BALANCING MARKET RULEBOOK

Version 1.0

CONTENTS

SECTION I

GENERAL PROVISIONS

CHAPTER 1

OBJECTIVE OF THE BALANCING MARKET REGULATION

Article 1. Balancing market

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 applicable each time.

Article 2. Balancing Market Regulation

1. The Balancing Market Regulation is adopted in accordance with the provisions of Articles 17 and 18 of Law 4425/2016.
2. The Balancing Market Regulation aims to define the terms and conditions for the operation of the Balancing Market and in particular to:
    1) designate the Participants in the Balancing Market, and describe the corresponding registration process,
    2) set out detailed rules and conditions under which Participants may participate in the Balancing Market, including their rights and obligations, as well as to determine the dispute settlement procedures between the Participants and the Operator of the Hellenic Electricity Transmission System (HETS),
    3) define the rights and obligations of the HETS Operator towards the Participants regarding their participation in the Balancing Market,
    4) describe the interface between the Balancing Market, the Day Ahead Market and the Intraday Market, including the exchange of information between the Power Exchange and the HETS Operator,
    5) define in detail the validation rules for Balancing Energy Offers and Balancing Power Offers by the HETS Operator,
    6) describe the input data, the operation and the results of the Integrated Scheduling Process,
    7) describe the interface between the Integrated Scheduling Process and the Energy Balancing Market,
    8) describe the input data, the operation and the results of the Energy Balancing Market,
    9) define the Accounting Accounts kept by the HETS Operator for the purposes of the Balancing Market Settlement,
    10) define the Balancing Market Settlement procedures,
    11) determine the penalties for the Participants in the event of non-compliance with the provisions of this Regulation,
    12) define the procedure for the Settlement of the Balancing Market, the Imbalances and the Non-Compliance Charges,
    13) define the procedure for exchanging information with the other stakeholders,

14) specify the reporting and monitoring obligations of the HETS Operator in relation to the Balancing Market, and

15) define the procedures for the protection of commercially sensitive information.

3. Unless otherwise specified, the capitalized terms used in this Regulation shall have the meanings specified in Article 3 of this Regulation.

4. This Regulation shall be amended upon recommendation by the HETS Operator, which shall be approved by RAE following 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 be initiated at the initiative of RAE. The new text of the Regulation, 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 aforementioned 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 Regulation shall automatically govern the Balancing Service Contract applicable between the HETS Operator and the Registered Balancing Service Provider, and the Contract of a Contracting Party with Balancing Responsibility concluded between the HETS Operator and the Registered Contracting Party with Balancing Responsibility, without the need for the Registered Balancing Service Provider / the Registered Contracting Party with Balancing Responsibility to take any action but without prejudice to the right of the Registered Balancing Service Provider or the Registered Contracting Party to request the termination of the Balancing Service Contract or the Contract of a Contracting Party with Balancing Responsibility, in accordance with Article 24 of this Regulation.

6. The Balancing Market Regulation 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 is published in the Government Gazette in accordance with Article 18(4) of Law 4425/2016.

7. In view of the effective implementation of the provisions of the Balancing Market Regulation, the HETS Operator may issue Technical Decisions, which regulate details in technical issues with non-regulatory content. The Technical Decisions shall be issued following a public consultation and shall be posted on the website of the HETS Operator. The HETS Operator shall send to RAE the drafts of the Technical Decisions to be submitted to public consultation and the Approved Technical Decisions. In the event of any contradiction between the provisions of this Regulation and the corresponding Technical Decisions, the provisions of this Regulation 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. Before the operation 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 Regulation, which shall be approved in accordance with Article 18 par. of Law 4425/2016.

Article 3. Definitions

In addition to the definitions provided for in the current legislation, and specifically in Law 4425/2016 and Law 4001/2011 as well as in Union legislation, for the purposes of implementing this Regulation, the below terms shall have the following meaning, as they may be referred to in singular or plural number.

