **Article 64. HETS Operator Responsibilities**

1. The HETS Operator:
  - a) shall collect, in real time, the telemetered electricity generation/consumption values of the Balancing Service Entities
  - b) shall realize very short-term zonal Load Forecasts for the manual FRR Time Unit of each manual FRR process that is performed,
  - c) shall realize very short-term zonal Forecasts for RES Units for the manual FRR Time Unit of each manual FRR process that is performed,
  - d) shall receive any updated Balancing Energy Offers and the Non-Availability Declarations of the Participants,
  - e) shall operate the Use Declaration Submission System of the HETS Operator,
  - f) shall calculate the zonal Imbalances to be covered by activating Balancing Energy Offers,
  - g) shall calculate the remaining available flows of the inter-zonal corridors for executing the manual FRR process,
  - h) shall perform the manual and automatic FRR processes,
  - i) shall issue and send Dispatch Instructions to the Balancing Service Entities,
  - j) shall issue and send Automatic Generation Control Instructions to the Balancing Service Entities,
  - k) shall monitor the compliance of Balancing Service Entities with Dispatch Instructions,
  - l) shall manage and use the Dispatch information Administration System and
  - m) shall submit information to the Transparency Platform of the European Network of Transmission System Operators for Electricity (ENTSO-e) and the Agency for the Cooperation of Energy Regulators (ACER).
2. The HETS Operator is obliged to maintain a complete database on the dispatch process, including:
  - a) an ISP Schedule record,
  - b) a Dispatch Instructions record,
  - c) a proof of delivery record for the Dispatch Instructions.
3. The information contained in the above records shall be kept by the HETS Operator for at least five (5) years from their entry. Upon a reasoned request, the Balancing Service Providers shall have the right to access the above information for their Balancing Service

Entities as well as for other Balancing Service Entities only in the context of dispute settlement in accordance with the procedure set out in the HETS Grid Code.

### **Article 65. Dispatch Instructions**

1. The HETS Operator shall issue Dispatch Instructions to the Dispatchable Generating Units whereby it shall determine the Active Power generation, their synchronization or de-synchronization with the HETS, the provision of Reserves and other Ancillary Services and, in general, their mode of operation. The System Operator shall issue Dispatch Instructions to the other Balancing Service Entities whereby it shall determine the injection or offtake of Active Power, the provision of Reserves and other Ancillary Services and, in general, their mode of operation.
2. In particular, the Dispatch Instructions issued by the HETS Operator in the framework of the Balancing Market, shall be as follows:
  - a) Commitment Dispatch Instructions (i.e. synchronization Dispatch Instructions for the Dispatchable Generating Units) or decommitment (i.e. de-synchronization Dispatch Instructions for the Dispatchable Generating Units) in the framework of the ISP.
  - b) Manual FRR Dispatch Instructions
  - c) Automatic FRR Dispatch Instructions
3. In addition to the above Dispatch Instructions, the HETS Operator shall issue other instructions for the activation of Balancing Energy Offers for manual FRR for purposes other than balancing, in order to ensure the reliable operation of the HETS, in particular as regards the HETS frequency, voltage and current at important nodes or elements of the HETS. The Balancing Energy Offers for manual FRR that are activated for purposes other than balancing shall be marked with indications.
4. The Dispatch Instructions shall be issued by the HETS Operator to the Balancing Service Entities through the Dispatch information Administration System, or verbally.
5. In case of interruption or failure of the Dispatch information Administration System, which makes the issuing of Dispatch Instructions impossible, alternative ways of communication, such as telephone, e-mail and fax, shall be used.
6. Without prejudice to the specifications of the following paragraphs, Dispatch Instructions shall be mandatory for the Balancing Service Providers. The Balancing Service Providers shall ensure that the operational mode of their Balancing Service Entities complies with the Dispatch Instructions and that they change their operation only upon a new Dispatch Instruction. In case of non-compliance, the Balancing Service Providers shall be subject to Non-Compliance Charges, in accordance with Article 101 of this Rulebook.
7. When Compliance with a Dispatch Instruction is impossible due to constraints on the operation of a Balancing Service Entity, which constraints are included in the Balancing Service Entity's Declared Characteristics, then the respective Balancing Service Provider shall immediately notify the HETS Operator both by telephone and e-mail or fax. In that case, the HETS Operator may withdraw the original Dispatch Instruction and issue a new one.
8. When Compliance with a Dispatch Instruction is impossible for reasons solely attributable to the security of the personnel or the facilities of a Balancing Service Entity, then the respective Balancing Service Provider shall immediately notify the HETS Operator. In that



- case, the HETS Operator may issue a new Dispatch Instruction taking into account the updated characteristics of the respective Balancing Service Entity.
9. Balancing Service Providers shall be considered to comply with the Dispatch Instructions on the synchronization or de-synchronization of their Balancing Service Entities, if they execute them with a deviation of up to ten (10) minutes from the time specified in the orders, as described in the Technical Decision "Dispatch Instructions".
  10. In case of non-compliance of the Balancing Service Provider with the Dispatch Instruction, the HETS Operator shall point the fact to the relevant Balancing Service Provider indicating the respective Balancing Service Entity, the Dispatch Instruction and the time it was issued. The Balancing Service Provider shall under no circumstances be relieved of its obligations under the Dispatch Instructions and the consequences that may result from its non-compliance with these Instructions.
  11. In the Dispatch Instructions issued for Dispatchable Units with Alternative Fuel, the fuel type shall be specified.

**Article 66. Obligations of the Balancing Service Providers in the framework of the Balancing Energy Market**

1. Participation in the manual FRR process is mandatory for all Dispatchable Generating Units having that obligation, in accordance with the HETS Grid Code, for all their Available Capacity, regardless of the Balancing Capacity awarded in the ISPs.
2. Participation in the manual FRR process is optional for Dispatchable RES Units Portfolios and Dispatchable Load Portfolios, except for the capacity volume corresponding to the manual FRR Balancing Capacity they were awarded in the ISPs, for which participation is mandatory.
3. Participation in the automatic FRR process is mandatory for all Dispatchable Generating Units having that obligation, in accordance with the HETS Grid Code, regardless of the Balancing Capacity awarded in the ISPs.
4. Participation in the automatic FRR process is optional for Dispatchable RES Units Portfolios and Dispatchable Load Portfolios except for the capacity volume corresponding to the automatic FRR Balancing Capacity they were awarded in the ISPs, for which participation is mandatory.
5. Participation in the manual FRR process shall confer the following obligations on the Balancing Service Providers:
  - a) the submission of Total or Partial Non-Availability Declarations and Major Outage Declarations, immediately after the occurrence of an event affecting their availability,
  - b) the submission of upward Balancing Energy Offers for manual FRR by the Balancing Service Providers for the Balancing Service Entities they represent,
  - c) the submission of downward Balancing Energy Offers for manual FRR by the Balancing Service Providers for the Balancing Service Entities they represent,
  - d) availability for operation according to their Declared Characteristics, and
  - e) compliance with the Dispatch Instructions issued by the HETS Operator.
6. Participation in the automatic FRR process shall confer the following obligations on the Balancing Service Providers:

- a) the submission of Total or Partial Non-Availability Declarations, immediately after the occurrence of an event affecting their availability,
  - b) the submission of upward Balancing Energy Offers for automatic FRR by the Balancing Service Providers for the Balancing Service Entities they represent,
  - c) the submission of downward Balancing Energy Offers for automatic FRR by the Balancing Service Providers for the Balancing Service Entities they represent
  - d) availability for operation according to their Declared Characteristics, and
  - e) compliance with the Dispatch Instructions issued by the HETS Operator.
7. Balancing Service Providers shall not be obliged to submit upward and downward Balancing Energy Offers for manual FRR or upward and downward Balancing Energy Offers for automatic FRR for the Balancing Service Entities they represent and for which a corresponding obligation exists under paragraphs 1 to 4 of this Article, only in the following cases:
- a) for the period during which the Balancing Service Entity is in scheduled maintenance, in accordance with the HETS Grid Code, and
  - b) for the period of validity of the corresponding Total Non-Availability Declaration or the Major Outage Declaration of the Balancing Service Entity.

**Article 67. Submission of Balancing Energy Offers to the Balancing Energy Market**

1. Balancing Energy Offers for manual and automatic FRR may be submitted no later than the Expiration of the Deadline for the Submission of Balancing Energy Market Offers. The Expiration of the Deadline for the Submission of Balancing Energy Market Offers is fifteen (15) minutes prior to each manual FRR Time Period.
2. The price of the Balancing Energy Offers for manual and automatic FRR submitted by the Balancing Service Providers pursuant to paragraph 1 of this Article, must be improved in relation to the price of the ISP Balancing Energy Offer submitted to the ISP for the Dispatch Period which includes the manual FRR Time Period. The term improved price means a lower price for upward Balancing Energy Offers and a higher price for downward Balancing Energy Offers.
3. In the event that no Balancing Energy Offers for manual FRR are submitted for Dispatchable Generating Units at all, or if such offers are not submitted in time, or if they are not accepted, the ISP Balancing Energy Offers per Dispatch Period shall automatically be converted into corresponding 15-minute Energy Market Offers for manual FRR. Each ISP Balancing Energy Offer per Dispatch Period shall be converted into two (2) equivalent 15-minute Balancing Energy Offers for manual FRR, in the same form and for the same Balancing Energy quantities and prices as those in the original offer. These automatically created Offers shall be deemed as submitted by the Participant and shall produce all the results provided for in this Rulebook, as if the Offers had been submitted by the Participant.
4. In case the Balancing Energy Offers for automatic FRR for the Balancing Service Entities for which there was a corresponding obligation are not submitted in time or are not accepted, the ISP Balancing Energy Offers per Dispatch Period shall automatically be converted into corresponding 15-minute Energy Market Offers for automatic FRR. Each ISP Balancing Energy Offer per Dispatch Period shall be converted into two (2) equivalent 15-minute Balancing Energy Offers for automatic FRR, in the same form and for the same

Balancing Energy quantities and prices as those in the original offer. These automatically created Offers shall be deemed as submitted by the Participant and shall produce all the results provided for in this Rulebook, as if the Offers had been submitted by the Participant.

5. The energy quantities included in the upward and downward Balancing Energy Offers that are submitted to the Balancing Energy Market by the Generating Entities shall be deemed to be generated/adsorbed at the Dispatchable Generating Unit Meter Point.

## CHAPTER 14

### MANUAL FRR PROCESS

#### Article 68. Manual FRR Process Input Data

The HETS Operator shall draw up the results of a specific 15-minute solution of the Balancing Energy Market taking into consideration the following input data:

- a) the Market Schedule for each Balancing Service Entity as recorded by the Use Declaration Submission System of the HETS Operator,
- b) the operation schedules of the Dispatchable Generating Units/RES Units in Testing Operation, submitted by the respective Producers, through the operation schedules Declarations for units in Testing operation,
- c) the operation schedules of the generating units/RES Units in Commissioning operation, submitted by the respective Producers, through the Declarations of operation schedules for units in Commissioning Operation,
- d) the mandatory generation schedules for Dispatchable hydro Generating Units, as submitted by the respective Producers through the daily mandatory hydro injection declarations,
- e) the Imbalances in the import/export schedules at the interconnections used for the ISP solution, along with actual tripping on interconnections, if any,
- f) the already established flows in the inter-zonal corridors between the Bidding Zones deriving from the Market Schedule of all Entities, in order to calculate the residual flows available in the inter-zonal corridors for the solution of the Balancing Energy Market,
- g) the information on Balancing Service Entities received by the Energy Management System (e.g. unit in or out of operation, SCADA measurements of the production of Dispatchable Generating Units),
- h) the Automatic Generation Control status of the Balancing Service Entities that provide automatic FRR, which is received by the Energy Management System of the HETS Operator,
- i) the awarded Balancing Capacity of the Balancing Service Entities for upward and downward FCR, automatic FRR, and manual FRR, as received from the last ISP solution,
- j) the Energy Offers for manual FRR according to Article 67,

- k) the Available Capacity of all Balancing Service Entities, based on the most recently submitted Non-Availability Declarations,
- l) the latest updated operation schedule of the Balancing Service Entities that have activated a constraint in the maximum quantity of daily energy injection by their Techno-Economic Declaration,
- m) the Declared Characteristics of the Balancing Service Entities,
- n) the initial generation/consumption level of the Balancing Service Entities before and as close as possible to the start of the manual FRR Time Unit of the specific manual FRR process solution,
- o) the zonal Load Imbalances,
- p) the zonal RES Units Imbalances.

### **Article 69. Execution of the Manual FRR Process**

1. The manual FRR process is executed as a mixed integer linear programming model for each manual FRR Time Period.
2. The objective function for the solution of the manual FRR minimizes the cost for covering the zonal imbalances for all the Bidding Zones, using the submitted upward and downward Energy Offers for manual FRR of the Balancing Service Entities. The cost for covering the HETS zonal imbalances derives from the Energy Offers for manual FRR that get accepted.
3. The constraints of the manual FRR problem solution shall include at least:
  - a) the zonal Imbalance constraint for each Bidding Zone,
  - b) the constraints on electricity flows between the Bidding Zones,
  - c) the technical constraints of the Balancing Service Entities,
  - d) the constraints which ensure that the overall HETS requirements for ISP Balancing Capacity and automatic FRR are maintained,
  - e) any restrictions on mandatory injections, and
  - f) any constraints on maximum daily electricity injection from Dispatchable Generating Units.
4. In the event that for two or more Balancing Energy Offers pertaining to the same manual FRR Time Unit, the offer prices are identical and, at the same time, the respective Balancing Energy quantities of the above offers are not included in their entirety in the results of the manual FRR solution, the bidding sections shall be selected in the following order of priority: (a) Dispatchable RES Units Portfolio, (b) Dispatchable hydro Generating Units, (c) Dispatchable Load Portfolio, and (d) Dispatchable thermal Generating Units. Among bidding sections in the same category, priority shall be given to the sections of the offers corresponding to the Balancing Service Entity with the highest Ramp Up Rate. For bidding sections that come into the same category and have the same Ramp Up Rate there will be random selection.
5. In the event that no feasible result is produced for a manual FRR Time Unit from the manual FRR process solution, i.e. it is not possible to cover the short-term forecasted

imbalances by observing the constraints in paragraph 3 of this Article, the HETS Operator shall repeat the manual FRR process having, indicatively:

- a) included the ISP Balancing Energy Offers from Contracted Generating Units,
- b) relaxed the constraints in paragraph 3 (4) of this Article in order to achieve a feasible solution.

If, after following the above steps, there is still no feasible solution, the manual FRR process shall be performed once again in accordance with the provisions on Emergency Situations, as defined in the HETS Grid Code.

6. During the manual FRR process solution, it is possible to execute optimization for three consecutive 15-minute periods so that the effect of the HETS conditions during the next manual FRR Time Units is effectively taken into account for each manual FRR Time Unit. In this case, only the results of the first manual FRR Time Unit shall be binding. The results related to the subsequent manual FRR Time Units shall be indicative.

#### **Article 70. Immediate Activation of manual FRR**

1. Immediate activation of manual FRR means the activation of the manual FRR Balancing Energy at a time that does not coincide with the scheduled periodic performances of the manual FRR process in 15-minute cycles.
2. The HETS Operator is entitled to proceed to an immediate activation of the manual FRR Balancing Energy and send the Dispatch Instructions to the Balancing Service Entities in order to balance the HETS or to address technical constraints at any time between the scheduled solutions of the manual FRR processes.
3. To that end, the HETS Operator may, for example, execute the manual FRR process within the 15-minute cycle and/or use two commitment rows it had created based on the submitted Balancing Energy Offers, one for the upward and one for the downward direction.
4. When two rows are used in accordance with the provisions of paragraph 3 of this Article, the quantity of manual FRR Balancing Energy that can be supplied by each Balancing Service Entity shall be calculated on the basis of the quantity of its Balancing Energy Offers and its technical characteristics. The HETS Operator is entitled to select and activate the manual FRR Balancing Energy sequentially by order of commitment of the respective direction.
5. The Balancing Energy Offers that are related to the immediate activation of the manual FRR are taken into account when calculating the manual FRR Energy Price for the specific manual FRR Time Unit in the framework of the Balancing Market Settlement.
6. In the event that the HETS Operator issues Dispatch Instructions that differ from the result of the manual FRR solution, the HETS Operator shall submit a report to RAE justifying the selection of the Balancing Service Entities that cover the HETS Imbalance. The report shall be submitted for each month, within one (1) month from the end of the month to which it refers.

#### **Article 71. Manual FRR Dispatch Instructions**

1. The results of executing the manual FRR process include the activation quantities of the upward and downward Balancing Energy Offers of the Balancing Energy Entities, that

- are used to issue Dispatch Instructions to Balancing Service Entities, in order to achieve balancing of the HETS.
2. The HETS Operator shall issue Dispatch Instructions to the Balancing Service Entities for each manual FRR Time Unit, in accordance with the results of the manual FRR process.
  3. Each subsequent Dispatch Instruction shall replace any preceding one, as regards the same manual FRR Time Unit.
  4. In emergency situations, the HETS Operator may issue Dispatch Instructions to a Dispatchable Generating Unit (with the agreement of the Balancing Service Provider) in order to operate at a capacity greater than the Registered Capacity, as specified in its Registered Characteristics. In that case, there shall be no additional fee for the Dispatchable Generating Unit.
  5. In the event that the HETS Operator issues Dispatch Instructions that differ from the result of the manual FRR solution, the HETS Operator shall submit a report to RAE justifying the selection of the Balancing Service Entities that cover the HETS Imbalance. The report shall be submitted for each month, within one (1) month from the end of the month to which it refers.
  6. The Balancing Service Entities that are selected to provide Balancing Energy shall have the obligation to follow the Dispatch Instructions issued by the HETS Operator that concern the chosen quantities and the time period.

#### **Article 72. Content of manual FRR Dispatch Instructions**

1. The HETS Operator shall issue Dispatch Instructions which shall determine the generation/offtake level of the Balancing Service Entities.
2. The Dispatch Instruction shall be notified by the HETS Operator to the Balancing Service Entity before or at the start of each manual FRR Time Unit, except in the case of Immediate Activation of the manual FRR.
3. The Dispatch Instruction shall expire at the end of the manual FRR Time Unit in which the Dispatch Instruction was issued, unless a new Dispatch Instruction has been issued in the meantime.
4. The execution by the Balancing Service Provider of the Dispatch Instruction relating to the Balancing Energy through the immediate activation of the manual FRR shall begin immediately after the relevant Dispatch Instruction has been transmitted and shall stop at the end of the manual FRR Time Unit in which the Dispatch Instruction was issued.
5. The Dispatch Instruction shall be applied as follows:
  - a) The HETS Operator shall send to each Balancing Service Entity the generation/offtake level (in MW) to be produced/withdrawn by the Balancing Service Entity at the end of the following manual FRR Time Unit.
  - b) Once the manual FRR Time Unit starts each Balancing Service Entity shall begin by increasing or decreasing its generation/offtake until the Dispatch Instruction level (in MW) is reached, and then it shall preserve this level until the end of the manual FRR Time Unit.
  - c) The generation/offtake level during the manual FRR Time Unit shall be such that the upward or downward Manual FRR Balancing Energy supplied is equal to the



corresponding Manual FRR Balancing Energy that results from the execution of the manual FRR process as described in the Technical Decision "Manual FRR".

6. For each Dispatchable Generating Unit, the generation level determined by the Dispatch Instructions shall be in accordance with the Declared Characteristics of the said Dispatchable Generating Unit.

## **CHAPTER 15**

### **AUTOMATIC FRR PROCESS**

#### **Article 73. Activation of the Balancing Energy for automatic FRR**

1. The automatic FRR Balancing Energy shall be activated by using the Automatic Generation Control function of the HETS Operator for frequency control, as defined in Commission Regulation (EU) 2017/1485 of 2<sup>nd</sup> August 2017 laying down the guidelines for the operation of the electricity transmission system.
2. All Balancing Service Entities that were awarded an automatic FRR in the last ISP shall be activated almost simultaneously by the HETS Operator for the supply of Automatic FRR Balancing Energy.
3. The criteria for activating the Balancing Energy for automatic FRR shall be the Balancing Energy Offer prices for automatic FRR and the rate of change of the output capacity of the Balancing Service Entities.
4. More details on the activation of the automatic FRR Balancing Energy are provided in the Technical Decision "Automatic FRR".

## SECTION IV

### BALANCING MARKET SETTLEMENT

#### CHAPTER 16

#### GENERAL PROVISIONS

##### **Article 74. Imbalance Settlement Period**

The 15-minute time period for which the Imbalance of the Contracted Balance Responsible Parties is calculated shall be called the Imbalance Settlement Period. The Balancing Energy and the Balancing Capacity shall also be settled per Imbalance Settlement Period.

##### **Article 75. Balancing Market Accounts**

1. The HETS Operator shall keep the following Balancing Market Accounts:
  - a) Balancing Energy Account,
  - b) Account for Energy supplied for purposes other than balancing,
  - c) Imbalances Account,
  - d) Balancing Capacity Account,
  - e) Uplift Account,
  - f) Non-compliance Charges Account,
  - g) Balancing Market Fees Account.
2. The Accounts in items a) to e), paragraph 1 of this Article are not for accounting purposes and are solely kept for the monitoring of the Balancing Market by the HETS Operator.
3. The Accounts in items f) to g), paragraph 1 of this Article are for accounting purposes.

##### **Article 76. Balancing Market Settlement Object**

1. Balancing Market Settlement means the transparent calculation of the quantities of Balancing Energy and Balancing Capacity and the calculation of the monetary value of the Participants' debits and credits in the context of the Balancing Market, as detailed in paragraph 2 of this Article.
2. The Balancing Market Settlement shall include the following calculations for each Dispatch Day:
  - a) calculation of the Balancing Energy for manual FRR for each Balancing Service Entity and for each Imbalance Settlement Period of the Dispatch Day,
  - b) calculation of the Balancing Energy for automatic FRR for each Balancing Service Entity, for each Imbalance Settlement Period of the Dispatch Day,
  - c) calculation of the energy supplied for purposes other than balancing, for each Balancing Service Entity, for each Imbalance Settlement Period of the Dispatch Day,

- d) calculation of Imbalances, for each Balance Responsible Entity, for each Imbalance Settlement Period of the Dispatch Day,
- e) calculation of Imbalances Adjustment, for each Balance Responsible Entity, for each Imbalance Settlement Period of the Dispatch Day,
- f) calculation of the Balancing Capacity for FCR for each Balancing Service Entity and for each Imbalance Settlement Period of the Dispatch Day,
- g) calculation of the Balancing Capacity for manual FRR for each Balancing Service Entity and for each Imbalance Settlement Period of the Dispatch Day,
- h) calculation of the Balancing Capacity for automatic FRR for each Balancing Service Entity and for each Imbalance Settlement Period of the Dispatch Day,
- i) calculation of the debits and credits to the Balancing Service Provider for Balancing Energy and Balancing Capacity for each of the Balancing Service Entities it represents and for each Imbalance Settlement Period of the Dispatch Day,
- j) calculation of the debits and credits to the Balancing Service Provider for energy supplied for purposes other than balancing for each of the Balancing Service Entities it represents and for each Imbalance Settlement Period of the Dispatch Day,
- k) calculation of the debits and credits to the Balance Responsible Party for Imbalances for each of the Balance Responsible Entities it represents and for each Imbalance Settlement Period of the Dispatch Day,
- l) calculation of the cost of HETS Losses, for each Imbalance Settlement Period of the Dispatch Day,
- m) calculation of any Non-Compliance Charges imposed,
- n) calculation of charges and credits related to Uplift Accounts,
- o) calculation of the Balancing Market Fees for each Participant, and
- p) calculation of the amount that ensures the financial neutrality of the Balancing Market.

**Article 77. Information required for the performance of the Balancing Market Settlement**

For the performance of the Balancing Market Settlement, the HETS Operator shall use the following information:

- a) the Market Schedule of every Balance Responsible Entity, as it results from the Day-Ahead Market and the Intra-Day Market,
- b) the Balancing Energy Offers for manual FRR (quantity and price) per manual FRR Time Unit awarded in the Balancing Energy Market,
- c) the Balancing Energy Offers for automatic FRR (quantity and price) per manual FRR Time Unit awarded in the Balancing Energy Market,
- d) the activated energy offers for purposes other than balancing,
- e) the Dispatch Instructions
- f) the Supervisory Control and Data Acquisition System (SCADA) measurements for the Balancing Service Entities that supply automatic FRR Balancing Energy,

- g) the Balancing Energy Offers for manual FRR and for automatic FRR of the Balancing Service Entities awarded in the Balancing Energy Market,
- h) the indications marking the energy supplied for purposes other than balancing,
- i) The certified energy measurement data for the Balancing Service Entities and the interconnections,
- j) the quantity of electricity absorbed by Low and Medium Voltage consumers, as notified to the HETS Operator by Distribution Network Operators,
- k) the energy profiles per consumer category for non-telemetered Entities by the Distribution Network Operator,
- l) the total injections of the RES Units connected to the Low Voltage Network, as notified to the HETS Operator by the Distribution Network Operators,
- m) the Declared Characteristics of the Balancing Service Entities,
- n) any submitted Declarations of Total or Partial non-Availability or Major Outage Declarations of the Balancing Service Entities,
- o) the ISP results for upward and downward FCR, automatic FRR and manual FRR Balancing Capacity for the Balancing Service Entities, in MW,
- p) the Balancing Capacity Offers for the Balancing Service Entities, and
- q) the actual availability of the Balancing Service Entities for the supply of any type of Balancing Capacity.

#### **Article 78. Contract with the Clearing House**

1. The HETS Operator shall assign the Clearing of Positions, risk management and Cash Settlement procedures that need to be performed in the context of the operation of the Balancing Market to a Clearing House, as set out in article 12 and 17 of Law 4425/2016 and this Rulebook. The Clearing House shall have a Clearing Rulebook for Balancing Market Positions, which shall be issued as laid down in articles 12 and 13, par. 2 of Law 4425/2016.
2. The Clearing House shall perform the Clearing of Positions, risk management and Cash Settlement procedures in accordance with this Rulebook, the Clearing Rulebook for Balancing Market Positions and the Implementing and Technical Decisions issued for their performance, and shall undertake all the duties and responsibilities arising from them vis-a-vis the HETS Operator and any other third party involved in their implementation. The Participants shall be liable to fulfill the cash obligations arising from this Rulebook as set out in the Clearing Rulebook for Balancing Market Positions and in CHAPTER 22 and CHAPTER 23 of this Rulebook.

#### **Article 79. Obligations of the Distribution Network Operators under the Balancing Market Settlement process**

1. For the purposes of the Initial Settlement, the Distribution Network Operators shall communicate to the HETS Operator, every day, D, for day D + 2, the ex-ante estimated representation rates per Load Representative and per Profile Category regarding the consumption of non-telemetered Low Voltage customers of the HETS as provided in the Hellenic Electricity Distribution Network Code.

2. For the purposes of the Initial Settlement, the Distribution Network Operators shall communicate to the HETS Operator, every day, D, for the previous day D-1, per Imbalance Settlement Period:
  - a) The measurements / estimates of total electricity offtake corresponding to the telemetered consumers connected to the HETS Low Voltage network, adjusted to the Transmission System - Distribution Network Limit, per Load Representative, as provided in the Hellenic Electricity Distribution Network Code,
  - b) The measurements / estimates of total electricity offtake corresponding to the HETS Medium Voltage consumers, adjusted to the Transmission System - Distribution Network Limit, per Load Representative, as provided in the Hellenic Electricity Distribution Network Code,
  - c) The measurements / estimates of total production by RES Units connected to the HETS Low Voltage network, as provided in the Hellenic Electricity Distribution Network Code,
3. For the purposes of the Corrective Settlement, the Distribution Network Operators shall communicate to the HETS Operator, until Monday of Settlement W+6, for every Settlement Week, W, per Imbalance Settlement Period, the following revised data:
  - a) The measurements / estimates of total electricity offtake corresponding to the telemetered consumers connected to the HETS Low Voltage network, adjusted to the Transmission System - Distribution Network Limit, per Load Representative, as provided in the Hellenic Electricity Distribution Network Code,
  - b) The measurements / estimates of total electricity offtake corresponding to the HETS Medium Voltage consumers, adjusted to the Transmission System - Distribution Network Limit, per Load Representative, as provided in the Hellenic Electricity Distribution Network Code,
  - c) The measurements / estimates of total production by RES Units connected to the Interconnected System Low Voltage network, as provided in the Hellenic Electricity Distribution Network Code,
4. For the purposes of the Final Settlement of the first Half-Year Settlement Period of year Y-1, the Distribution Network Operators shall communicate to the HETS Operator, by the twenty-sixth (26) Tuesday of year Y, the final measurements for Low Voltage customers and any corrections to the Medium Voltage customer measurements:
5. For the purposes of the Final Settlement of the second Half-Year Settlement Period of year Y-1, the Distribution Network Operators shall communicate to the HETS Operator, by the fifty-second (52) Tuesday of year Y, the final measurements for Low Voltage customers and any corrections to the Medium Voltage customer measurements:
6. Any corrections to the data provided in this Article after expiration of the deadlines set out in paragraphs 4 and 5 of this Article, shall not be taken into account for the Balancing Market Settlement pursuant to this Rulebook.

### **Article 80. Financial neutrality of the HETS Operator**

The financial neutrality of the HETS Operator as a result of the operation of the Balancing Market is ensured through the debits and credits to Balance Responsible Parties, as described in Article 95 of this Rulebook.

**Article 81. Technical Decision "Balancing Market Settlement".**

Details and examples of calculations regarding the Balancing Market Settlement are described in Technical Decision "Balancing Market Settlement".

## CHAPTER 17

### TRANSMISSION SYSTEM LOSSES

**Article 82. HETS Losses Management**

1. The HETS Operator shall predict the HETS Losses and shall take the necessary action to cover the said quantities of energy by submitting Priority Price-Taking Orders at the Day-Ahead Market or/and the Intra-Day Market or/and through the Energy Financial Market or/and through contracts concluded following a tender.
2. The HETS Operator shall calculate the actual losses of the HETS and shall calculate the debit/credit of these losses to the Imbalance Settlement.
3. The total cost of HETS Losses shall be recovered by the HETS Operator through the corresponding Uplift Account as defined in Article 93 of this Rulebook.

**Article 83. HETS Losses Forecast**

HETS Losses are estimated based on the "HETS Losses Calculation Methodology". The HETS Operator shall use the "HETS Losses Calculation Methodology" for the hourly Forecast of the HETS Losses that have to be purchased in accordance with Article 82 of this Rulebook.

## CHAPTER 18

### IMBALANCE AND BALANCING ENERGY SETTLEMENT

**Article 84. Calculation of Balancing Energy and Imbalances**

1. The activated energy for each Imbalance Settlement Period shall be calculated separately for the manual FRR, the automatic FRR and for purposes other than balancing. An upward activated energy shall be always calculated with a positive value, while the downward activated energy shall be always calculated with a negative value.
2. The activated Balancing Energy for manual FRR is defined as follows:
  - a) The upward activated Balancing Energy for manual FRR of a Balancing Service Entity  $e$  for an Imbalance Settlement Period  $t$  ( $ABE_{e,t}^{mFRR,up}$ ) is (a) for Dispatchable Generating Units and Dispatchable RES Units Portfolios, the additional energy corresponding to the Adjusted Dispatch Instruction for manual FRR in relation to their respective Market Schedules and (b) for Dispatchable Load Portfolios, the decrease in energy consumption corresponding to the Adjusted Dispatch Instruction for manual FRR in relation to their respective Market Schedules and



- b) The downward activated Balancing Energy for manual FRR of a Balancing Service Entity  $e$  for an Imbalance Settlement Period  $t$  ( $ABE_{e,t}^{mFRR,dn}$ ) is (a) for Dispatchable Generating Units and Dispatchable RES Units Portfolios, the decrease of energy corresponding to the Adjusted Dispatch Instruction for manual FRR in relation to their respective Market Schedules and (b) for Dispatchable Load Portfolios, the increase in energy consumption corresponding to the Adjusted Dispatch Instruction for manual FRR in relation to their respective Market Schedules.
3. The activated Energy supplied for purposes other than balancing is defined as follows:
- a) The upward activated energy for purposes other than balancing of a Balancing Service Entity  $e$  for an Imbalance Settlement Period  $t$  ( $AOE_{e,t}^{mFRR,up}$ ) is (a) for Dispatchable Generating Units and Dispatchable RES Units Portfolios, the additional energy corresponding to the Adjusted Dispatch Instruction for purposes other than balancing in relation to the respective Market Schedules and (b) for Dispatchable Load Portfolios, the reduction in energy consumption corresponding to the Adjusted Dispatch Instruction for purposes other than balancing in relation to the respective Market Schedules, and
- b) The downward activated energy for purposes other than balancing of a Balancing Service Entity  $e$  for an Imbalances Settlement Period  $t$  ( $AOE_{e,t}^{mFRR,dn}$ ) is (a) for Dispatchable Generating Units and Dispatchable RES Units Portfolios, the energy decrease corresponding to the Adjusted Dispatch Instruction for purposes other than balancing in relation to the respective Market Schedules and (b) for Dispatchable Load Portfolios, the additional energy consumption corresponding to the Adjusted Dispatch Instruction for purposes other than balancing in relation to the respective Market Schedules.
4. The Adjusted Dispatch Instruction and the activated energy shall be calculated according to the "Activated Balancing Energy Calculation Methodology", which takes into account at least the actual availability of the Balancing Service Entities.
5. The Instructed Energy of a Balancing Service Entity  $e$  for an Imbalance Settlement Period  $t$  is equal to the Market Schedule plus the upward Balancing Energy activated for manual FRR plus the downward Balancing Energy activated for manual FRR plus the upward energy activated for purposes other than balancing plus the downward energy activated for purposes other than balancing, as given below:

$$INST_{e,t} = MS_{e,t} + ABE_{e,t}^{mFRR,up} + ABE_{e,t}^{mFRR,dn} + AOE_{e,t}^{mFRR,up} + AOE_{e,t}^{mFRR,dn}$$

In the above formula, the upward activated energy ( $ABE_{e,t}^{mFRR,up}$ ,  $AOE_{e,t}^{mFRR,up}$ ) has a positive sign while the downward activated energy ( $ABE_{e,t}^{mFRR,dn}$ ,  $AOE_{e,t}^{mFRR,dn}$ ) has a negative sign.

For the calculation of the Instructed Energy, a tolerance limit can be set per category of Balancing Service Entity by decision of RAE, upon proposal by the HETS Operator.

6. The integral of the Supervisory Control and Data Acquisition System (SCADA) measurements of a Balance Responsible Entity  $e$  within an Imbalance Settlement Period  $t$  that are greater than the Instructed Energy,  $INST_{e,t}$ , is defined as the SCADA Upward Quantity  $SQ_{e,t}^{up}$ .

7. The integral of the Supervisory Control and Data Acquisition System (SCADA) measurements of a Balance Responsible Entity  $e$  within an Imbalance Settlement Period  $t$  that are lower than the Instructed Energy,  $INST_{e,t}$ , is defined as the SCADA Downward Quantity  $SQ_{e,t}^{dn}$ .