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 used by the HETS Operator to maintain the System frequency within a predetermined range, as well as the electricity generation and demand balance, 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 Power and Balancing Energy Markets and the Imbalances 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. Reserve 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. Marketing Authorization: The authorization granted to carry out electricity trading activities.
7. Production License: The license granted to carry out the electricity generation activity.
8. Supply License: The license granted to carry out the electricity supply activity.
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. Demand Response Aggregator License: The license granted to carry out the activity of representing electricity consumers in accordance with Article 13 of Law 4001/2011.
11. Upward Balancing Energy: The Balancing Energy that corresponds to more generated energy or less consumed energy in relation to the Market Schedule.
12. Imbalance: It shall have the meaning of Article 2(8) of Regulation (EU) 2017/2195, i.e. the amount of energy which is calculated for a Balance Responsible Party and represents the difference between the dispatched amount attributed to the specific Balance Responsible Party and the final position (Market Schedule) of the said party, including any adjustments to the imbalances applied to the Balance Responsible Party, within a given Imbalances Settlement Period.
13. 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.
14. Automatic Generation Control (AGC): The automatic load-frequency control procedure, which aims to reduce the frequency restoration control error at zero in accordance with the provisions of Regulation (EU) 2017/1485 .
15. Event of Force Majeure: It shall have the meaning referred to in Article 25 the Balancing Market Regulation
16. Declared Unit Characteristics: The characteristics specified as a combination of the following technical and functional elements of the Balancing Services Entity that constitute the actual technical capabilities of the Balancing Services Entity for a specific Dispatch Period and Day:

A) Registered Operating Characteristics,

B) Techno-Economic Declaration,

Γ) Declaration of Maximum Continuous Generating Capability

Δ) Non-availability declaration (total or partial), as applicable

E) Declaration of Major Breakdown.

17. Declarations of Maximum Continuous Generating Capability The declarations submitted by the Balancing Service Providers pursuant to Article 43 of this Regulation for each Dispatch Period.

18. Declaration of Major Breakdown: The declarations submitted by the Balancing Service Providers pursuant to Article 45 of this Regulation.

19. Non-availability declarations: The declarations submitted by Balancing Service Providers pursuant to Article 44 of this Regulation for each Dispatch Day during which the Available Capacity for a Balancing Service Entity is reduced.

20. Techno-Economic Declarations: The declarations submitted by Balancing Service Providers for each Dispatch Day pursuant to Article 49 of this Regulation regarding the techno-economic data of the Balancing Service Entities they represent.

21. Integrated Scheduling Process (ISP): It shall have the meaning of Article 2(19) of Regulation (EU) 2017/2195, i.e. the iterative process that uses at least integrated scheduling process offers 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.

22. Available Capacity: The capacity of the Balancing Service Entity resulting on the basis of the Techno-Economic Declaration and the Declaration of maximum continuous generation capability of the Generating Units decreased by any non-available capacity.

23. RES and Guarantee of Origin Operator (DAPEEP): The public limited company provided for in Article 118 of Law 4001/2011.

24. 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.

25. Hellenic Electricity Distribution Network Operator (HEDNO): The public limited company provided for in Article 123 of Law 4001/2011. 4001/2011.

26. HETS Operator: The public limited company provided for in Article 97 of Law 4001/2011. 4001/2011.

27. Administratively Defined Imbalance Price Cap The higher price that can be applied in the case that because of the simultaneous activation of upward and downward balancing energy in an Imbalance Settlement Period the Imbalance Price is much higher than the most expensive activated Balancing Energy Offer.

28. Administratively Defined Balancing Power Offer Cap: The higher price of Balancing Power Offer that is approved by RAE, in accordance with Article 53 of this Regulation.

29. Administratively Defined Balancing Energy Offer Lower Limit: The lower price of Balancing Energy Offer that is approved by RAE, in accordance with Article 57 of this Regulation.

30. Administratively Defined Balancing Energy Offer Cap: The higher price of Balancing Energy Offer that is approved by RAE, in accordance with Article 57 of this Regulation.

31. Imbalance Settlement: It shall have the meaning of Article 2(9) of Regulation (EU) 2017/2195, i.e. the financial settlement mechanism for charging or paying balance responsible parties for their imbalances.

32. Balancing Market Settlement: The transparent calculation of the quantities of energy and capacity and the Imbalances and the calculation of the monetary value of the Participants' charges and credits, as detailed in Article 78.

33. Load Representative: Balance Responsible Parties representing entities that absorb energy from the HETS or the electricity distribution network, besides Demand Response Aggregators.

34. Balancing energy: The energy provided by a Balancing Service Provider and used by the HETS Operator to make a balance. It is divided into Upward and Downward Balancing Energy.

35. Priority Price-Taking Sell/Buy Orders: The Priority Price-Taking Sell/Buy Orders are hourly hybrid one-step Step-wise Sell/Buy Orders that are submitted with a price equal to the highest/lowest acceptable price at the Day-Ahead Market and the Intra-Day Market, namely at the Administratively Defined Market Order Upper/Lower Price, which is applied to each of the aforementioned Markets.

36. 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, and manual activation (automatic and manual FRR).

37. Frequency Containment Reserve: It shall have the meaning of Article 3(7) of Regulation (EU) 2017/1485, that is, the active capacity reserve available to contain the System frequency after an imbalance occurs to the capacity balance.

38. Bidding Zone: Bidding zone is defined under Article 3(2) 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 Operation Code.

39. 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.

40. Dispatch Day: It has the meaning provided for in Article 35 of this Regulation, that is, the day to which the ISP refers, which coincides with the Delivery Day of the Day-Ahead Market and the Intraday Market. The Dispatch Day D begins on 01: 00 Eastern European Time of calendar day D and ends on 01: 00 Eastern European Time of calendar day D + 1.

41. Balancing Capacity: A volume of reserve capacity that a balancing service provider has agreed to hold and in respect to which the balancing service provider has agreed to submit offers for a corresponding volume of balancing energy to the Transmission System Operator (TSO) for the duration of the contract.

42. Downward Balancing Energy: The Balancing Energy that corresponds to less generated energy or more consumed energy in relation to the Market Schedule.

43. Consumer: It shall have the meaning of Article 2 (n) of Law 4001/2011, that is, the Customer of Electricity excluding the Natural Gas Systems and Distribution Networks Operators and the Electricity Transmission Systems or Distribution Networks Operators.

44. Dispatchable Units: The units registered in the Units Register, provided they are not 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 applicable, in accordance with Article 4 of the HETS Operation Code.

45. Dispatchable Units with Alternative Fuel: Dispatchable Units having the obligation or the ability to operate both with primary and alternative fuels.

46. Dispatchable CHP Units: Partial cogeneration units with an installed capacity over 35 MWe which, by decision of RAE, have been designated as Dispatchable CHP Units pursuant to Article 4 of HETS Operation Code.

47. Multi-shaft Combined Cycle Dispatchable Units: Combined Cycle Dispatchable Units in which gas turbines and steam turbines are located on different axes and are connected to distinct generators.

48. Emergency Situation: The Situation described in the HETS Operation Code.

49. HETS Operation Code: The Code specified in Article 96 of Law 4001/2011.

50. Maximum Continuous Generation Capability: It shall have the meaning provided for in Article 43 of this Regulation.

51. Transitory Mechanism for the Optimal Forecasting Accuracy: It shall have the meaning of Article 2(9) of Law 4414/2016, i.e. the mechanism for calculating charges, differentiated by technology and/or by category of stations, imposed on the owners of RES and CHP power plants which are obliged to participate directly in the electricity market.

52. Balancing Market Generating Registry Unit: The Registry provided for in Article 9 of this Regulation.

53. Balancing Service Providers Registry: The Registry provided for in Article 4 of this Regulation.

54. Balance Responsible Parties Registry: The Registry provided for in Article 5 of this Regulation.

55. Dispatchable RES Units Portfolio Registry: The Registry provided for in Article 10 of this Regulation.

56. Dispatchable Load Portfolio Registry: The Registry provided for in Article 11 of this Regulation.

57. 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) of Law 4414/2016.

58. RES Units without Market Participation Obligation: 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.

59. Balance Responsible Entities: Entities represented by Balance Responsible Parties in accordance with Article 8 of this Regulation.