8. In the event that a Balancing Service Entity  $e$  operates under AGC during an Imbalance Settlement Period  $t$ , then:

a) the upward Balancing Energy activated for automatic FRR for Dispatchable Generating Units or Dispatchable RES Units Portfolio shall have a positive sign and shall be equal to:

$$ABE_{e,t}^{aFRR,up} = SQ_{e,t}^{up}$$

b) the downward Balancing Energy activated for automatic FRR for Dispatchable Generating Units or Dispatchable RES Units Portfolio shall have a negative sign and shall be equal to:

$$ABE_{e,t}^{aFRR,dn} = SQ_{e,t}^{dn}$$

c) the upward Balancing Energy activated for automatic FRR for Dispatchable Load Portfolios shall have a positive sign and shall be equal to:

$$ABE_{e,t}^{aFRR,up} = SQ_{e,t}^{dn}$$

d) the downward Balancing Energy activated for automatic FRR for Dispatchable Load Portfolios shall have a negative sign and shall be equal to:

$$ABE_{e,t}^{aFRR,dn} = SQ_{e,t}^{up}$$

9. The Imbalance of a Balance Responsible Entity  $e$  for an Imbalance Settlement Period  $t$  shall be equal to the difference between the quantity of energy that results on the basis of the Entity's certified measurement data and the Entity's Market Schedule as given below:

a) for Dispatchable Generating Units or Dispatchable RES Units Portfolio:

$$IMB_{e,t} = MQ_{e,t} - MS_{e,t}$$

b) for Dispatchable Load Portfolio:

$$IMB_{e,t} = MS_{e,t} - MQ_{e,t}$$

In the above functions, a positive sign corresponds to more energy supply or less energy offtake by the Balance Responsible Entity, while a negative sign corresponds to less energy supply or more energy offtake in relation to its Market Schedule.

10. The Imbalances adjustment of a Balancing Service Entity  $e$  that provides Balancing Energy for manual FRR or energy for purposes other than balancing for an Imbalance Settlement Period  $t$  is given in the following functions:

a) for Dispatchable Generating Units or Dispatchable RES Units Portfolio:

$$IMBADJ_{e,t} = MS_{e,t} - INST_{e,t}$$

b) for Dispatchable Load Portfolio:

$$IMBADJ_{e,t} = INST_{e,t} - MS_{e,t}$$

11. The Final Imbalance of a Balancing Service Entity  $e$  that was not operating under AGC for an Imbalance Settlement Period  $t$  shall be equal to the Imbalance plus the Imbalances adjustment as given below:

$$FIMB_{e,t} = IMB_{e,t} + IMBADJ_{e,t}$$

12. The Final Imbalance of a Balancing Service Entity  $e$  that was operating under AGC for an Imbalance Settlement Period  $t$  shall be equal to zero.
13. The Final Imbalance of a Balance Responsible Entity  $e$  that is not providing Balancing Services shall be equal to the Imbalance as it is calculated on the basis of paragraph 9. In particular:

- a) For Dispatchable RES Units Portfolio, RES Units Portfolio without Market Participation Obligation and Electricity Exports from the Interconnections, the Final Imbalance shall be equal to

$$FIMB_{e,t} = MQ_{e,t} - MS_{e,t}$$

- b) for Non-Dispatchable RES Units Portfolio and Electricity Exports from the Interconnections the Final Imbalance shall be equal to

$$FIMB_{e,t} = MS_{e,t} - MQ_{e,t}$$

The Final Positive Imbalance (a) for Dispatchable Generating Units and Dispatchable RES Units Portfolios shall correspond to higher metered energy injection compared to the respective Dispatch Instruction, and (b) for Dispatchable Load Portfolios shall correspond to lower metered energy consumption compared to the respective Dispatch Instruction.

The Final Positive Imbalance (a) for Non-Dispatchable RES Units Portfolio and RES Units Portfolio without Market Participation Obligation shall correspond to higher metered energy injection compared to the respective Market Schedule, and (b) for Non-Dispatchable Load Portfolios shall correspond to lower metered energy consumption compared to the respective Market Schedule.

The Final Negative Imbalance (a) for Dispatchable Generating Units and Dispatchable RES Units Portfolios shall correspond to lower metered energy injection in real time compared to the respective Dispatch Instruction, and (b) for Dispatchable Load Portfolios shall correspond to higher metered energy consumption in real time compared to the respective Dispatch Instruction.

The Final Negative Imbalance (a) for Non-Dispatchable RES Units Portfolio and RES Units Portfolio without Market Participation Obligation shall correspond to lower metered energy injection compared to the respective Market Schedule, and (b) for Non-Dispatchable Load Portfolios shall correspond to higher metered energy consumption compared to the respective Market Schedule.

Details and possible deviations in relation to the above are described in the "Activated Balancing Energy Calculation Methodology".

14. For Dispatchable Load Portfolios with the exception of pumping and for Imbalance Settlement Periods for which balancing energy is provided, the Market Schedule shall be considered equal to their Reference Load, which is calculated by the HETS Operator for the respective period, and corresponds to the electricity that would have been consumed by the Dispatchable Load Portfolio had the relevant Balancing Energy Offers not been

activated. Details and the rules for calculating the Reference Load are provided in the "Dispatchable Load Portfolios Reference Load Calculation Methodology".

### **Article 85. Balancing Energy Price for manual FRR**

1. If there is no congestion between Bidding Zones, the upward Balancing Energy Price for manual FRR (in EUR/MWh),  $BEP_{z,t}^{up}$ , for each Imbalance Settlement Period,  $t$ , for the activation of upward Balancing Energy for manual FRR shall be equal to the maximum of the Balancing Energy Offer prices for the manual FRR steps that were activated to cover the HETS Imbalances. If there is congestion between Bidding Zones, the upward Balancing Energy Price for manual FRR for each Imbalance Settlement Period,  $t$ , for the activation of upward Balancing Energy for each Bidding Zone shall be equal to the maximum of the Balancing Energy Offer prices for the manual FRR steps that were activated to cover the deviation in the specific Bidding Zone,  $z$ .
2. If there is no congestion between Bidding Zones, the downward Balancing Energy Price for manual FRR (in EUR/MWh),  $BEP_{z,t}^{dn}$ , for each Imbalance Settlement Period,  $t$ , for the activation of downward Balancing Energy for manual FRR shall be equal to the maximum of the Balancing Energy Offer prices for the manual FRR steps that were activated to cover the HETS Imbalances. If there is congestion between Bidding Zones, the downward Balancing Energy Price for manual FRR for each Imbalance Settlement Period,  $t$ , for the activation of downward Balancing Energy for each Bidding Zone shall be equal to the the maximum of the Balancing Energy Offer prices for the manual FRR steps that were activated to cover the deviation in the specific Bidding Zone,  $z$ .
3. The upward and downward Balancing Energy Offers for manual FRR activated for purposes other than balancing shall be marked and excluded from the calculation of upward and downward Balancing Energy prices for manual FRR. The upward and downward Balancing Energy Offers for manual FRR for the Balancing Service Entities and for the Imbalance Settlement Periods for which no Non-Compliance Charges have been calculated as set out in Article 105 shall be marked and excluded from the calculation of upward and downward Balancing Energy prices for manual FRR. The HETS Operator shall submit to RAE, prior to putting into operation the European Union target model for the national electricity market, a list of purposes other than balancing, which shall be approved by RAE. Indicatively, such purposes include but are not limited to, the management of the HETS constraints, and the reallocation of reserves.
4. If during an Imbalance Settlement Period energy from Contracted Units or Supplementary Energy from Emergency Imports was injected, or Load Cuts were performed, the upward Balancing Energy Price for manual FRR may be increased by the Balancing Energy Deficit Premium in €/MWh for the specific Imbalance Settlement Period. The Balancing Energy Deficit Premium price in €/MWh shall be determined by a RAE Decision, upon recommendation by the HETS Operator.
5. If the calculation of the Balancing Energy Prices is impossible, in particular due to an Emergency Situation, or failure of the Balancing Market System or of the other electronic systems of the HETS Operator, the HETS Operator shall apply the procedure provided for in the "Rules for settlement in case of suspension of market activities".

### Article 86. Calculation of Balancing Energy debits and credits

1. The debits or credits to the Balancing Service Providers for each Balancing Service Entity they represent, per Imbalance Settlement Period, for activated Balancing Energy for manual FRR or for energy activated for purposes other than balancing following a relevant Dispatch Instruction shall be determined for each direction according to the following table:

	<b>Positive Balancing Energy Price</b>	<b>Negative Balancing Energy Price</b>
<b>Upward Balancing Energy</b>	Payment from Clearing House to Balancing Service Provider	Payment from Balancing Service Provider to Clearing House
<b>Downward Balancing Energy</b>	Payment by Balancing Service Provider to Clearing House	Payment from Clearing House to Balancing Service Provider

2. The debits or credits to the Balancing Service Providers for each Balancing Service Entity,  $e$ , they represent, per Imbalance Settlement Period,  $t$ , for the activated Balancing Energy for manual FRR shall be calculated as follows:

- a) For the activated upward Balancing Energy for manual FRR, as the product of the quantity of upward Balancing Energy activated for manual FRR and the Price for upward Balancing Energy for manual FRR for a Bidding Zone,  $z$ , where a Balancing Service Entity,  $e$ , belongs:

$$ABEC_{e,t}^{mFRR,up} = ABE_{e,t}^{mFRR,up} \times BEP_{z,t}^{up}$$

Where:

$ABEC_{e,t}^{mFRR,up}$  The debit or credit in € for the upward Balancing Energy activated for manual FRR for a Balancing Service Entity  $e$  and an Imbalance Settlement Period  $t$ .

$ABE_{e,t}^{mFRR,up}$  The activated upward Balancing Energy for manual FRR in MWh for a Balancing Service Entity  $e$  and an Imbalance Settlement Period  $t$ .

$BEP_{z,t}^{up}$  The Price for the activated upward Balancing Energy for manual FRR, in €/MWh, for a Bidding Zone,  $z$ , where a Balancing Service Entity,  $e$ , belongs.

- b) For the activated downward Balancing Energy for manual FRR, as the product of the quantity of downward Balancing Energy activated for manual FRR and the Price for downward Balancing Energy for manual FRR for a Bidding Zone,  $z$ , where a Balancing Service Entity,  $e$ , belongs:

$$ABEC_{e,t}^{mFRR,dn} = ABE_{e,t}^{mFRR,dn} \times BEP_{z,t}^{dn}$$

Where:

$ABEC_{e,t}^{mFRR,dn}$	The debit or credit in € for the activated downward Balancing Energy for manual FRR for a Balancing Service Entity $e$ and an Imbalance Settlement Period $t$ .
$ABE_{e,t}^{mFRR,dn}$	The activated downward Balancing Energy for manual FRR in MWh for a Balancing Service Entity $e$ and an Imbalance Settlement Period $t$ .
$BEP_{z,t}^{dn}$	The Price for the activated downward Balancing Energy for manual FRR, in €/MWh, for a Bidding Zone, $z$ , where a Balancing Service Entity, $e$ , belongs.

3. The debits or credits to the Balancing Service Providers for each Balancing Service Entity,  $e$ , they represent, per Imbalance Settlement Period, for upward Balancing Energy activated for automatic FRR shall be calculated as the product of:

- a) the quantity of activated upward Balancing Energy for automatic FRR by the Balancing Service Entity during the Imbalance Settlement Period, and
- b) the largest value between the price for the upward Balancing Energy for manual FRR and the price of the Balancing Energy Offer for automatic FRR of the Balancing Service Entity corresponding to the quantity of upward Balancing Energy activated for automatic FRR by the Balancing Service Entity during the Imbalance Settlement Period. If the Price for the upward Balancing Energy for manual FRR has not been calculated, the relative price of the Balancing Energy Offer for automatic FRR of the Balancing Service Entity shall be used.

$$ABEC_{e,t}^{aFRR,up} = ABE_{e,t}^{aFRR,up} \times \max(BEP_{z,t}^{up}, OPBE_{e,s,t}^{aFRR,up})$$

Where:

$ABEC_{e,t}^{aFRR,up}$  the debit or credit in € for the activated upward Balancing Energy for automatic FRR for a Balancing Service Entity  $e$  and an Imbalance Settlement Period  $t$ .

$ABE_{e,t}^{aFRR,up}$  the activated upward Balancing Energy for automatic FRR for a Balancing Service Entity  $e$  and an Imbalance Settlement Period  $t$ .

$BEP_{z,t}^{up}$  the Price for the activated upward Balancing Energy for manual FRR for a Bidding Zone  $z$  and an Imbalance Settlement Period  $t$ . A Bidding Zone  $z$  is the zone where a Balancing Service Entity  $e$  is located.

$OPBE_{e,s,t}^{aFRR,up}$  the price in €/MWh of step  $s$  of the upward Balancing Energy Offer of a Balancing Service Entity,  $e$ , for automatic FRR for an Imbalance Settlement Period,  $t$ . The step  $s$  is what corresponds to the quantity  $ABE_{e,t}^{aFRR,up}$ .

4. The debits or credits to the Balancing Service Providers for each Balancing Service Entity,  $e$ , they represent, per Imbalance Settlement Period, for Balancing Energy activated for downward automatic FRR shall be calculated as the product of:

- a) the quantity of downward Balancing Energy activated for automatic FRR by the Balancing Service Entity during the Imbalance Settlement Period, and



- b) the smallest value between the price for the downward Balancing Energy for manual FRR and the price of the Balancing Energy Offer for automatic FRR of the Balancing Service Entity. If the Price for the downward Balancing Energy for manual FRR has not been calculated, the relative price of the Balancing Energy Offer for automatic FRR of the Balancing Service Entity shall be used.

$$ABEC_{e,t}^{aFRR,dn} = ABE_{e,t}^{aFRR,dn} \times \min(BEP_{z,t}^{dn}, OPBE_{e,s,t}^{aFRR,dn})$$

Where:

$ABEC_{e,t}^{aFRR,dn}$  The debit or credit in € for the activated downward Balancing Energy for automatic FRR for a Balancing Service Entity e and an Imbalance Settlement Period t.

$ABE_{e,t}^{aFRR,dn}$  the activated downward Balancing Energy for automatic FRR for a Balancing Service Entity e and an Imbalance Settlement Period t.

$BEP_{z,t}^{dn}$  the Price for the activated downward Balancing Energy for manual FRR for a Bidding Zone z and an Imbalance Settlement Period t. A Bidding Zone z is the zone where a Balancing Service Entity e is located.

$OPBE_{e,s,t}^{aFRR,dn}$  the price in €/MWh of step s of the downward Balancing Energy Offer of a Balancing Service Entity, e, for automatic FRR for an Imbalance Settlement Period, t. The step s is what corresponds to the quantity  $ABE_{e,t}^{aFRR,dn}$ .

5. The Contracted Units offering Supplementary System Energy shall be paid in accordance with the terms and conditions of the relevant Supplementary System Energy Contract, as stipulated in the HETS Grid Code.

#### **Article 87. Calculation of debits and credits for energy activated for purposes other than balancing**

The debits or credits to the Balancing Service Providers for each Balancing Service Entity, e, they represent, per Imbalance Settlement Period, for energy activated for purposes other than balancing shall be calculated as follows:

- a) as the sum of the products of all steps, which result from the multiplication of the quantity of upward balancing energy in each step by the Price of the Offer for upward Balancing Energy for manual FRR for that step and the corresponding Entity.

$$AOEC_{e,t}^{mFRR,up} = \sum_s (mFRRQ_{e,as,t}^{up} \times OPBE_{e,s,t}^{mFRR,up})$$

Where:

$AOEC_{e,t}^{mFRR,up}$  The debit or credit for the upward Balancing Energy activated for purposes other than balancing for a Balancing Service Entity e and an Imbalance Settlement Period t.

$mFRRQ_{e,as,t}^{up}$  the segment, as, of step, s, in €/MWh of the upward Balancing Energy Offer for manual FRR that has been validated for a Balancing Service Entity, e, for an Imbalance Settlement Period, t.

$OPBE_{e,s,t}^{mFRR,up}$  the price in €/MWh of step s of the upward Balancing Energy Offer of a Balancing Service Entity, e, for manual FRR for an Imbalance Settlement Period, t.

- b) as the sum of the products of all steps, which result from the multiplication of the quantity of downward balancing energy in each step by the Price of the Offer for downward Balancing Energy for manual FRR for that step and the corresponding Entity.

$$AOEC_{e,t}^{mFRR,dn} = \sum_s (mFRRQ_{e,as,t}^{dn} \times OPBE_{e,s,t}^{mFRR,dn})$$

Where:

$AOEC_{e,t}^{mFRR,dn}$  The debit or credit for the downward Balancing Energy activated for purposes other than balancing for a Balancing Service Entity e and an Imbalance Settlement Period t.

$mFRRQ_{e,as,t}^{dn}$  the segment, as, of step, s, in €/MWh of the downward Balancing Energy Offer for manual FRR that has been validated for a Balancing Service Entity, e, for an Imbalance Settlement Period, t.

$OPBE_{e,s,t}^{mFRR,dn}$  the price in €/MWh of step s of the downward Balancing Energy Offer of a Balancing Service Entity, e, for manual FRR for an Imbalance Settlement Period, t.

### Article 88. Calculation of the Imbalance Price

1. The price (in EUR/MWh) at which the imbalances are cleared per Imbalance Settlement Period shall be calculated as follows:
  - a) The Imbalance Price,  $IP_t$ , for an Imbalance Settlement Period t shall be calculated as the weighted average price of the activated Balancing Energy in the predominant direction (upward or downward) for manual and automatic FRR for that Imbalance Settlement Period. The above weighted average price shall be calculated as the quotient of the total amount in € corresponding to the activation of balancing energy in the predominant direction (upward manual and automatic FRR or downward manual and automatic FRR) and the algebraic sum of the activated balancing energy quantities in the dominant direction. The Imbalance Price, shall be calculated as follows:

$$IP_t = \frac{\sum_e ABEC_{e,t}^{mFRR,main_dir} + \sum_e ABEC_{e,t}^{aFRR,main_dir}}{\sum_e ABE_{e,t}^{mFRR,main_dir} + \sum_e ABE_{e,t}^{aFRR,main_dir}}$$

Where:

$ABEC_{e,t}^{mFRR,main_dir}$  The debit or credit in € for the activated Balancing Energy for manual FRR in the predominant direction for a Balancing Service Entity e and an Imbalance Settlement Period t.

- $ABEC_{e,t}^{aFRR,main\_dir}$  The debit or credit in € for the activated Balancing Energy for automatic FRR in the predominant direction for a Balancing Service Entity e and an Imbalance Settlement Period t.
- $ABE_{e,t}^{mFRR,main\_dir}$  The activated Balancing Energy for manual FRR in the predominant direction in MWh for a Balancing Service Entity e and an Imbalance Settlement Period t.
- $ABE_{e,t}^{aFRR,main\_dir}$  The activated Balancing Energy for automatic FRR in the predominant direction in MWh for the Balancing Service Entity e and the Imbalance Settlement Period t.