60. Balancing Service Entities: Balancing Service 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 8 of this Regulation.

61. Producer: The holder of a Production License or a relevant exemption from the obligation of a Production License issuance.

62. Balancing Service Provider – BSP: It shall have the meaning of Article 23(8) of Regulation (EU) 2017/2195, .i.e. the Participant in the Market with Balancing Service Units or Portfolios that is able to provide Balancing Services to the HETS Operator.

63. Imbalance Settlement Period: The time unit for which the Imbalance of the Balance Responsible Parties is calculated.

64. Dispatch Period: It shall have the meaning provided for in Article 35 of this Regulation, that is, the period, which is set at half an hour. The first Dispatch Period of Dispatch Day D is 01: 00 – 01: 30 Eastern European Time.

65. Certified Energy Measurement Data: The Certified Measurement Data as described in the HETS Operation Code.

66. Market Schedule: The net energy schedule (net position) resulting from all transactions of the entity on the wholesale market (i.e. transactions in the Energy Financial Market, the Day-Ahead Market or the Intraday Market) as defined in the Power Exchange Regulation.

67. Balancing Energy Deficit Premium: The price determined by Decision of RAE that gives a premium on top of the manual FRR Upward Balancing Energy Price if during an Imbalance Settlement Period energy was injected from Contracted Units or Supplementary Energy from Emergency Imports or Load Cuts were performed.

68. Balancing Energy Offer: The Balancing Energy Offer corresponds to the intention to provide an upward or downward Balancing Energy in relation to the Market Schedule concerning the respective Balancing Services Entity. The Balancing Energy Offers are described in Article 56of this Regulation.

69. Balancing Capacity Offer: The Balancing Capacity Offer corresponds to the intention to provide reserves for Reserve Capacity products. The Balancing Capacity Offers are described in Article 52of this Regulation.

70. Balance Responsible Party – BRP: It shall have the meaning of Article 23(7) of Regulation (EU) 2017/2195, i.e. the Market Participant or its selected representative responsible for its Imbalances.

71. Balancing Service Contract: The contract concluded with the HETS Operator upon the registration of the Participants in the Balancing Service Providers Registry.

72. Balance Responsible Party Contract: The contract concluded with the HETS Operator upon the registration of the Participants in the Balance Responsible Parties Registry.

73. Contracted Units: The production units that have concluded Supplementary System Energy Contracts or Ancillary Services Contracts with the HETS Operator in accordance with the HETS Code.

74. Participant: The participant in the Balancing Market, either as a Balancing Service Provider or as a Balance Responsible Party.

75. Supplementary Energy from Emergency Imports: It shall have the meaning of the HETS Operation Code, i.e. the quantity of active capacity of imports, which is provided to the System under the responsibility of the System Operator, in order to meet the needs in Supplementary System Energy.

76. Balancing Market System: The 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, the Balancing Energy Market and the Settlement of the Balancing Market. The Balancing Market System is described in Article 15of this Regulation.

77. Emergency Plan: It shall have the meaning of the Plan drawn up in accordance with Article 73 of Law 4001/2011.

78. Technical Decisions: The technical decisions provided for in Article 18 of Law 4425/2016 and Annex I of this Regulation.

79. Manual FRR Upward Balancing Energy Price: The price calculated in accordance with Article 86 of this Regulation, which compensates the Balancing Service Providers that provide Manual FRR Upward Balancing Energy.

80. Imbalances Price, (IP_t): The price which is calculated in accordance with Article 88 of this Regulation by which the Contracting Parties are credited or debited with Balancing Responsibility for their respective imbalances.

81. Manual FRR Downward Balancing Energy Price: The price calculated in accordance with Article 86 of this Regulation, which compensates the Balancing Service Providers that provide Manual FRR Downward Balancing Energy.

82. Balancing Services: They are within the meaning of Article 2(3) of Regulation (EU) 2017/2195, i.e. Balancing Energy or Reserve Capacity, or both.

83. Clearing House: It shall have the meaning of Article 2(p) of Law 4425/2016, i.e., the intermediary public limited company between counterparties in Energy Market transactions, becoming the buyer to every seller and the seller to every buyer for the purposes of clearing the relevant transactions.