The predominant direction is upward when the activated upward Balancing Energy for manual and automatic FRR for a specific Imbalance Settlement Period t is greater than the activated downward Balancing Energy for manual and automatic FRR. Similarly, the predominant direction is downward when the activated downward Balancing Energy for manual and automatic FRR for a specific Imbalance Settlement Period t is greater than the activated upward Balancing Energy for manual and automatic FRR.

- b) If neither upward nor downward Balancing Energy was activated for an Imbalance Settlement Period t, the Imbalance Price  $OP_t$  shall be equal to the value of the avoided Balancing Energy activation and shall be calculated by finding the mean of the following values:
- i. the lower upward Balancing Energy Offer price for either manual or automatic FRR for that Imbalance Settlement Period and
  - ii. the higher downward Balancing Energy Offer price for either manual or automatic FRR for that Imbalance Settlement Period.
2. Any deficit resulting from the Imbalance Settlement shall be apportioned and allocated to the Balance Responsible Parties, as set forth in Article 95 of this Rulebook.
  3. If the calculation of the Imbalance Prices is impossible, in particular due to an Emergency Situation, or failure of the Balancing Market System or of the other electronic systems of the HETS Operator, the HETS Operator shall apply the procedure provided for in the “Rules for settlement in case of suspension of market activities”.

#### **Article 89. Calculation of Debits and Credits from the Imbalance Settlement**

1. The Imbalance Settlement is the procedure whereby the Balance Responsible Parties are charged or credited for the imbalances they cause. The Imbalance Settlement shall be initially performed per Balance Responsible Entity and then per Balance Responsible Party.
2. The Imbalance amount in € for an Imbalance Settlement Period t and a Balancing Service Entity or Balance Responsible Entity e shall be calculated as the Final Imbalance, in MWh, as calculated according to Article 84, multiplied by the relative price in €/MWh as follows:
  - a) If the System Imbalance is non-zero:

$$IMBC_{e,t} = FIMB_{e,t} \times IP_t$$

- b) If neither upward nor downward Balancing Energy was activated for an Imbalance Settlement Period  $t$ :

$$IMBC_{e,t} = FIMB_{e,t} \times OP_t$$

Where:

$IMBC_{e,t}$  the Imbalance debit or credit in € for a Balancing Service Entity or a Balance Responsible Entity  $e$  and an Imbalance Settlement Period  $t$ .

$FIMB_{e,t}$  the Final Imbalance quantity,  $FIMB_{e,t}$ , in MWh for a Balancing Service Entity or a Balance Responsible Entity  $e$  and an Imbalance Settlement Period  $t$ .

$IP_t$  the Imbalance Price in €/MWh for an Imbalance Settlement Period  $t$ .

$OP_t$  the mean, in €/MWh, of the lowest upward Balancing Energy Offer Price and the highest downward Balancing Energy Offer Price either for automatic or for manual FRR for a specific Imbalance Settlement Period  $t$ .

3. When the amount calculated for an Imbalance is found to be negative, the Balance Responsible Entity is required to pay that amount. When the amount calculated for an Imbalance is found to be positive, the Balance Responsible Entity is entitled to collect that amount.
4. The Imbalance amount calculated for RES Units Portfolio without Market Participation Obligation shall be debited/ credited to DAPEEP.

## CHAPTER 19

### BALANCING CAPACITY SETTLEMENT

#### Article 90. Calculation of the supplied quantity of Balancing Capacity

1. The Balancing Capacity Settlement Period is set to be equal to the Imbalance Settlement Period. In order to ensure that the ISP Dispatch Period corresponds with the Imbalance Settlement Periods, the half-hourly results for ISP Balancing Capacity shall be divided into two (2) equivalent 15-minute results.
2. For each Balancing Service Entity and for each Imbalance Settlement Period, the upward and downward Balancing Capacity supplied for FCR, automatic FRR and manual FRR shall be calculated taking into account:
  - a) The segments of the individual steps of the Balancing Capacity Offer that have been validated on the basis of the last ISP execution, whose solution timeframe shall include that specific Imbalance Settlement Period.
  - b) the availability in MW of the Balancing Service Entity for the provision of the service in real time.
  - c) the percentage of a time period within an Imbalance Settlement Period when the Balancing Service Entity was available for the provision of FCR in real time.

3. The upward and downward Balancing Capacity provided for FCR by a Balancing Service Entity  $e$  for an Imbalance Settlement Period  $t$  shall be calculated as follows:

$$FCRQ_{e,t}^{up} = \sum_s \sum_{as} (FCRQ_{e,as,t}^{up}) \times T_{e,t}^{FCR,up}$$

$$FCRQ_{e,t}^{dn} = \sum_s \sum_{as} (FCRQ_{e,as,t}^{dn}) \times T_{e,t}^{FCR,dn}$$

where:

$FCRQ_{e,t}^{up}$  the upward Balancing Capacity, in MW, supplied for FCR by a Balancing Service Entity,  $e$ , for an Imbalance Settlement Period  $t$ .

$FCRQ_{e,as,t}^{up}$  the segment,  $as$ , of step,  $s$ , in MW of the upward Balancing Capacity Offer for FCR validated for a Balancing Service Entity,  $e$ , for a Dispatch Period which includes an Imbalance Settlement Period,  $t$ , on the basis of the last ISP execution, whose solution timeframe shall include that specific Imbalance Settlement Period  $t$ .

$T_{e,t}^{FCR,up}$  the percentage of a time period within an Imbalance Settlement Period when the Balancing Service Entity was available for the provision of upward FCR in real time.

$FCRQ_{e,t}^{dn}$  the downward Balancing Capacity, in MW, supplied for FCR by a Balancing Service Entity,  $e$ , for an Imbalance Settlement Period,  $t$ .

$FCRQ_{e,as,t}^{dn}$  the segment,  $as$ , of step,  $s$ , in MW of the downward Balancing Capacity Offer for FCR validated for a Balancing Service Entity,  $e$ , for a Dispatch Period which includes an Imbalance Settlement Period,  $t$ , on the basis of the last ISP execution, whose solution timeframe shall include that specific Imbalance Settlement Period  $t$ .

$T_{e,t}^{FCR,dn}$  the percentage of a time period within an Imbalance Settlement Period when the Balancing Service Entity was available for the provision of downward FCR in real time

4. The upward and downward Balancing Capacity provided for manual FRR by a Balancing Service Entity  $e$  for an Imbalance Settlement Period  $t$  shall be calculated as follows:

$$mFRRQ_{e,t}^{up} = \sum_s \sum_{as} (mFRRQ_{e,as,t}^{up}) \times T_{e,t}^{mFRR,up}$$

$$mFRRQ_{e,t}^{dn} = \sum_s \sum_{as} (mFRRQ_{e,as,t}^{dn}) \times T_{e,t}^{mFRR,dn}$$

where:

$mFRRQ_{e,t}^{up}$  the upward Balancing Capacity, in MW, supplied for manual FRR by a Balancing Service Entity,  $e$ , for an Imbalance Settlement Period,  $t$ , in real time.

$mFRRQ_{e,as,t}^{up}$  the segment,  $as$ , of step,  $s$ , in MW of the upward Balancing Capacity

Offer for manual FRR validated for a Balancing Service Entity,  $e$ , for a Dispatch Period which includes an Imbalance Settlement Period,  $t$ , on the basis of the last ISP execution, whose solution timeframe shall include that specific Imbalance Settlement Period,  $t$ .

$T_{e,t}^{mFRR,up}$  the percentage of a time period within an Imbalance Settlement Period,  $t$ , when a Balancing Service Entity,  $e$ , was available for the provision of upward manual FRR in real time.

$mFRRQ_{e,t}^{dn}$  the downward Balancing Capacity, in MW, supplied for manual FRR by a Balancing Service Entity,  $e$ , for an Imbalance Settlement Period,  $t$ , in real time.

$mFRRQ_{e,as,t}^{dn}$  the segment,  $as$ , of step,  $s$ , in MW of the downward Balancing Capacity Offer for manual FRR validated for a Balancing Service Entity,  $e$ , for a Dispatch Period which includes an Imbalance Settlement Period,  $t$ , on the basis of the last ISP execution, whose solution timeframe shall include that specific Imbalance Settlement Period,  $t$ .

$T_{e,t}^{mFRR,dn}$  the percentage of a time period within an Imbalance Settlement Period,  $t$ , when a Balancing Service Entity,  $e$ , was available for the provision of downward manual FRR in real time.

5. The upward and downward Balancing Capacity, in MWh, supplied for automatic FRR by a Balancing Service Entity,  $e$ , for an Imbalance Settlement Period,  $t$ , shall be calculated as follows:

$$aFRRQ_{e,t}^{up} = \sum_s \sum_{as} (aFRRQ_{e,as,t}^{up}) \times T_{e,t}^{aFRR,up}$$

$$aFRRQ_{e,t}^{dn} = \sum_s \sum_{as} (aFRRQ_{e,as,t}^{dn}) \times T_{e,t}^{aFRR,dn}$$

where:

$aFRRQ_{e,t}^{up}$  the upward Balancing Capacity, in MW, supplied for automatic FRR by a Balancing Service Entity,  $e$ , for an Imbalance Settlement Period,  $t$ , in real time.

$aFRRQ_{e,as,t}^{up}$  the segment,  $as$ , of step,  $s$ , in MW of the upward Balancing Capacity Offer for automatic FRR validated for a Balancing Service Entity,  $e$ , for a Dispatch Period which includes an Imbalance Settlement Period,  $t$ , on the basis of the last ISP execution, whose solution timeframe shall include that specific Imbalance Settlement Period,  $t$ .

$T_{e,t}^{aFRR,up}$  the percentage of a time period within an Imbalance Settlement Period,  $t$ , when a Balancing Service Entity,  $e$ , was available for the provision of upward automatic FRR in real time.

$aFRRQ_{e,t}^{dn}$  the downward Balancing Capacity, in MW, supplied for automatic FRR by a Balancing Service Entity,  $e$ , for an Imbalance Settlement Period,  $t$ , in real time.



$aFRRQ_{e,as,t}^{dn}$  the segment, as, of step, s, in MW of the downward Balancing Capacity Offer for automatic FRR validated for a Balancing Service Entity,  $e$ , for a Dispatch Period which includes an Imbalance Settlement Period,  $t$ , on the basis of the last ISP execution, whose solution timeframe shall include that specific Imbalance Settlement Period,  $t$ .

$T_{e,t}^{aFRR,dn}$  the percentage of a time period within an Imbalance Settlement Period,  $t$ , when a Balancing Service Entity,  $e$ , was available for the provision of downward automatic FRR in real time.

### Article 91. Calculation of Balancing Capacity Remuneration

1. For each Balancing Service Entity and for each Imbalance Settlement Period, the remuneration for the upward and downward Balancing Capacity supplied for FCR, automatic FRR and manual FRR, shall be calculated taking into account the upward or downward Balancing Capacity supplied and the price of the respective Balancing Capacity Offer step that have been validated on the basis of the last execution of the ISP, whose solution timeframe shall include that specific Imbalance Settlement Period,
2. Similarly, the remuneration of a Balancing Service Entity,  $e$ , for the Balancing Capacity supplied for upward and downward FCR, automatic FRR, and manual FRR in an Imbalance Settlement Period  $t$ , is calculated as follows:

$$FCRC_{e,t}^{up} = \frac{1}{4} \times \sum_s \sum_{as} (FCRQ_{e,as,t}^{up} \times OP_{e,s,t}^{FCR,up}) \times T_{e,t}^{FCR,up}$$

$$FCRC_{e,t}^{dn} = \frac{1}{4} \times \sum_s \sum_{as} (FCRQ_{e,as,t}^{dn} \times OP_{e,s,t}^{FCR,dn}) \times T_{e,t}^{FCR,dn}$$

$$mFRRC_{e,t}^{up} = \frac{1}{4} \times \sum_s \sum_{as} (mFRRQ_{e,as,t}^{up} \times OP_{e,s,t}^{mFRR,up}) \times T_{e,t}^{mFRR,up}$$

$$mFRRC_{e,t}^{dn} = \frac{1}{4} \times \sum_s \sum_{as} (mFRRQ_{e,as,t}^{dn} \times OP_{e,s,t}^{mFRR,dn}) \times T_{e,t}^{mFRR,dn}$$

$$aFRRC_{e,t}^{up} = \frac{1}{4} \times \sum_s \sum_{as} (aFRRQ_{e,as,t}^{up} \times OP_{e,s,t}^{aFRR,up}) \times T_{e,t}^{aFRR,up}$$

$$aFRRC_{e,t}^{dn} = \frac{1}{4} \times \sum_s \sum_{as} (aFRRQ_{e,as,t}^{dn} \times OP_{e,s,t}^{aFRR,dn}) \times T_{e,t}^{aFRR,dn}$$

where:

$FCRC_{e,t}^{up}$  the remuneration in € of a Balancing Service Entity  $e$  for the Balancing Capacity supplied for upward FCR in an Imbalance Settlement Period  $t$ .

$FCRC_{e,t}^{dn}$  the remuneration in € of a Balancing Service Entity  $e$  for the Balancing Capacity supplied for downward FCR in an Imbalance Settlement Period  $t$ .

$T_{e,t}^{FCR,up}$	the percentage of a time period within an Imbalance Settlement Period when the Balancing Service Entity was available for the provision of upward FCR in real time.
$T_{e,t}^{FCR,dn}$	the percentage of a time period within an Imbalance Settlement Period when the Balancing Service Entity was available for the provision of downward FCR in real time.
$mFRRC_{e,t}^{up}$	the remuneration in € of a Balancing Service Entity $e$ for the Balancing Capacity supplied for upward manual FRR in an Imbalance Settlement Period $t$ .
$mFRRC_{e,t}^{dn}$	the remuneration in € of a Balancing Service Entity $e$ for the Balancing Capacity supplied for downward manual FRR in an Imbalance Settlement Period $t$ .
$T_{e,t}^{mFRR,up}$	the percentage of a time period within an Imbalance Settlement Period, $t$ , when a Balancing Service Entity, $e$ , was available for the provision of upward manual FRR in real time.
$T_{e,t}^{mFRR,dn}$	the percentage of a time period within an Imbalance Settlement Period, $t$ , when a Balancing Service Entity, $e$ , was available for the provision of downward manual FRR in real time.
$aFRRC_{e,t}^{up}$	the remuneration in € of a Balancing Service Entity $e$ for the Balancing Capacity supplied for upward automatic FRR in an Imbalance Settlement Period $t$ .
$aFRRC_{e,t}^{dn}$	the remuneration in € of a Balancing Service Entity $e$ for the Balancing Capacity supplied for downward automatic FRR in an Imbalance Settlement Period $t$ .
$T_{e,t}^{mFRR,up}$	the percentage of a time period within an Imbalance Settlement Period, $t$ , when a Balancing Service Entity, $e$ , was available for the provision of upward automatic FRR in real time.
$T_{e,t}^{aFRR,dn}$	the percentage of a time period within an Imbalance Settlement Period, $t$ , when a Balancing Service Entity, $e$ , was available for the provision of downward automatic FRR in real time.
$OP_{e,s,t}^{FCR,up}$	the price in €/MW-hour of step $s$ of the upward Balancing Capacity Offer for FCR of a Balancing Service Entity $e$ that has been validated on the basis of the last execution of the ISP, whose solution timeframe shall include that specific Imbalance Settlement Period, $t$ ,
$OP_{e,s,t}^{FCR,dn}$	the price in €/MW-hour of step $s$ of the downward Balancing Capacity Offer for FCR of a Balancing Service Entity $e$ that has been validated on the basis of the last execution of the ISP, whose solution timeframe shall include that specific Imbalance Settlement Period, $t$ ,
$OP_{e,s,t}^{aFRR,up}$	the price in €/MW-hour of step $s$ of the upward Balancing Capacity Offer for automatic FRR of a Balancing Service Entity $e$ that has been validated on the basis of the last execution of the ISP, whose solution timeframe

shall include that specific Imbalance Settlement Period,  $t$ .

$OP_{e,s,t}^{aFRR,dn}$  the price in €/MW-hour of step  $s$  of the downward Balancing Capacity Offer for automatic FRR of a Balancing Service Entity  $e$  that has been validated on the basis of the last execution of the ISP, whose solution timeframe shall include that specific Imbalance Settlement Period,  $t$ ,

$OP_{e,s,t}^{mFRR,up}$  the price in €/MW-hour of step  $s$  of the upward Balancing Capacity Offer for manual FRR of a Balancing Service Entity  $e$  that has been validated on the basis of the last execution of the ISP, whose solution timeframe shall include that specific Imbalance Settlement Period,  $t$ ,

$OP_{e,s,t}^{mFRR,dn}$  The price in €/MW-hour of step  $s$  of the downward Balancing Capacity Offer for manual FRR of a Balancing Service Entity  $e$  that has been validated on the basis of the last execution of the ISP, whose solution timeframe shall include that specific Imbalance Settlement Period,  $t$ .

3. The total remuneration of all Balancing Service Entities  $e$  for the Balancing Capacity supplied for upward and downward FCR, automatic FRR, and manual FRR during an Imbalance Settlement Period  $t$ , is calculated as follows:

$$BALCAP_t = \sum_e FCRC_{e,t}^{up} + \sum_e FCRC_{e,t}^{dn} + \sum_e mFRR_{e,t}^{up} + \sum_e mFRR_{e,t}^{dn} + \sum_e aFRR_{e,t}^{up} + \sum_e aFRR_{e,t}^{dn}$$

where:

$BALCAP_t$  the total remuneration of all Balancing Service Entities  $e$  for the Balancing Capacity supplied for upward and downward FCR, automatic FRR, and manual FRR in an Imbalance Settlement Period  $t$ .

4. If the calculation of the Balancing Capacity Offer prices is impossible, in particular due to an Emergency Situation, or failure of the Balancing Market System or of the other electronic systems of the HETS Operator, the HETS Operator shall apply the “Rules for settlement in case of suspension of market activities”, approved by RAE, upon recommendation by the Operator according to the provisions of par. 4, article 18 of Law 4425/2016.

## CHAPTER 20

### UPLIFT ACCOUNTS

#### Article 92. HETS Operator Uplift Account

The Premium Account shall include the following individual accounts:

- a) UA-1: HETS Losses Uplift Account
- b) UA-2: Balancing Capacity Uplift Account
- c) UA-3: Financial Neutrality Uplift Account

### Article 93. UA-1 HETS Losses Uplift Account

1. The UA-1 System Losses Uplift Account shall be used to allocate the cost of HETS Losses, which is calculated as the sum of the amounts resulting from the Day-Ahead Market settlement, the Intra-Day Market settlement and the Imbalance Settlement for these Losses.
2. The cost of HETS Losses shall be apportioned and allocated to the Balance Responsible Parties according to the metered offtake of their customers from the Interconnected System in each Imbalance Settlement Period  $t$ , as follows:

$$UPLIFT1_{p,t} = LOSSES_t \times \frac{MQ_{p,t}}{\sum_p MQ_{p,t}}$$

where:

$LOSSES_t$  the total cost of HETS Losses, in €, as it results from the settlement of the Day-Ahead Market, the settlement of the Intra-Day Market and the Imbalance Settlement for these Losses for an Imbalance Settlement Period  $t$ ,

$MQ_{p,t}$  The offtake (calculated at the Transmission System - Distribution Network Limit) in MWh that corresponds to the consumers of the Interconnected System per Balance Responsible Party  $p$  for an Imbalance Settlement Period  $t$ ,

### Article 94. UA-2 Balancing Capacity Uplift Account

1. The UA-2 Balancing Capacity Uplift Account shall be used to allocate the cost of the Balancing Capacity supplied by the Balancing Service Providers.
2. The cost of the Balancing Capacity supply for each Imbalance Settlement Period  $t$ ,  $BALCAP_t$ , shall be allocated to and borne by the Balance Responsible Parties according to the metered offtake of their customers in the Interconnected System in each Imbalance Settlement Period  $t$  as follows:

$$UPLIFT2_{p,t} = BALCAP_t \times \frac{MQ_{p,t}}{\sum_p MQ_{p,t}}$$

where:

$BALCAP_t$  the total remuneration of all Balancing Service Entities  $e$  for the Balancing Capacity supplied for upward and downward FCR, automatic FRR, and manual FRR in an Imbalance Settlement Period  $t$ .

$MQ_{p,t}$  the offtake (calculated at the Transmission System - Distribution Network Limit) in MWh that corresponds to the consumers of the Interconnected System per Balance Responsible Party  $p$  for an Imbalance Settlement Period  $t$ .

### Article 95. UA-3 Financial Neutrality Uplift Account

1. The UA-3 Financial Neutrality Uplift Account shall be used to allocate to Balance Responsible Parties any remaining balance after the calculation of the debits and credits calculated by the HETS Operator for the activated Balancing Energy for manual FCR, the activated Balancing Energy for automatic FRR, the energy activated for purposes

other than balancing and Imbalance Settlement. The above account shall include income or costs resulting from the intended exchanges of energy pursuant to article 50 of Regulation (EU) 2017/2195 and the unintended exchanges of energy pursuant to article 51 of Regulation (EU) 2017/2195.

2. The amount ensuring the financial neutrality of the HETS Operator in each Imbalance Settlement Period  $t$ ,  $NEUTR_t$ , shall be calculated as follows:

$$\begin{aligned}
 NEUTR_t = & \sum_e ABEC_{e,t}^{mFRR,up} + \sum_e ABEC_{e,t}^{aFRR,up} + \sum_e AOEC_{e,t}^{mFRR,up} \\
 & + \sum_e ABEC_{e,t}^{mFRR,dn} + \sum_e ABEC_{e,t}^{aFRR,dn} + \sum_e AOEC_{e,t}^{mFRR,dn} + \sum_p IMBC_{p,t} \\
 & + \sum IDEV_t + UDEV_t
 \end{aligned}$$

where:

$NEUTR_t$  the amount ensuring the financial neutrality of the HETS Operator in an Imbalance Settlement Period  $t$ ,

$ABEC_{e,t}^{mFRR,up}$  the debit or credit to a Balancing Service Entity  $e$ , for an Imbalance Settlement Period  $t$ , for the upward Balancing Energy activated for manual FRR.

$ABEC_{e,t}^{aFRR,up}$  the debit or credit to a Balancing Service Entity  $e$ , for an Imbalance Settlement Period  $t$ , for the upward Balancing Energy activated for automatic FRR.

$AOEC_{e,t}^{mFRR,up}$  the debit or credit to a Balancing Service Entity  $e$ , for an Imbalance Settlement Period  $t$ , for the activated upward Energy supplied for purposes other than balancing.

$ABEC_{e,t}^{mFRR,dn}$  the debit or credit to a Balancing Service Entity  $e$ , for an Imbalance Settlement Period  $t$ , for the downward Balancing Energy activated for manual FRR.

$ABEC_{e,t}^{aFRR,dn}$  the debit or credit to a Balancing Service Entity  $e$ , for an Imbalance Settlement Period  $t$ , for the downward Balancing Energy activated for automatic FRR.

$AOEC_{e,t}^{mFRR,dn}$  the debit or credit to a Balancing Service Entity  $e$ , for an Imbalance Settlement Period  $t$ , for the activated downward Energy supplied for purposes other than balancing.

$IMBC_{p,t}$  the debit or credit to a Balance Responsible Entity,  $p$ , for an Imbalance Settlement Period,  $t$ . The Imbalances for the HETS Losses are included.

$IDEV_t$  the debit or credit for intended exchanges of energy pursuant to article 50 of Regulation (EU) 2017/2195 for an Imbalance Settlement Period,  $t$ .

$UDEV_t$  the debit or credit for unintended exchanges of energy pursuant to article 51 of Regulation (EU) 2017/2195 for an Imbalance Settlement Period,  $t$ .

3. The cost for ensuring the financial neutrality of the HETS Operator,  $NEUTR_t$ , for each Imbalance Settlement Period  $t$ , shall be apportioned and allocated to the Balance Responsible Parties,  $p$ , according to the metered offtake of their customers in the Interconnected System in each Imbalance Settlement Period  $t$ , as follows:

$$UPLIFT3_{p,t} = NEUTR_t \times \frac{MQ_{p,t}}{\sum_p MQ_{p,t}}$$

where:

$NEUTR_t$  the amount ensuring the financial neutrality of the HETS Operator in each Imbalance Settlement Period.  $t$ .

$MQ_{p,t}$  the offtake (calculated at the Transmission System - Distribution Network Limit) in MWh that corresponds to the consumers of the Interconnected System per Balance Responsible Party  $p$  for an Imbalance Settlement Period  $t$ .

## CHAPTER 21

### NON-COMPLIANCE CHARGES

#### Article 96. Consequences of unlawful submission of Non-Availability Declarations

1. In the event of non-submission or unlawful submission of a Non-Availability Declaration for a Balancing Service Entity  $e$  according to Article 47, the HETS Operator shall impose on the respective Balancing Service Provider a charge for month  $m$  equal to  $NCAV_{e,m}$ , which shall be calculated as follows:

$$NCAV_{e,m} = UNCAV \times (1 + A_{AV}) \times (NAV_e)^x \times \sum_{d \in m} NACAP_{e,d}$$

where:

$UNCAV$  the unitary Non-Compliance Charge for unlawful Submission of Non-Availability Declarations in €/MW,

$A_{AV}$  a premium coefficient which may vary by category of Balancing Service Entity,

$NAV_e$  the number of Dispatch Days in a calendar month for which the Balancing Service Provider  $p$  did not submit or unlawfully submitted a Non-Availability Declaration for the Balancing Service Entity it represents, whose maximum value shall be equal to  $NAV_{max}$ ,

$NAV_{max}$  the maximum value of  $NAV_e$ , which may vary by category of Balancing Service Entity,

$x$  an exponential factor between 0 and 1, and

$NACAP_{e,d}$  the Capacity of a Balancing Service Entity  $e$ , in accordance with the Registered Characteristics, which was not available and for which the Balancing Service



Provider did not submit or unlawfully submitted a Non-Availability Declaration for Dispatch Day  $d$ .

2. The numerical values of the unitary charge  $UNCAV$ , the maximum value of the serial counter  $NAV_{max}$ , the exponential factor  $x$  and the charge premium coefficient  $A_{AV}$ , shall be determined by decision of RAE, upon recommendation by the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.

### **Article 97. Consequences of unlawful submission of Techno-Economic Declaration**

1. In the event of non-submission or unlawful submission of a Techno-Economic Declaration for a Balancing Service Entity  $e$  according to Article 46, the HETS Operator shall impose on the respective Balancing Service Provider a charge for month  $m$  equal to  $NCTD_{e,m}$ , which shall be calculated as follows:

$$NCTD_{e,m} = UNCTD \times (1 + A_{TD}) \times (NTD_e)^x \times \sum_{d \in m} NSCAP_{e,d}$$

where:

$UNCTD$  the unitary Non-Compliance Charge for unlawful submission of Techno-Economic Declarations in €/MW,

$A_{TD}$  a premium coefficient which may vary by category of Balancing Service Entity,

$NTD_e$  the number of Dispatch Days in the current calendar month  $m$ , for which the Balancing Service Provider did not submit or unlawfully submitted a Techno-Economic Declaration for the Balancing Service Entity,  $e$ , it represents, whose maximum value shall be equal to  $NTD_{max}$ ,

$NTD_{max}$  the maximum value of  $NTD_e$ , which may vary by category of Balancing Service Entity,

$x$  an exponential factor between 0 and 1, and

$NSCAP_{e,d}$  the Capacity of a Balancing Service Entity  $e$ , in accordance with its Registered Operation Characteristics, for which the Participant did not submit or unlawfully submitted a Techno-Economic Declaration for Dispatch Day  $d$ .

2. The numerical values of the unitary charge  $UNCTD$ , the maximum value of the serial counter  $NTD_{max}$ , the exponential factor  $x$  and the charge premium coefficient  $A_{TD}$ , shall be determined by decision of RAE, upon recommendation by the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.

### **Article 98. Consequences of non-submission of Balancing Energy Offers**

1. In the event of non-submission or unlawful submission of Balancing Energy Offers for manual FRR or automatic FRR for a Balancing Service Entity  $e$ , for a manual FRR Time Unit,  $t$ , for month  $m$ , when the respective Balancing Service Provider is under a relevant obligation, the HETS Operator shall impose a charge on the Balancing Service Provider for month  $m$ , which shall be calculated as follows:

$$NCBEO_{e,m} = UNCBEO \times (1 + A_{BEO}) \times (NBEO_e)^x \times \sum_{t \in m} (BEOO_{e,t}^{up} + BEOO_{e,t}^{dn})$$

where:

*UNCBEO* the unitary Non-Compliance Charge for unlawful submission of Balancing Energy Offers in €/MWh,

*A<sub>BEO</sub>* a coefficient, the value of which depends on the number of manual FRR Time Units *t*, for which the Balancing Service Provider did not submit or unlawfully submitted Balancing Energy Offers for Balancing Service Entity *e*, within a month,

*NBEO<sub>e</sub>* the number of manual FRR Time Units within a calendar month, for which the Balancing Service Provider did not submit or unlawfully submitted Balancing Energy Offers for its Balancing Service Entity *e*, whose maximum value shall be equal to *NBEO<sub>max</sub>*

*x* an exponential factor between 0 and 1,

*BEOO<sub>e,t</sub><sup>up</sup>* the Energy quantity for which the Balancing Service Provider did not submit or unlawfully submitted an upward Balancing Energy Offer for manual or automatic FRR for Balancing Service Entity *e* for manual FRR Time Unit *t*, although it had the relative obligation, in MWh, and

*BEOO<sub>e,t</sub><sup>dn</sup>* the Energy quantity for which the Balancing Service Provider did not submit or unlawfully submitted a downward Balancing Energy Offer for manual or automatic FRR for Balancing Service Entity *e* for manual FRR Time Unit *t*, although it had the relative obligation, in MWh, and

2. The numerical values of the unitary charge *UNCBEO*, the maximum value of the serial counter *NBEO<sub>e</sub>* and the exponential factor *x* and the charge premium coefficient *A<sub>BEO</sub>*, shall be determined by decision of RAE, upon recommendation by the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.

### **Article 99. Consequences of significant deviation from the Registered Characteristics**

1. In the event that the HETS Operator ascertains a significant unfavorable deviation of the actual values of a Balancing Service Entity *e*, as they derive from the operation of the said Entity during the Integrated Scheduling Process, from the respective values in its Registered Characteristics, the HETS Operator shall impose a charge on the respective Balancing Service Provider for each day *d* of month *m*, which shall be equal to *NCDC<sub>e,d</sub>* and shall be calculated as follows:

$$NCDC_{e,d} = UNDC_{e,char} \times NCAP \times (1 + A_{DC}) \times \max\{(DC_{e,d} - DC_{TOL}), 0\}$$

where:

*UNDC<sub>e,char</sub>* the unitary Non-Compliance Charge for a significant unfavorable deviation from the Registered Characteristics in €/MW, which may vary depending on the Registered Characteristic and on the Balancing Service Entity category.

$A_{DC}$	a premium coefficient for the Charge which depends on the number of days within a month, when a significant unfavorable deviation from the Registered Characteristics is observed.
$DC_{TOL}$	a coefficient representing the margin of tolerance, expressed as a percentage (%), for each of the Registered Characteristics, whose numerical value may vary by Registered Characteristic and by Balancing Service Entity,
$DC_{e,d}$	the daily average of DC figures on the Dispatch Day $d$ in question for each Registered Characteristic of a Balancing Service Entity $e$ , where DC represents the ratio between the absolute value of the difference in the numerical value of the Registered Characteristic of the Balancing Service Entity for which a significant unfavorable deviation from the value estimated for the said Registered Characteristic by the HETS Operator was ascertained and the numerical value of the relevant Registered Characteristic of the Balancing Service Entity, and it shall be calculated for each Dispatch Period.

The above daily charge shall not be imposed on the Balancing Service Provider for the first Dispatch Days, which shall be equal to a maximum number of days  $NDC$ , for which a significant unfavorable deviation of the Registered Characteristics of the Balancing Service Entity  $e$  from the respective estimated values for the said Entity was ascertained.

2. significant unfavorable deviation means any instance where the numerical value of one of the Registered Characteristics of a Balancing Service Entity, as estimated by the HETS Operator, deviates at least by  $DC_{TOL}\%$  from the declared numerical value:
  - a) Maximum Available Capacity of a Balancing Service Entity, as it derives from the Registered Characteristics, the Non-Availability Declarations and the Declarations of Major Outage by the Balancing Service Entity.
  - b) Technically Minimum Generation of the Balancing Service Entity in accordance with its Registered Characteristics.
3. The numerical values of the unitary charge  $UNCDC_{e,char}$ , the premium coefficient  $A_{DC}$ , the maximum number of days  $NDC$  and the tolerance margin  $DC_{TOL}$  shall be determined by decision of RAE, upon recommendation of the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.

#### **Article 100. Consequences of non-submission of Balancing Capacity Offers**

1. In the event of non-submission or unlawful submission of Balancing Capacity Offers for FCR, automatic FRR and manual FRR for a Balancing Service Entity  $e$  for a Dispatch Day  $d$ , when the respective Balancing Service Provider is under a relevant obligation, the HETS Operator shall impose a charge on the Balancing Service Provider for the month  $m$ , which shall be calculated as follows:

$$NCRO_{e,m} = UNCRO \times (1 + A_{RO}) \times (NRO_e)^x \times \sum_{d \in m} (DFCR_{e,d} + DaFRR_{e,d} + DmFRR_{e,d})$$

where:

$UNCRO$  the unitary Non-Compliance Charge for unlawful submission of Balancing Capacity Offers €/MW,

$A_{RO}$  a coefficient, the value of which depends on the number of Dispatch Periods,  $t$ , during which the Balancing Service Provider did not submit or unlawfully submitted Balancing Capacity Offers for Balancing Service Entity  $e$ , within a month,

$NRO_e$  the number of Dispatch Periods in a calendar month for which the Balancing Service Provider did not submit or unlawfully submitted a Balancing Capacity Offer for its Balancing Service Entity  $e$ , and whose maximum value shall be equal to  $NRO_{max}$ ,

$NRO_{max}$  The maximum value of  $NRO_e$ ,

$x$  an exponential factor between 0 and 1,

$DFCR_{e,d}$  the ability of the Balancing Service Entity to supply Balancing Energy for FCR  $e$ , in accordance with its Declared Characteristics, for which the Balancing Service Provider did not submit or unlawfully submitted a Balancing Capacity Offer for FCR for the Dispatch Day,  $d$ ,

$DaFRR_{e,d}$  the ability of the Balancing Service Entity to supply Balancing Energy for automatic FRR  $e$ , in accordance with its Declared Characteristics, for which the Balancing Service Provider did not submit or unlawfully submitted a Balancing Capacity Offer for automatic FRR for the Dispatch Day,  $d$ , and

$DmFRR_{e,d}$  the ability of the Balancing Service Entity to supply Balancing Energy for manual FRR  $e$ , in accordance with its Declared Characteristics, for which the Balancing Service Provider did not submit or unlawfully submitted a Balancing Capacity Offer for manual FRR for the Dispatch Day,  $d$ ,

2. The numerical values of the unitary charge  $UNCRO$ , the maximum value of the serial counter  $NRO_{max}$  and the exponential factor  $x$  and the charge premium coefficient  $A_{RO}$ , shall be determined by decision of RAE, upon recommendation of the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.