84. RES Aggregator: It shall have the meaning of Article 2(22) of Law 4414/2016, i.e. the natural or legal person who undertakes to represent the RES and CHP power plant owners in the electricity market.

85. Last Resort RES Aggregator: It shall have the meaning of Article 2(23) of Law 4414/2016, that is, the RES Aggregator that undertakes to represent a RES and CHP power plant owner in the electricity market in cases of temporary inability to be represented by an Aggregator.

86. Demand Response Aggregator: It shall have the meaning of Article 5(2)(o) of Law 4425/2016.

87. Dispatchable Load Portfolio: The load portfolio, that includes one or more loads connected to a particular Bidding Zone and which, based on their technical capacity, offer Balancing Services to the HETS Operator.

88. Non-Dispatchable Load Portfolio: The load portfolio, that includes one or more loads connected to a particular Bidding Zone and which do not offer Balancing Services to the HETS Operator.

89. 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 are connected to a specific Bidding Zone.

90. 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, based on their technical capacity, offer Balancing Services to the HETS Operator.

91. 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.

92. Non-Compliance Charges: The charges provided for in Chapter 21 of this Regulation.

93. 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. Balancing Service Contract

1. Natural or legal persons, in one or more of the following capacities, shall be entitled to register in the Balancing Service Provider Registry kept by the HETS Operator:
   1) Producer, holder of a Production License or a relevant Exemption,
   2) Renewable Energy Sources (RES) Producer, holder of a RES Production License or relevant Exemption, for RES units with Market Participation Obligation
   3) RES Aggregator, holder of RES Aggregator License, including RES Last Resort Aggregator, for RES units with Market Participation Obligation
   4) Demand Response Aggregator, holder of Demand Response Aggregator license, as well as
   5) Consumer, providing Demand Response services.
2. The interested parties shall apply for registration in accordance with the procedure set out in Article 6 hereof and the Technical Decision "Registration Procedures in Balancing Market Registries" and shall be obliged to comply with the terms and conditions as described in the "Terms and Conditions of Balancing Service Providers", which are approved by decision of RAE, upon the recommendation of the Operator, by means of Article 18(4) of Law 4425/2016.
3. Upon their registration in the Balancing Service Provider Registry, the above natural or legal persons (Balancing Service Providers) shall conclude a Balancing Service Agreement with the HETS Operator, the content of which shall be identical to this Regulation. The Balancing Service Contract shall be deemed to have been concluded between the parties upon the registration in the Balancing Service Provider Registry and shall be not subject to any other formality.

Article 5. Balance Responsible Party Contract

1. Natural or legal persons, in one or more of the following capacities, shall be registered in the Balance Responsible Party Registry kept by the HETS Operator:
   1) Producer, holder of a Production License or a relevant Exemption,
   2) Supplier, holder of a Supply License,
   3) Marketer, holder of Marketing License,
   4) RES Producer, holder of an RES Production License or a relevant Exemption, for RES units with Market Participation Obligation,
   5) RES Aggregator, holder of RES Aggregator License, for RES units with Market Participation Obligation,
   6) Demand Response Aggregator, holder of Demand Response Aggregator license,
   7) Consumer, as well as

8) DAPEEP, which is the Operator of the RES Units Portfolio without Market Participation Obligation.

The Balance Responsible Parties shall be designated as Load Representatives, representing Entities that absorb energy from the HETS or the Distribution Network, besides Demand Response Aggregators.

The term 'RES Aggregator' shall also include the Last Resort RES Aggregator, unless otherwise explicitly stated.

2. The interested parties shall apply for registration in accordance with the procedure set out in Article 6 hereof and the Technical Decision "Registration Procedures in Balancing Market Registries" and shall be required to comply with the terms and conditions provided for in the "Terms and Conditions of Balance Responsible Parties", which are approved by decision of RAE, upon the recommendation of the Operator, with article 18 (4) of Law 4425/2016.