**Article 101. Consequences of significant imbalance in the supply of upward or downward Balancing Energy or Energy for purposes other than balancing by a Balancing Service Entity**

1. In the event of a significant deviation in the performance of a Dispatch Instruction for upward or downward Balancing Energy or Energy for purposes other than balancing by a Balancing Service Entity  $e$ , i.e. if the energy supplied by the Balancing Service Entity  $e$  is significantly different from the Dispatch Instruction, the HETS Operator shall impose a charge on the respective Balancing Service Provider for Imbalance Settlement Period  $t$ , which shall be equal to  $NCNPBE_{e,t}$ , and shall be calculated as follows:

If  $|DINST_{e,t} - MQ_{e,t}| > TOL_{BE,e} \times NCAPE_{e,t}$  then:

$$NCNPBE_{e,t} = UNCNPBE \times A_{NPBE} \times |DINST_{e,t} - MQ_{e,t}|$$

where:

$UNCNPBE$  the unitary Non-Compliance Charge for significant imbalance in the supply of upward or downward Balancing Energy or Energy for purposes other than balancing by a Balancing Service Entity they represent in €/MWh,

$A_{NPBE}$  a coefficient, the value of which depends on the number of Imbalance Settlement Periods,  $t$ , in which the significant imbalance was observed, within the calendar month.

$MQ_{e,t}$  The metered energy of the Balancing Service Entity  $e$  for the Imbalance Settlement Period  $t$  adjusted for the HETS Losses and the Distribution Network Losses in MWh,

$TOL_{BE}$  the margin of tolerance for imposing Non-Compliance Charges on Balancing

Service Providers for a significant imbalance in the supply of upward or downward Balancing Energy or Energy for purposes other than balancing, expressed as a percentage (%). The above tolerance margin may vary by Balancing Service Entity,

$NCAP_{e,t}$  the Maximum Net Capacity of a Balancing Service Entity  $e$  in MW. If the Balancing Service Entity is a Multi-Shaft Combined Cycle Generating Unit, the Maximum Net Capacity corresponding to the operation configuration that was running during the Imbalance Settlement Period  $t$  shall be taken into account,

$DINST_{e,t}$  the Dispatch Instruction received by the Balancing Service Entity  $e$  for an Imbalance Settlement Period  $t$

2. A significant imbalance is considered to be a deviation exceeding the applicable tolerance margin  $TOL_{BE}$ .
3. The numerical values of the unitary charge  $UNCNPBE$ , the coefficient  $A_{NPBE}$  and the tolerance margin  $TOL_{BE}$  shall be determined by decision of RAE, upon recommendation by the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.

### Article 102. Consequences of significant systematic demand imbalances

1. If during a month  $m$  significant imbalances between the amount of energy measured during an Imbalance Settlement Period at the energy meters represented by a Load Representative  $p$  as a whole and the corresponding Market Schedules of the same Load Representative occur systematically, the HETS Operator shall impose a charge on the Load Representative, which shall be equal to  $NBAL_{p,m}$  and shall be calculated on the basis of the total absolute Imbalances within the month  $m$  and the active value of imbalances within the month  $m$ .
2. A significant imbalance is considered to be the normalized absolute deviation for the month  $m$  which exceeds the tolerance margin  $TOL_{ld,ADEV}$  or the normalized active value of the imbalances for the month  $m$  which exceeds the tolerance margin  $TOL_{ld,RMSDEV}$ .
3. The deviation  $DEV_{p,t}$  in each Imbalance Settlement Period  $t$ , the monthly absolute

deviation  $ADEV_{p,m}$  in month  $m$ , the normalized standard deviation  $NADEV_{p,m}$  in month  $m$ , the monthly active value deviation  $RMSDEV_{p,m}$  and the normalized active value deviation in month  $m$   $NRMSDEV_{p,m}$ , for Load Representative  $p$  are defined as follows:

$$DEV_{p,t} = MS_{p,t} - MQ_{p,t}$$

$$ADEV_{p,m} = \sum_{t \in m} |DEV_{p,t}|$$

$$NADEV_{p,m} = \frac{ADEV_{p,m}}{\sum_{t \in m} MQ_{p,t}}$$

$$RMSDEV_{p,m} = \sqrt{\sum_{t \in m} DEV_{p,t}^2}$$

$$NRMSDEV_{p,m} = \frac{RMSDEV_{p,m}}{\sqrt{\sum_{t \in m} [(MQ_{p,t})^2]}}$$

where:

$DEV_{p,t}$  the deviation of the metered offtake from the Market Schedule, for the Load representative  $p$  for the Imbalance Settlement Period  $t$ .

$MS_{pt}$  The Market Schedule of the Load representative  $p$  for the Imbalance Settlement Period  $t$

$MQ_{pt}$  The offtake (calculated at the Transmission System - Distribution Network Limit) in MWh that corresponds to the consumers of the Interconnected System per Load representative  $p$  for the Imbalance Settlement Period  $t$ .

4. The monthly charge to the Load Representative  $p$  for the month  $m$  shall be calculated as the maximum amount of sanctions resulting from the monthly absolute imbalances and the active values of the imbalances:

$$NCBAL_{p,m} = \max \left( \begin{array}{l} \left( UNCBAL_{ADEV} \cdot ADEV_{p,m} \right) \cdot \left( NADEV_{p,m} - TOL_{ld,ADEV} \right), \\ \left( UNCBAL_{RMSDEV} \cdot RMSDEV_{p,m} \right) \cdot \left( NRMSDEV_{p,m} - TOL_{ld,RMSDEV} \right), \\ 0 \end{array} \right)$$

where:

$UNCBAL_{ADEV}$  the unitary charge corresponding to Non-Compliance Charges to Load Representatives for the monthly normalized absolute imbalance,

$UNCBAL_{RMSDEV}$  the unitary charge corresponding to Non-Compliance Charges to Load Representatives for the monthly normalized active value imbalance,

$TOL_{ld,ADEV}$  the tolerance margin for imposing Non-Compliance Charges on Load Representatives for the monthly normalized absolute imbalance, and

$TOL_{ld,RMSDEV}$  the tolerance margin for imposing Non-Compliance Charges on Load Representatives for the monthly active value of imbalances,



5. The numerical values of the unitary charges  $UNCBAL_{ADEV}$  and  $UNCBAL_{RMSDEV}$ , and the tolerance margins  $TOL_{ld,ADEV}$  and  $TOL_{ld,RMSDEV}$ , shall be determined by decision of RAE, upon recommendation of the HETS Operator. The maximum tolerance margins may be expressed on the basis of the offtake  $MQ_{p,t}$  (calculated at the Transmission System - Distribution Network Limit) in MWh that corresponds to the consumers of the Interconnected System per Load representative  $p$  for the Imbalance Settlement Period  $t$ . This decision shall be published at least two months prior to the implementation of the new values of the above parameters.
6. Non-Compliance Charges shall not be imposed on the Last Resort Provider and the Default Provider for significant systematic imbalances in demand, and only for the demand they represent in this capacity.
7. Non-Compliance Charges under this Article shall not be imposed with regard to the consumption of the auxiliary loads of Dispatchable Generating Units and RES Units.
8. The Imbalance Settlement Periods during which a Dispatch Instruction was issued for Balancing Energy supply from a Dispatchable Load Portfolio shall be excluded from the above calculation.

**Article 103. Consequences of significant systematic imbalances in the production of RES Portfolios**

1. If significant imbalances occur during a month  $m$  between the amount of energy generated by a Non-Dispatchable RES Portfolio or Dispatchable RES Portfolio during an Imbalance Settlement Period and the corresponding Market Schedule of the same Balancing Service Entity, the HETS Operator shall impose a charge on the relevant Participant, which shall be equal to  $NCBALR_{e,m}$  and shall be calculated on the basis of the total absolute Imbalances within the month  $m$  and the active value of imbalances within the month  $m$ .
2. A significant imbalance is considered to have occurred when the normalized absolute deviation for the month  $m$  exceeds the tolerance margin  $TOL_{r,ADEV}$ , or the normalized active value of the imbalances for month  $m$  exceeds the tolerance margin  $TOL_{r,RMSDEV}$ .
3. The deviation in each Imbalance Settlement Period  $t$ ,  $DEV_{e,t}$  the monthly absolute deviation in month  $m$ ,  $ADEV_{e,m}$ , the normalized standard deviation in month  $m$ ,  $NADEV_{e,m}$ , the monthly active value deviation,  $RMSDEV_{e,m}$ , and the normalized active value deviation in month  $m$ ,  $NRMSDEV_{e,m}$  for a Balancing Service Entity  $e$  are defined as follows:

$$DEV_{e,t} = MS_{et} - MQ_{et}$$

$$ADEV_{e,m} = \sum_{t \in m} |DEV_{e,t}|$$

$$NADEV_{e,m} = \frac{ADEV_{e,m}}{\sum_{t \in m} MQ_{e,t}}$$

$$RMSDEV_{e,m} = \sqrt{\sum_{t \in m} DEV_{e,t}^2}$$

$$NRMSDEV_{e,m} = \frac{RMSDEV_{e,m}}{\sqrt{\sum_{t \in m} MQ_{e,t}^2}}$$

where:

$DEV_{e,t}$  the deviation from the Market Schedule of the Balancing Service Entity  $e$  for the Imbalance Settlement Period  $t$ ,

$MS_{et}$  the Market Schedule of the Balancing Service Entity  $e$  for the Imbalance Settlement Period  $t$ , and

$MQ_{et}$  the energy generated by the Balancing Service Entity  $e$  for the Imbalance Settlement Period  $t$ .

4. The monthly charge corresponding to the Balancing Service Entity  $e$  for the month  $m$  shall be calculated as the maximum amount of sanctions resulting from the monthly absolute Imbalances and the active values of the imbalances:

$$NCBAL_{e,m} = \max \left( \begin{array}{l} \left( UNCBALR_{ADEV} \cdot ADEV_{e,m} \right) \cdot \left( NADEV_{e,m} - TOL_{r,ADEV} \right), \\ \left( UNCBALR_{RMSDEV} \cdot RMSDEV_{e,m} \right) \cdot \left( NRMSDEV_{e,m} - TOL_{r,RMSDEV} \right), \\ 0 \end{array} \right)$$

where:

$UNCBALR_{ADEV}$  the unitary Non-Compliance Charge for RES Units for the monthly normalized absolute imbalance,

$UNCBALR_{RMSDEV}$  the unitary Non-Compliance Charge for RES Units for the monthly normalized active value imbalance,

$TOL_{r,ADEV}$  the tolerance margins for imposing Non-Compliance Charges to RES Units for the monthly normalized absolute imbalance, and

$TOL_{r,RMSDEV}$  the tolerance margins for imposing Non-Compliance Charges to RES Units for the monthly normalized active value imbalance, and

5. The numerical values of the unitary charges  $UNCBALR_{ADEV}$  and  $UNCBALR_{RMSDEV}$ , and the tolerance margins  $TOL_{r,ADEV}$  and  $TOL_{r,RMSDEV}$ , shall be determined by decision of RAE, upon recommendation of the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.
6. The Imbalance Settlement Periods during which a Dispatch Instruction was issued for Balancing Energy supply from a Dispatchable RES Units Portfolio shall be exclude from the above calculation.

#### **Article 104. Non-Compliance Charge for import/export deviations**

1. In the event of difference between the Market Schedule referring to the imports/exports of a Participant and the corresponding Long-Term Physical Transmission Rights

Declaration for the import/export of electricity through an interconnection for which there is an obligation for physical delivery, the HETS Operator shall impose a charge on the Participant for each Imbalance Settlement Period, which shall be equal to the absolute value of the above deviation multiplied by the unitary charge for Cross-border Trade Physical Rights Imbalance UNCIR for imports and UNCER for exports.

2. In the event of difference between the Market Schedule referring to the imports/exports of a Participant and the corresponding implemented Schedule for the import/export of electricity through an interconnection, the HETS Operator shall impose a charge on the Participant for each Imbalance Settlement Period, which shall be equal to the absolute value of the above deviation multiplied by the unitary charge for Cross-border Trade Imbalance UNCIT for imports and UNCET for exports.
3. The numerical values of the unitary charges for Cross-border Trade Imbalances, UNCIR, UNCER, UNCIT and UNCET, shall be determined by decision of RAE, upon recommendation by the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.

#### **Article 105. Non-Compliance Charge for infeasible Market Schedule**

1. If the Market Schedule of a Balancing Service Entity is not feasible based on its Declared Characteristics and its operational status, a charge shall be imposed on the respective Balancing Service Provider for each Market Time Period in which the infringement is established. Indicatively, for the Dispatchable Production Units, an infeasible Market Schedule may include the following cases:
  - a) The violation of the Declared Characteristics referring to the commitment or/and decommitment of the Balancing Service Entity (for instance, minimum up/down time, synchronization time, de-synchronization time, soak time etc.) or
  - b) The violation of Maximum or/and Minimum Available Capacity, or
  - c) The violation of Ramp Up or/and Ramp Down Rate:
  - d) The violation of the maximum daily energy injection constraint.
2. In the event of an infeasible Market Schedule of a Balancing Service Entity  $e$ , the HETS Operator shall impose a charge on the respective Balancing Service Provider for month  $m$ , for each Market Time Period  $t$ , which shall be equal to  $NCNAMS_{e,m}$  and shall be calculated as follows:

$$NCNAMS_{e,m} = \sum_{t \in m} UNCNAMS_r \times (1 + A_{NAMS}) \times VQ_{e,t}$$

where:

$UNCNAMS_r$  the unitary Non-Compliance Charge for infeasible Market Schedule in €/MWh, which may vary depending on the cause of the infringement,

$A_{NAMS}$  a premium coefficient which may vary by category of Balancing Service Entity,

$VQ_{e,t}$  The quantity of the infringement in MWh for the relevant Market Time Period  $t$ , for which the Balancing Service Entity,  $e$ , is charged.

3. When calculating the quantity of the infringement,  $VQ_{e,t}$ , tolerance margins may be

applied,  $TOL_{r,e}$ , which may vary depending on the cause of the infringement and the Balancing Service Entity category.

4. The numerical values of the unitary charges  $UNCNAMS_r$ , the premium coefficients  $A_{NAMs}$  and the tolerance margins,  $TOL_{r,e}$ , shall be determined by decision of RAE, upon recommendation by the HETS Operator. This decision shall be published at least two months prior to the implementation of the new values of the above parameters.
5. Details regarding the cases when an Infeasible Market Schedule is calculated, the relevant inspections and the method of calculation of the infringement quantity  $VQ_{e,t}$  are specified in the Technical Decision "Balancing Market Settlement".

#### **Article 106. Management of the amount of non-Compliance Charges**

1. The balance in the non-Compliance Charges Account, which consists of the payments made for non-Compliance Charges, in accordance with CHAPTER 21 of this Rulebook, shall be used to cover any default of participants registered in the HETS Operator Registry or of Clearing Members, in accordance with the provisions of the HETS Grid Code, of this Article, of CHAPTER 23 of this Rulebook and of the Clearing Rulebook for Balancing Market Positions, and if there is no Clearing House in the Balancing Market, in accordance with this Article and CHAPTER 24 of this Rulebook.
2. The part of the Non-Compliance Charges Account that is used to cover Clearing Member defaults shall be the Prefunded Financial Resources, as defined in article 14 par. 3 of Law 4425/2016 and the Clearing Rulebook for Balancing Market Positions. The initial amount of Pre-Funded Financial Resources is set as a percentage ( $a\%$ ) of the available balance of the Non-Compliance Charges Account and recalculated on a quarterly basis or ad hoc in cases where the resources have been used due to a Clearing Member's default. At the time of recalculation, the Pre-Funded Financial Resources shall be increased by  $a\%$  of the total Non-Compliance Charges which have been collected during the period since the previous calculation, taking also into account any income or costs for their management as well as any debits or credits arising from the management of the Clearing Member's default. The Pre-Funded Financial Resources as calculated above cannot be less than  $a\%$  of the available balance of the Non-Compliance Charges Account as the latter stands on the second (2nd) business day prior to the day of calculation. If they are less, the Prefunded Financial Resources shall be set at  $\alpha\%$  of the funds available on the Non-Compliance Charges Account. The HETS Operator shall notify the Clearing House of the available balance of the Non-Compliance Charges Account one (1) day prior to the day of recalculation. The Prefunded Financial Resources, as recalculated each time, shall be at the disposal of the Clearing House and shall be kept in an account of the Clearing House with the Bank of Greece with the HETS Operator as beneficiary.
3. At the time of the entry into force of this Rulebook, the balance of the Reserve Account of the HETS Operator pursuant to Decision No. 57/2012 of RAE shall be transferred to the Non-Compliance Charges Account, after deduction of any amounts needed to cover defaults that existed before the entry into force of this Rulebook.
4. The percentage  $\alpha\%$  shall be initially set at 50% and it may be updated annually by decision of RAE upon recommendation of the Clearing House and the HETS Operator.
5. The above shall apply accordingly even when no Clearing House operates in the Balancing Market.

## CHAPTER 22

### BALANCING MARKET SETTLEMENT PROCEDURE

#### Article 107. Balancing Market Settlement Procedure

1. The Balancing Market Settlement Procedure shall be implemented on a weekly basis. The Settlement Week W shall be defined as the time period between Monday, at 00:00 CET and the following Monday at 00:00 CET.
2. The Initial Settlement for Week W shall be carried out according to the following timeline:
  - a) Until Thursday of week W+1, at 12:00 EET the HETS Operator shall inform the Participants of the results of the Initial Settlement.
  - b) Until Thursday of week W+1, at 12:00 EET the HETS Operator shall inform the Clearing House about the details of the Initial Clearing results for the execution of its responsibilities pursuant to Article 78 of this Rulebook and the Clearing Rulebook for Balancing Market Positions.
3. The Corrective Settlement for Week W shall be carried out according to the following timeline:
  - a) Until Wednesday of week W+6, at 12:00 EET the HETS Operator shall inform the Participants of the results of the Corrective Settlement.
  - b) Until Monday of week W+7, at 12:00 EET the Participants shall submit to the HETS Operator any reasoned objections they may have as to the results of the Corrective Settlement.
  - c) Until Thursday of week W+7, at 12:00 EET the HETS Operator shall inform the Participants of the results of the Corrective Settlement, having taken into account the objections raised by the Participants and having made the necessary corrections.
  - d) Until Thursday of week W+7, at 12:00 EET the HETS Operator shall inform the Clearing House about the details of the Corrective Settlement results, having taken into account the objections raised by the Participants and having made the necessary corrections, for the execution of its responsibilities pursuant to Article 78 of this Rulebook and the Clearing Rulebook for Balancing Market Positions.
4. For the purposes of the Final Settlement, each year Y shall be divided into two “Half-Year Settlement Periods” as follows: The first Half-Year Settlement Period shall include 26 Settlement Weeks starting on the first Monday of year Y, at 00:00 CET. The second Half-Year Settlement Period shall include the Settlement Weeks of the period starting on the twenty-sixth Monday of year Y, at 00:00 CET, and ending on the Sunday before the first Monday of year Y+1, at 24:00 CET.
5. The Final Settlement for the first Half-Year Settlement Period shall be carried out according to the following timetable:
  - a) Until the twenty-sixth (26) Tuesday of year Y, the Network Operators shall submit to the HETS Operator the final measurements for Low-Voltage customers and any

- corrections in measurements for Medium-Voltage customers they may have for the first Half-Year Settlement Period of year Y-1.
- b) Until the thirty-fourth (34) Thursday of year Y, the HETS Operator shall inform the Participants of the results for the first Half-Year Settlement Period of year Y-1.
  - c) Until the thirty-sixth (36) Thursday of year Y, the Participants shall submit to the HETS Operator any reasoned objections they may have as to the Final Settlement for the first Half-Year Settlement Period of year Y-1.
  - d) Until the fortieth (40) Thursday of week Y, at 12:00 EET the HETS Operator shall inform the Participants of the results for the first Half-Year Settlement Period of year Y-1, having taken into account the objections raised by the Participants and having made the necessary corrections.
  - e) Until the fortieth (40) Thursday of week Y, at 12:00 EET the HETS Operator shall inform the Clearing House of the inform for the first Half-Year Settlement Period of year Y-1, having taken into account the objections raised by the Participants and having made the necessary corrections, for the execution of its responsibilities pursuant to Article 78 of this Rulebook and the Clearing Rulebook for Balancing Market Positions.
6. The Final Settlement for the second Half-Year Settlement Period shall be carried out according to the following timetable:
- a) Until the fifty-second (52) Tuesday of year Y, the Network Operators shall submit to the HETS Operator the final measurements for Low-Voltage customers and any corrections in measurements for Medium-Voltage customers they may have for the second Half-Year Settlement Period of year Y-1.
  - b) Until the eighth (8) Thursday of year Y+1, the HETS Operator shall inform the Participants of the results for the second Half-Year Settlement Period of year Y-1.
  - c) Until the tenth (10) Thursday of year Y+1, the Participants shall submit to the HETS Operator any reasoned objections they may have as to the Final Settlement for the second Half-Year Settlement Period of year Y-1.
  - d) Until the fourteenth (14) Thursday of year Y+1, at 12:00 EET the HETS Operator shall inform the Participants of the results for the second Half-Year Settlement Period of year Y-1, having taken into account the objections raised by the Participants and having made the necessary corrections.
  - e) Until the fourteenth (14) Thursday of year Y+1, at 12:00 EET the HETS Operator shall inform the Clearing House of the results for the second Half-Year Settlement Period of year Y-1, having taken into account the objections raised by the Participants and having made the necessary corrections, for the execution of its responsibilities pursuant to Article 78 of this Rulebook and the Clearing Rulebook for Balancing Market Positions.
7. As part of the performance of Supplementary Settlements, the HETS Operator shall:
- a) make any necessary adjustment to or revision of the measurement data,
  - b) make any necessary adjustment to or revision of the data resulting from any Dispute settlement,
  - c) use updated or revised data submitted by the Power Exchange or the Distribution Network Operators,



- d) use revised Balancing Service data.
8. A Corrective Settlement for a period or on a day that is not provided for in the timetable of this Article may only be performed by decision of RAE upon a reasoned request of the Participant or the Participants having a legitimate interest, provided that it can be proven that the failure to perform an additional Corrective Settlement shall be a threat to the viability of the interested party.
  9. After the Final Settlement has been performed pursuant to the timetable of paragraphs 5 and 6 of this Article, no corrections to Settlement data or Settlement results can be made, except upon a reasoned request of the Participant or the Participants having a legitimate interest, provided that it can be proven that the failure to perform an additional Corrective Settlement shall be a threat to the viability of the interested party. The request shall be submitted to RAE and the settlement shall be performed again only after its decision. After the Final Settlement has been performed pursuant to the timetable of paragraphs 5 and 6 of this Article, corrections to Settlement data or Settlement results can also be made if this is required for the enforcement of a judicial decision or an arbitral award.
  10. In the cases of paragraph 9 of this Article and if any amounts for debits or credits to Participants who are no longer registered in the HETS Operator Registry arise, the said amounts shall be allocated to the Balance Responsible Parties,  $p$ , depending on the metered offtake of their customers from the Interconnected System for Settlement Weeks W-11 to W-8 starting from the Settlement Week when the Settlement takes place:

$$CHARGE_p = AMOUNT \times \frac{MQ_{p,WS}}{\sum_p(MQ_{p,WS})}$$

where:

- $WS$  the period between W-11 and W-8 starting from the Settlement Week when the Settlement takes place
- $AMOUNT$  the amount of debits or credits to the Participants who are no longer registered in the HETS Operator Registry
- $MQ_{p,WS}$  the offtake (calculated at the Transmission System - Distribution Network Limit) in MWh that corresponds to the consumers of the Interconnected System per Balance Responsible Party  $p$  for a period WS

No corrections shall be made to the cash amounts calculated in the Final Settlements and allocated to the Balance Responsible Parties by reason of any revised data regarding the metered offtake  $MQ_{p,WS}$  of their customers.

11. By way of exception to the timetable of paragraphs 1 to 6 of this Article, the Settlement of Non-Compliance Charges shall be performed on a monthly basis. The Settlement months correspond to calendar months. For each Settlement Month, M, the settlements shall be carried out according to the following timeline:
  - a) Until the penultimate Wednesday of the month M+2 the HETS Operator shall inform the Participants of the Non-Compliance Charges.
  - b) Until the last Monday of the month M+2 the Participants shall submit to the HETS Operator any reasoned objections.
  - c) Until the last Thursday of the month M+2 the HETS Operator shall inform the Clearing House of the Settlement results for Non-Compliance Charges, having taken

into account the objections raised by the Participants and having made the necessary corrections.

**Article 108. Content of Settlement results notified to the Participants**

1. The Settlement results notified to the Balancing Service Providers shall include the following details:
  - a) The ID of the Balancing Service Provider,
  - b) The Market Schedules of each Balancing Service Entity,
  - c) The Dispatch Instruction of each Balancing Service Entity per manual FRR Time Unit,
  - d) The measured quantity of Energy of the Balancing Service Entity per Imbalance Settlement Period,
  - e) The activated Balancing Energy for automatic and manual FRR of the Balancing Service Entity per Imbalance Settlement Period,
  - f) The Balancing Capacity supplied by the Balancing Service Entity per Imbalance Settlement Period and per Balancing Capacity Type,
  - g) The Imbalance and Imbalance Adjustment Quantities for the Balancing Service Entity per Imbalance Settlement Period,
  - h) The debit or credit for Balancing Energy and Balancing Capacity to the Balancing Service Provider for the Balancing Service Entity per Imbalance Settlement Period,
  - i) The debit or credit to the Balancing Service Provider for Imbalances of the Balancing Service Entity per Imbalances Settlement Period,
  - j) Any non-compliance Charge imposed on the Balancing Service Provider per sanction type and Imbalance Settlement Period.
2. The Settlement results notified to the Balance Responsible Parties shall include the following details:
  - a) The ID of the Balance Responsible Party,
  - b) The Market Schedule of each Balance Responsible Entity represented by the Participant per Imbalance Settlement Period,
  - c) The total measured quantities of energy for all Balance Responsible Entities represented by the Balance Responsible Party per Imbalance Settlement Period,
  - d) The Imbalance quantity of all Balance Responsible Entities represented by the Balance Responsible Party per Imbalance Settlement Period, and
  - e) The debit or credit to the Balance Responsible Party for each Imbalance Settlement Period.

**Article 109. Pricing of Non-Compliance Charges**

1. The HETS Operator shall issue the supporting documents needed for each month M on the basis of the Settlement of Non-Compliance Charges on the last Friday of month M+2.
2. The amounts resulting from the Settlement of Non-Compliance Charges shall be settled by the Clearing House, in accordance with the provisions of the Clearing Rulebook for

Balancing Market Positions.

3. In the event that a Participant defaults on its cash obligations for Non-Compliance Charges, the HETS Operator shall take any action needed to collect the due payment with interest.
4. Unless it is part of its responsibilities under this Article, the HETS Operator shall not be laible to the Participants, the Clearing Members or the Clearing House for covering any deficit in the Non-Compliance Charges Account that is created due to a defaulting Participant.

## CHAPTER 23

### DEFAULT MANAGEMENT

#### **Article 110. Actions of the HETS Operator and the Clearing House in case of default**

1. In the event of default of Clearing Members on their cash obligations pursuant to this Rulebook, the provisions of this Chapter and the Clearing Rulebook for Balancing Market Positions shall apply.
2. If a Clearing Member defaults on the performance of its cash obligations pursuant to this Rulebook:
  - a) The Clearing House shall be obliged to immediately notify the HETS Operator.
  - b) If the losses caused by the default are in excess of the collaterals provided for the relevant Clearing Account, of the share of the defaulting Clearing Member in the Clearing Capital and even of those of the other Clearing Members according to the Clearing Rulebook for Balancing Market Positions, the Clearing House shall notify the HETS Operator of the remaining portion of the loss and shall cover the said amount by using the balance in the Prefunded Financial Resources account, as specified in the Clearing Rulebook for Balancing Market Positions.
  - c) If the balance of the Prefunded Financial Resources is insufficient to cover the loss, the Clearing House shall immediately notify the HETS Operator. The remaining portion of the loss shall be allocated to the Balance Responsible Parties,  $p$ , and shall be apportioned to them according to the metered offtake of their customers from the Interconnected System for Settlement Weeks W-11 to W-8 starting from the Settlement Week when the default was ascertained by the Clearing House.

$$CHARGE\_DEFAULT_{p,WS} = DEFAULT_W \times \frac{MQ_{p,WS}}{\sum_p MQ_{p,WS}}$$

where:

$WS$  The period between W-11 and W-8 starting from the Settlement Week when the default was ascertained by the Clearing House

$DEFAULT_W$  The remaining portion of loss for Settlement Week W when the default was ascertained by the Clearing House.

$MQ_{p,ws}$  the offtake (calculated at the Transmission System - Distribution Network Limit) in MWh that corresponds to the consumers of the Interconnected System per Balance Responsible Party  $p$  for a period WS

No corrections shall be made to the cash amounts allocated and apportioned to the Balancing Responsible Parties by reason of any revised data regarding the metered offtake  $MQ_{p,ws}$  of their customers which were calculated in the Final Settlements performed after the default, unless it is a correction of the remaining portion of loss made by the Clearing House.

- d) The HETS Operator shall notify the Clearing House of the amount apportioned to each Balancing Responsible Party, so that the Clearing House can proceed with the Cash Settlement according to the provisions of the Clearing Rulebook for Balancing Market Positions.
- e) If the cash cleared by the Clearing House in accordance with item (c) of this paragraph is insufficient due to non-payment by the Balance Responsible Parties so obliged on the basis of the above-mentioned apportionment, the respective amounts shall be re-apportioned as many times as necessary until the loss is fully covered by the Balance Responsible Parties which are up-to-date with their obligations, the procedure under item (c) being followed in all other cases. The Clearing House shall notify the HETS Operator of the relevant default and the defaulting Balancing Responsible Parties, in each apportionment cycle process, so that the HETS Operator can activate the subsequent cycle of the apportionment process as set out in paragraph 2 of this article.
- f) The collection of the relevant cash obligations of the defaulting Clearing Member shall be carried out on the basis of the Vouchers/Invoices issued by the Clearing House, which serve as proof in favour of beneficiary Clearing Members and Participants and against the defaulting Clearing Member or Participant. The above Vouchers/Invoices, including the initial Invoice shall not serve as proof, neither in favour nor against the Clearing House or the HETS Operator. Details regarding the above Vouchers/Invoices are provided in the Clearing Rulebook for Balancing Market Positions.
- g) The Balancing Responsible Parties that have paid the cash amounts apportioned to them in accordance with the procedures specified in items (e) and (f), paragraph 1, section 4.6 of the Clearing Rulebook for Balancing Market Positions may, by virtue of the Apportionment Procedure Non-Collection Voucher of item c), paragraph 2, section 4.6 of the Clearing Rulebook for Balancing Market Positions demand a return of the cash amounts paid in proportion to their percentage of participation in the relevant apportionment by instructing the HETS Operator to exercise their respective rights as their representative. Court costs of all kinds as well as other related expenses and expenses for the assignment of a third-party legal advisor shall be charged to the beneficiary Balancing Responsible Parties in proportion to their percentage of participation in the relevant apportionment cycle process and covered by them according to their relevant apportionment by the HETS Operator during the cash settlement procedure of the Clearing House. The HETS Operator shall assume no risk whatsoever with respect to either the assignment in accordance with the above or the positive outcome of the above demands.
- h) The HETS Operator shall terminate the Balancing Service Contract and/or the Balance Responsible Party Contract of the Participants who are in default on their

- cash obligations in the framework of the Balancing Market.
3. In particular, as regards covering a Clearing Member defaulting on amounts owed for Supplementary Settlements from a previous period prior to the default of the Clearing Member, but calculated after the default:
    - a) If the balance of collateral or the share account balance of the defaulting Clearing Member that may have been withheld by the Clearing House in accordance with the provisions of the Clearing Rulebook for Balancing Market Positions is not sufficient to cover Supplementary Settlement that may arise in respect of the Positions of the above defaulting party or if no such balance exists, the Clearing House shall notify the HETS Operator of the remaining portion of loss and shall cover it from the balance of the Pre-Funded Financial Resources as specified in the Clearing Rulebook for Balancing Market Positions.
    - b) If the balance of the Prefunded Financial Resources is insufficient to cover the above loss, the Clearing House shall immediately notify the HETS Operator. In that case, the apportionment and reapportionment processes of items (c), (d) and (e), paragraph 2 of this Article shall be activated, until the loss is fully covered.
  4. The HETS Operator shall not be exposed to any credit risk for the cash transactions pertaining to this Rulebook and the HETS Grid Code, and shall not be liable to the Participants, the Clearing Members or the Clearing House for covering any remaining loss that is created against the Participants due to default of another Participant registered in the HETS Operator Registry or another Clearing Member, over and above the performance of its duties, in accordance to this Chapter and the Clearing Rulebook for Balancing Market Positions. This also applies to the Clearing House.
  5. The funds from the Non-Compliance Charges Account, including the Pre-Funded Financial Resources, that were used by the HETS Operator or the Clearing House to cover defaults shall only be restored if the amount due and covered by the Account is collected from the debtor in default. The HETS Operator and the Clearing House shall immediately notify RAE of the instances of default, but also of the measures taken and the timetable for the enforcement of such measures in order to ensure the uninterrupted operation of the Balancing Market.

## CHAPTER 24

### SPECIAL PROVISIONS FOR THE BALANCING MARKET SETTLEMENT IF NO CLEARING HOUSE OPERATES

#### Article 111. Application of Special Provisions

In the event that no Clearing House operates, for any reason, in the Balancing Market, according to Article 12 of Law 4425/2016 the special provisions in accordance with CHAPTER 24 shall apply.

#### Article 112. HETS Operator Accounts

The HETS Operator shall keep accounts for accounting purposes in accordance with Article 75 of this Rulebook.

### Article 113. Invoicing and Settlement

The HETS Operator and the Participants shall issue the necessary documents on the basis of the Settlement Results for each month M until the 7th business day of month M+2. For each month M, the payments to the HETS Operator shall be made by the 9th business day of month M+2 and the payments to the Participants by the 10th business day of month M+2.

### Article 114. Actions of the Operator in case of Participant default

1. If a Participant defaults on its cash obligations deriving from this Rulebook, the HETS Operator shall take the following action:
  - a) Take all necessary steps to satisfy the amounts due by the Participant through the guarantees it has provided in accordance with Article 115 of this Rulebook. If the guarantees are insufficient to fully cover the amounts due by the defaulting Participant, the HETS Operator shall cover them by using the guarantees on a pro rata basis.
  - b) If the guarantees are insufficient to fully cover the amounts due by the defaulting Participant, the HETS Operator shall cover the deficit by using the Non-Compliance Charges Account, up to a percentage ( $\alpha\%$ ) of the balance on the Non-Compliance Charges Account, in accordance with Article 106 of this Rulebook.
  - c) If the guarantees and the Non-compliance Charges Account balance are not sufficient to fully cover the amounts due by the defaulting Participant in accordance with items (a) and (b) of this paragraph, the HETS Operator shall allocate the remaining portion of the loss to the Balance Responsible Parties,  $p$ , in proportion to the metered offtake of their customers from the Interconnected System for the Settlement Months M-3 to M-2 of the Settlement Month when the default was ascertained by the HETS Operator.

$$CHARGE\_DEFAULT_{p,MS} = DEFAULT_M \times \frac{MQ_{p,MS}}{\sum_p MQ_{p,MS}}$$

where:

$MS$  The period between M-3 and M-2 starting from the Settlement Month when the default was ascertained by the Clearing House

$DEFAULT_M$  the remaining portion of loss for Settlement Month M when the default was ascertained

$MQ_{p,MS}$  the offtake (calculated at the Transmission System - Distribution Network Limit) in MWh that corresponds to the consumers of the Interconnected System per Balance Responsible Party  $p$  for a period MS

No corrections shall be made to the cash amounts allocated and apportioned to the Balancing Responsible Parties by reason of any revised data regarding the metered offtake  $MQ_{p,MS}$  of their customers which were calculated in the Final Settlements performed after the default, unless it is a correction of the remaining portion of loss made by the HETS Operator.