3. Upon their registration in the Balance Responsible Parties Registry, the above natural or legal persons (Balance Responsible Parties) shall conclude a Balance Responsible Parties Contract with the HETS Operator, the content of which is identical to this Regulation. The Balance Responsible Party Contract shall be deemed to have been concluded between the Parties upon the registration in the Balance Responsible Parties Registry and shall not be subject to any other formality.

Article 6. Procedure of 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:

   1) Registration application.

   2) solemn declaration, declaring that:

      i. it expressly and unconditionally accepts this Regulation and the Technical Decisions referred to therein.

      ii. it is not subject to bankruptcy declaration proceedings or any other proceedings pursuant to the bankruptcy law or other legislation affecting its solvency and the rights of its creditors,

      iii. it is not subject to bankruptcy, compulsory administration proceedings or any other similar legal proceedings affecting the rights of its creditors,

   3) for the Consumers, additional solemn declaration that they accept the right of the HETS Operator to discontinue the supply of electricity to them if the Consumer is unable to meet the financial obligations arising from its participation in the Balancing Market,

   4) documents proving the legal representation of the applicant by the person signing the application and the above declarations,

   5) signed Contract with the Clearing House in accordance with the applicable law, if a corresponding body operates for the Balancing Market,

   6) guarantees in accordance with Article 111 in case no Clearing House operates, for any reason, for the Balancing Market.

2. Together with the Application, the Applicant pays the Application Fee, determined by decision of RAE, upon the recommendation of the HETS Operator.

3. The HETS Operator shall register the Applicant Participant in the Balancing Service Providers Registry or the Balance Responsible Parties Registry within fifteen (15) business days from the day of submission of the corresponding complete application. Upon registration, the HETS Operator shall issue a relevant certificate. The certificate shall be notified to RAE, the Distribution Network Operator, the Clearing House and the Power Exchange.
4. Upon registration in the Balancing Service Providers Registry, the HETS Operator shall create and maintain a record that includes the Entities for which the Balancing Service Provider is responsible.
5. Upon registration in the Balance Responsible Parties Registry, the HETS Operator shall create and maintain a record that includes the Entities for which the Balance Responsible Party is responsible.
6. Details regarding the registration in the Balancing Service Providers Registry and the Balance Responsible Parties Registry shall be specified in the Technical Decision "Procedures for Registration in the Balancing Market Registry".

Article 7. Rejection of application for registration in the Balancing Service Providers Registry and the Balance Responsible Parties Registry

1. The HETS Operator may reject the application for registration in the Balancing Service Providers Registry and the Balance Responsible Parties Registry, when:
    1) the Applicant has not submitted a complete application or has not paid the Application Fee in accordance with Article 4, Article 5, and Article 6,
    2) the Applicant, in the past, has been in breach of its obligations under an earlier Balancing Service Contract or a Balance Responsible Party Contract, resulting in the termination of the Contract, unless the circumstances giving rise to the termination have ceased to exist,
    3) the conclusion of a Balancing Service Contract or a Balance Responsible Party Contract with the Applicant Participant is a reason of breach by the HETS Operator of any term of any mandatory legal or regulatory obligation,
    4) the Applicant owes arrears from the Balancing Market to the HETS Operator.
    5) the relevant requirements as set out in this Regulation, 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 8. Entities

1. The entities participating in the Balancing Market shall be categorised into Balancing Services 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 Reserve Capacity and shall include the following categories:

   1) Generating Unit: Conventional Dispatchable Generating Unit with an installed capacity above 5 MW, which offers Balancing Services to the HETS Operator. This category shall also include Dispatchable CHP Units above 35 MWe. A Generating Unit shall be represented by one Producer.

   2) Dispatchable RES Units Portfolio: RES Units portfolio, that includes one or more RES Units with Market Participation Obligation connected to a particular 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 a RES Aggregator.

   3) Dispatchable Load Portfolio: Load portfolio, that includes one or more loads connected to a particular 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. Dispatchable Load Portfolio that includes only one load can be represented by one Consumer.

3. The Contracted Units shall also be included in the Entities, but they are referred to in paragraph 2 of this Article as they shall not participate in the Balancing Market processes.. The Contracted Units shall provide additional services in any situation that may lead to not covering the load network and/or the reserve requirements during the Integrated Scheduling Process (ISP) upon conclusion of a relevant contract.

4. Entities with Balance Responsibility shall be the entities that assume responsibility for the imbalances they cause and include the Balancing Services Entities referred to in paragraph 2 of this Article as well as the following:

   1) Non-Dispatchable RES Units Portfolio: 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. Every Non-Dispatchable RES Units Portfolio shall be represented by one RES Producer or a RES Aggregator.

   2) Non-Dispatchable Load Portfolio: Load portfolio, that includes one or more loads connected to a particular Bidding Zone and which do not offer Balancing Services to the HETS Operator. Every Non-Dispatchable Load Portfolio shall be represented by one Supplier or one Consumer.

   3) RES Units Portfolio without Market Participation Obligation: RES Units Portfolio without Market Participation Obligation connected to a specific Bidding Zone. RES Units Portfolios without Market Participation Obligation shall be represented by DAPEEP. DAPEEP has balance responsibility for the RES Units Portfolios without Market Participation Obligation.

   4) Import Portfolios and Export Portfolios.

Article 9. Balancing Market Generating Units Registry

1. The HETS Operator shall keep a Balancing Market Production Units Register. In order to register a Production Unit in the Balancing Market Production Units Register, at least the following conditions must be met:

   1) the Production Unit must be registered in the System Operator Units Register, as provided for in the HETS Operation Code,

   2) the Production Unit must have successfully completed the relevant pre-selection tests described in the "Balancing Service Provider Terms and Conditions".

2. Balancing Market Generating Units Registry includes the following information for each Generating Unit.
    1) the Energy Identification Code (EIC) of the Generating Unit,
    2) the geographical location of the Generating Unit,
    3) the contact details of the Generating Unit operator,
    4) the Registered Operating Characteristics of the Generating Unit in accordance with the provisions of the HETS Operation Code,
    5) In addition, the following technical characteristics are declared:
        i. maximum contribution in downward Frequency Containment Reserve (FCR),
        ii. maximum technical capability to provide upward and downward manual Frequency Restoration Reserve (FRR), and
        iii. Minimum load for the provision of manual FRR
        iv. the production level from the synchronization state to the minimum production state (soak trajectory) of each Generating Unit, i.e. the exact production level for up to twelve (12) half-hour-steps,
    6) the identifier of the Meter(s) which record(s) the output of the Generating Unit,
    7) the node at which the Generating Unit is electrically connected, or in the case of a Generating Unit that is not connected at a node, the node which is electrically nearest to the Generating Unit,
    8) the Bidding Zone to which the Production Unit belongs,
    9) the information whether the Generating Unit is a Multi-shaft Combined Cycle Dispatchable Unit or a Dispatchable Unit with Alternative Fuel.
3. For the Dispatchable Units of Auto-producers, the Dispatchable CHP Units, the Dispatchable Units with Alternative Fuel and the Dispatchable Multiple-shaftCombined Cycle Units, the provisions of this Regulation relating to the Dispatchable Generating Units are applicable, unless otherwise expressly stated.
4. The Producer is obliged to immediately inform the HETS Operator about any modification of the Generating Unit's data entered in the Balancing Market Generating Units Registry.
5. The Generating Units are deleted from the Generating Units Registry when they cease to operate.

Article 10. Dispatchable RES Units Portfolios Registry

1. The HETS Operator keeps a Dispatchable RES Units Portfolio Registry in which Dispatchable RES Units Portfolios with Market Participation obligation are registered, that have successfully completed the relevant pre-selection tests described in the "Terms and Conditions of Balancing Service Providers".
2. The HETS Operator keeps and updates the Dispatchable RES Units Portfolios Registry, which contains at least the following information for each Dispatchable RES Units Portfolio represented by an RES Producer or a RES Aggregator:
    1) the EIC Code of the Entity,
    2) the geographical location(s),
    3) the Bidding Zone,
    4) the RES technology,

5) the RES Units connected to High Voltage or Medium Voltage that are part of the Portfolio,