- d) If the cash cleared in accordance with item (c) of this paragraph is insufficient due to non-payment by the Balance Responsible Parties so obliged on the basis of the above-mentioned apportionment, the respective amounts shall be re-apportioned as many



- times as necessary until the loss is fully covered by the Balance Responsible Parties which are up-to-date with their obligations, the procedure under item (c).
- e) The collection of the relevant cash obligations of the defaulting Participant or the defaulting Participants shall be carried out on the basis of the Vouchers/Invoices issued by the HETS Operator, which serve as proof in favour of beneficiary Participants and against the defaulting Participant. The above Vouchers/Invoices, including the initial Invoice shall not serve as proof, neither in favour nor against the HETS Operator.
  - f) The Balancing Responsible Parties that have paid the cash amounts apportioned to them in accordance with the procedures specified in items (c) and (d) of this paragraph may, by virtue of the Apportionment Procedure Non-Collection Voucher of item (e) of this paragraph, demand a return of the cash amounts paid in proportion to their percentage of participation in the relevant apportionment by instructing the HETS Operator to exercise their respective rights as their representative. Court costs of all kinds as well as other related expenses and expenses for the assignment of a third-party legal advisor shall be charged to the beneficiary Balancing Responsible Parties in proportion to their percentage of participation in the relevant apportionment cycle process and covered by them according to their relevant apportionment by the HETS Operator during the procedure for settlement of their claims and obligations in accordance with Article 114 of this Rulebook. The HETS Operator shall assume no risk whatsoever with respect to either the assignment in accordance with the above or the positive outcome of the above demands.
  - g) The HETS Operator shall terminate the Balancing Service Contract and/or the Balance Responsible Party Contract of the Participants who are in default on their financial obligations in the framework of the Balancing Market.
2. In particular, as regards covering a Participant defaulting on amounts owed for Supplementary Settlements from a previous period prior to the default of the Participant, but calculated after the default:
    - α) If the balance of the guarantees of Article 116 of this Rulebook that may have been withheld by the HETS Operator is not sufficient to cover the amounts due as a result of Supplementary Clearings or if no such balance exists, the HETS Operator shall cover it from the balance of the Non-Compliance Charges Account, as specified in item (b), paragraph 1 of this Article.
    - β) If the balance of the Non-Compliance Charges Account, as specified in item (a) of this paragraph is not sufficient to cover the above loss, the HETS Operator shall activate the apportionment and reapportionment processes of items (c) and (d) of par. 1 of this Article, until the loss is fully covered.
  3. The HETS Operator shall not be exposed to any credit risk for the cash transactions pertaining to this Rulebook, and shall not be liable to the Participants for covering any remaining loss that is created for the Participants due to default of another Participant, over and above the performance of its duties according to this Chapter.
  4. The funds from the Non-Compliance Charges Account that were used by the HETS Operator to cover defaults shall only be restored if the amount due and covered by the Account is collected from the debtor in default.
  5. The HETS Operator shall immediately notify RAE of the instances of default, but also of the measures taken and the timetable for the enforcement of such measures in order to

ensure the uninterrupted operation of the Balancing Market.

**Article 115. Provision of Guarantees**

1. Each Participant is required, during the term of the Balancing Service Contract and/or the Balance Responsible Party Contract, to offer full guarantees for compliance with all its obligations arising from its participation in the Balancing Market.
2. The obligation to provide full guarantee shall be fulfilled by submitting a letter of guarantee or by depositing an amount into a special account kept by the HETS Operator, or in any other lawful manner to which the HETS Operator has consented.
3. Especially for the Letters of Guarantee, the Participants shall fulfill the above obligations only if they fully comply with the template published by the Operator on its website.
4. The methodology for determining the amount of guarantees and details on guarantees are set forth in the “Balancing Market Participation Guarantees Calculation Methodology”.

## SECTION V

### TRANSITIONAL PROVISIONS

#### CHAPTER 25

#### TRANSITIONAL PROVISIONS ON NON-COMPLIANCE CHARGES

##### Article 116. Entry into Force of Non-Compliance Charges

1. The numerical values of the parameters of Non-Compliance Charges as specified in Article 96 to Article 105 of this Rulebook shall be specified to enter into force for the first time by Decision of RAE upon recommendation of the HETS Operator, which shall be submitted to RAE by 15th July 2020.
2. The Non-Compliance Charges set out in Articles 96, 97, 98, 99, 100, 101 and 104, without prejudice to the provisions of Article 117, shall apply as from the date of the effective start of the operation of the Balancing Market. For the first month of operation of this Market, the imposed Charges shall be reduced by 50%.
3. The Non-Compliance Charges set out in Articles 102, 103 and 105, without prejudice to the provisions of Article 117, shall apply after the first quarter of operation of the Balancing Market. The Charges for the first quarter of operation of the Balancing Market shall only be calculated for the information of the Participants and shall not be allocated to them.
4. Within 2 months from the commencement of the operation of the Balancing Market, the HETS Operator shall submit a recommendation for the numerical values of the Non-Compliance Charges parameters as defined in Articles 96 to 105 of this Rulebook, which shall apply after the end of the first quarter of operation of the Balancing Market. The relevant approval Decision of RAE shall be issued within the same quarter.

#### CHAPTER 26

#### TRANSITIONAL PROVISIONS FOR RES

##### Article 117. Commencement of balancing obligations for RES Units with Market Participation Obligation under a Contract for Differential State Aid Support

1. The RES Units with Market Participation Obligation under a Contract for Differential State Aid Support (DSAS Contract), as set forth in Law 4414/2016, shall start having balancing obligations after the end of the transitional period. The transitional period shall end upon commencement of the Continuous Intra-Day Trading in coupling operation, as defined in accordance with the provisions of the Day-Ahead & Intra-Day Markets Trading Rulebook.

2. Until the end of the transitional period:
  - a) The Reversal of the Difference in Income shall be calculated as per Article 119 and Article 120 of this Rulebook.
  - b) For RES Units with Market Participation Obligation under a DSAS Contract, the Article 103 of this Rulebook shall not apply.

### **Article 118. Explanation of symbols**

For the purposes of calculation of Production Imbalances for RES Units with Market Participation Obligation under a DSAS Contract, each Non-Dispatchable RES Units Portfolio shall be generally symbolized as  $e_{rep,oper,z}$ , where:

- rep* the RES Unit Portfolio representative. Non-Dispatchable RES Unit Portfolios shall be represented by a RES Producer, a RES Aggregator or by the Last Resort RES Aggregator.
- oper* the operational status, which is assigned a value depending on the case, either *norm\_DSAS* (normal operation with Differential State Aid Support) which corresponds to normal operation under a DSAS Contract, or *com\_DSAS* (commissioning operation with Differential State Aid Support) which corresponds to Commissioning operation under a DSAS.
- z* the HETS Bidding Zones.

### **Article 119. Calculation of Production Imbalances for RES Units with Market Participation Obligation under a DSAS Contract**

1. The Final Imbalance of a Non-Dispatchable RES Unit Portfolio under a DSAS Contract,  $e$ , for an Imbalance Settlement Period shall be equal to the difference between the quantity of energy that results on the basis of the Entity's certified measurement data and the Entity's Market Schedule as given below:

$$FIMB_{e_{rep,oper,z},t} = MQ_{e_{rep,oper,z},t} - MS_{e_{rep,oper,z},t}$$

Where:

- $FIMB_{e_{rep,oper,z},t}$  The quantity of the Final Imbalance in MWh for a Non-Dispatchable RES Unit Portfolio under a Contract for Differential State Aid Support  $e_{rep,oper,z}$  and the Imbalance Settlement Period  $t$ .
- $MQ_{e_{rep,oper,z},t}$  The energy quantity at the Connection Point with the HETS or the Distribution Network, in MWh, resulting from the certified measurement data of the Non-Dispatchable RES Unit Portfolio under a DSAS Contract for the Imbalance Settlement Period  $t$   $e_{rep,oper,z}$ .
- $MS_{e_{rep,oper,z},t}$  the Market Schedule of the Non-Dispatchable RES Unit Portfolio under a DSAS Contract for the Imbalance Settlement Period  $t$   $e_{rep,oper,z}$ .

**Article 120. Calculation of Debits and Credits for RES Units with Market Participation Obligation under a DSAS Contract**

1. For each Imbalance Settlement Period  $t$  the HETS Operator shall calculate the debits / credits  $IMBC\_A_{e_{rep,oper,z,t}}$  in € and the debits / credits  $IMBC\_B_{e_{rep,oper,z,t}}$  in € for each Non-Dispatchable RES Unit Portfolio under a DSAS Contract  $e$ , as follows:

$$IMBC\_A_{e_{rep,oper,z,t}} = FIMB_{e_{rep,oper,z,t}} \times DAMP_{z,t}$$

and

$$IMBC\_B_{e_{rep,oper,z,t}} = FIMB_{e_{rep,oper,z,t}} \times (IP_t - DAMP_{z,t})$$

Where:

$FIMB_{e_{rep,oper,z,t}}$  the quantity of the Final Imbalance, in Mwh, for the Non-Dispatchable RES Unit Portfolio  $e_{rep,oper,z}$  and the Imbalance Settlement Period  $t$ .

$DAMP_{z,t}$  The price of the Day-Ahead Market in MWh for each Bidding Zone  $z$  for the relevant Market Time Unit.

2. The above debits / credits shall be collected or allocated by the Clearing House as follows:
- a) For a Non-Dispatchable RES Units Portfolio  $e_{rep,oper,z}$  which is represented by a RES Producer or RES Aggregator in operational status *norm\_DSAS* or *com\_DSAS* and belongs to the Bidding Zone  $z$ ,
    - i. when the amount  $IMBC\_A_{e_{rep,oper,z,t}}$  is found to be negative, the RES Producer or RES Aggregator must pay the calculated amount, whereas when the amount  $IMBC\_A_{e_{rep,oper,z,t}}$  is found to be positive, the RES Producer or RES Aggregator is entitled to collect the calculated amount,
    - ii. when the amount  $IMBC\_B_{e,t}$  is found to be negative, the calculated amount is charged to DAPEEP, whereas when the amount  $IMBC\_B_{e,t}$  is found to be positive, the calculated amount is credited to the Market Subaccount of the Special Account of Article 143 of Law 4001/2011 maintained by DAPEEP.
  - b) For a Non-Dispatchable RES Units Portfolio  $e_{rep,oper,z}$  which is represented by the Last Resort RES Aggregator in operational status *norm\_DSAS* or *com\_DSAS* and belongs to the Bidding Zone  $z$ ,
    - i. when the amounts  $IMBC\_A_{e_{rep,oper,z,t}}$  and  $IMBC\_B_{e_{rep,oper,z,t}}$  are found to be negative, they are charged to the Last Resort RES Aggregator,
    - ii. when the amounts  $IMBC\_A_{e_{rep,oper,z,t}}$  and  $IMBC\_B_{e_{rep,oper,z,t}}$  are found to be positive, they are credited to the Last Resort RES Aggregator,
3. Details regarding the Settlement of Imbalances of RES and HPCHP Portfolios are provided in the Technical Decision "Balancing Market Settlement".

## CHAPTER 27

### TRANSITIONAL PROVISIONS FOR THE HETS OPERATOR REGISTRY

#### **Article 121. Registration in the HETS Operator Registry following the launch of the Balancing Market**

1. The already registered Participants in the Participants Registry provided for in Decisions 56/2012 and 57/2012 of RAE (Government Gazette 104/B’/31.01.2012 and Government Gazette 103/B’/31.01.2012), are considered to:
  - a) be temporarily registered in the Balancing Service Providers Registry or/and the Balance Responsible Parties Registry,
  - b) unreservedly accept the provisions of this Rulebook and the HETS Grid Code and the Methodologies, parameters and other special approvals, Technical Decisions and Manuals issued in accordance therewith, as amended each time and in force, and they are bound to comply with their content,
  - c) conclude ipso jure a Balancing Service Contract or a Balance Responsible Party Contract, depending on their capacity,
  - d) conclude ipso jure a HETS Operator Transaction Contract, in accordance with the provisions of the HETS Grid Code.
2. The Participants temporarily registered in the HETS Operator Registry in accordance with paragraph 1 of this Article, shall be ipso jure deleted from the HETS Operator Registry, if, by 15th September 2020, (a) no certificate from the Clearing House has been transmitted to the HETS Operator by the Clearing House to attest that a Clearing Account has been created for the Participant as a Direct Clearing Member or a Clearing Account for the Participant as a General Clearing Member and (b) no guarantees have been submitted in accordance with the HETS Grid Code. Upon deletion, it shall be deemed that no Balancing Service Contract or Balance Responsible Party Contract with the HETS Operator exists with all the consequences deriving from the lack thereof.
3. The Dispatchable Generating Units registered in the Units Registry of Decision No. 57/2012 of RAE shall be automatically registered in the Balancing Market Generating Units Registry. For these units no pre-qualification tests shall be carried out for their already Registered Technical Characteristics. The technical characteristics that have not been tested shall be first declared by the Balancing Service Provider, no later than 1st August 2020, while the relevant tests must be carried out within a period of one (1) year from the entry into force of this Rulebook.
4. Until 30th November 2020, the participants temporarily registered in the HETS Operator Registry are obliged to submit an application for registration in the HETS Operator Registry, as set forth in Technical Decision “Procedures for Registration in the HETS Operator Registry”. The HETS Operator shall proceed to permanently register in the HETS Operator Registry the temporarily registered participants that will have submitted a complete application for registration by 31st January 2021 and shall issue a certificate of registration. If no application for registration has been submitted within the above deadline, the temporarily registered participant shall be deleted ipso jure from the HETS Operator Registry and the Balancing Service Contract or/and a Balance



Responsible Party Contract and the HETS Operator Transactions Contract shall be terminated as from the day following the expiration of the deadline, with all the consequences deriving from such termination.

## **CHAPTER 28**

### **ENTRY INTO FORCE OF THE BALANCING MARKET RULEBOOK**

#### **Article 122. Entry into force of the Balancing Market Rulebook**

1. Without prejudice to the provisions of paragraph 2 of this Article, this Rulebook shall enter into force upon the launch of the Day-Ahead, Intra-Day and Balancing Markets of Law 4425/2016.
2. The provisions set out in CHAPTER 2 and in CHAPTER 3, as well as in Article 122 of this Rulebook shall enter into force upon publication of RAE decision in the Government Gazette, whereby this Rulebook shall be approved.

**ANNEX I****LIST OF TECHNICAL DECISIONS**

<b>No.</b>	<b>Name of Technical Decision</b>	<b>Content of Decision</b>
1	Procedures for registration in the HETS Operator Registry	Detailed description of the application, submission, and registration procedures for the HETS Operator Registry
2	Dispatch Instructions	Procedure for issuing and sending Dispatch Instructions
3	Manual FRR	Details on the implementation of the manual FRR
4	Automatic FRR	Details on the implementation of the automatic FRR
5	Balancing Market Settlement	Details and examples of calculations for the settlement of the Balancing Energy Market.
6	Integrated Scheduling Process	Details on the Integrated Scheduling Process
7	Technical limits on bidding and clearing prices in the Balancing Market	Determination of Maximum and Minimum Price Limits in the Balancing Energy and Balancing Capacity Offers and in the clearing prices

## ANNEX II

### LIST OF METHODOLOGIES AND SPECIAL APPROVALS

No.	Name of Methodology & Special Approval	Content of Methodology & Special Approval
1	Methodology of Determination of Zonal / Systemic Balancing Capacity Needs	Methodology for the Determination of the zonal and systemic Balancing Capacity needs for (a) Frequency Containment Reserve, (b) automatic Frequency Restoration Reserve and (c) manual Frequency Restoration Reserve.
2	Dispatchable Load Portfolio Baseline Methodology	Baseline calculation Methodology used for the settlement of Dispatchable Load Portfolio Reference Load
3	Offsetting methodology	Offsetting methodology for the allocation of cost due to defaulting participants, if a Clearing House does not operate in the market
4	Balancing Market Participation Guarantee Calculation Methodology	Calculation Methodology for guarantees in the event that a Clearing House does not operate in the market.
5	Activated Balancing Energy Calculation Methodology	Calculation Methodology for Activated Balancing Energy, Adjusted Dispatch Instruction and Adjusted Market Schedule
6	Variable Cost Parameters for Thermal Production Units Calculation Methodology	Calculation Methodology for Variable Cost Parameters for Thermal Production Units on the basis of Techno-Economic data
7	HETS Losses Calculation Methodology	Methodology on the basis of which the HETS Losses are estimated
8	Terms and Conditions of Balancing Service Providers	Terms and Conditions according to Article 18 of Commission Regulation (EU) 2017/2195. Detailed description of Balancing Service Provider pre-selection procedures
9	Terms and Conditions of Balance Responsible Parties	Terms and Conditions in accordance with Article 18 of Commission Regulation (EU) 2017/2195.
10	Rules for suspension and restoration of market activities	Rules for the suspension and restoration of market activities in accordance with Article 36 of Commission Regulation (EU) 2017/2196
11	Settlement rules in the event of market activity suspension	Settlement rules in the event of suspension of market activities in accordance with Article 39 of Commission Regulation (EU) 2017/2196

## ANNEX III

### LIST OF ACRONYMS

RES	Renewable Energy Sources
AGC	Automatic Generation Control
DAPEEP	RES and Guarantee of Origin Operator
HEDNO	Hellenic Electricity Distribution Network Operator
ISP	Integrated Scheduling Process
DESFA	National Natural Gas System Operator
FRR	Frequency Restoration Reserve
FCR	Frequency Containment Reserve
EIC	Energy Identification Code
HETSO	Hellenic Electricity Transmission System Operator
ESFA	National Natural Gas System
RAE	Regulatory Authority for Energy
HPCHP	High Performance Combined Heat and Power Generation
Aggregator	Aggregator
Last Resort Aggregator	Last Resort Aggregator
CET	Central European Time
EET	Eastern European Time
SCADA	Supervisory Control and Data Acquisition System