6) the Registered Operating Characteristics of the Dispatchable RES Units Portfolio according to the provisions of the HETS Operating Code (as applicable to conventional Generating Units), modified with the following technical characteristics:

   i. maximum contribution to downward FCR,

   ii. maximum technical capability to provide upward and downward FRR,

7) the identifier (s) of the Meter (s) which record (s) the output of each individual RES Unit belonging to the Dispatchable RES Unit Portfolio,

8) the node (s) at which each individual RES Unit belonging to a Dispatchable RES Unit Portfolio is electrically connected in the case it is directly connected at the HETS or the node (s) that is (are) electrically nearest to it, in the case it is connected to the Distribution Network,

9) the Bidding Zone to which the Dispatchable RES Unit Portfolio belongs

3. Each RES Producer/RES Aggregator is obliged to immediately inform the System Operator of any change concerning the data held in the Dispatchable RES Unit Portfolios Registry.

Article 11. Dispatchable Load Portfolio Registry

1. The HETS Operator keeps a Dispatchable Load Portfolio Registry in which Dispatchable Load Portfolios are registered, that have successfully completed the relevant pre-selection tests described in the "Terms and Conditions of Balancing Service Providers".

2. The HETS Operator keeps and updates the Dispatchable Load Portfolio Registry, which contains the following information for each Dispatchable Load Portfolio represented by a Demand Response Aggregator:

   1) the EIC Code of the Entity,

   2) the geographical location(s),

   3) the Registered Operating Characteristics of the Dispatchable Load Portfolio according to the provisions of the HETS Operating Code, modified with the following technical characteristics:

      i. maximum contribution to upward and downward FCR,

      ii. technical maximum output capacity under Automatic Generation Control (AGC) while providing automatic FRR,

      iii. technical minimum output capacity under Automatic Generation Control (AGC) while providing automatic FRR,

      iv. maximum technical capability to provide upward and downward FRR,

      v. a technical minimum corresponding to the 'minimum load reduction', if it is not zero,

      vi. minimum up/down time, similarly to the respective characteristics of the Generating Unit, if it is not zero,

      vii. minimum and maximum delivery period for the supply of Balancing Energy,

      viii. minimum base load period (i.e. minimum period between two successive activations of the Balancing Energy),

ix. maximum frequency of activations for the provision of Balancing Energy during a day,

x. output power increase rate and output power decrease rate, and

xi. the rate of load change while operating under Automatic Generation Control (AGC), if applicable,

4) the individual loads included in the Portfolio,

5) the identifier (s) of the consumption Meter (s) which record(s) the consumption of each individual load belonging to the Dispatchable Load Portfolio,

6) the node (s) to which each individual load belonging to a Dispatchable Load Portfolio is electrically connected in the case that the individual load is directly connected to the HETS or the node (s) that is (are) electrically closer to it, in the case that the individual load is connected to the Distribution Network and

7) the Bidding Zone to which the Dispatchable Load Portfolio belongs.

3. Each Response Demand Aggregator is obliged to immediately inform the System Operator of any change concerning the data held in the Dispatchable Load Portfolios Registry.

CHAPTER 4

GENERAL BALANCING MARKET PRINCIPLES

Article 12. General Balancing Market Description

1. The Balancing Market includes the Balancing Capacity Market, the Balancing Energy Market and the Imbalances Settlement.

2. The Balancing Service Providers submit Balancing Energy Offers and Balancing Capacity Offers in the Balancing Market on behalf of the Balancing Services Entities they represent.

3. In the context of the Balancing Market, the HETS Operator executes the Integrated Scheduling Process (ISP) for the commitment (synchronization) or de-commitment of Balancing Services Entities and for the Balancing Capacity commitment as described in Section II of this Regulation.

4. The HETS Operator operates the Balancing Energy Market for the activation of the Manual and Automatic FRR Balancing Energy Offers and issues Manual and Automatic FRR Dispatch Instructions to Balancing Services Entities as described in Section III of this Regulation.

5. The Balancing Market operates throughout the year, for each calendar day.

Article 13. Clearing House Contract

1. The HETS Operator may assign operations relating to the settlement of transactions in the Balancing Market to a Clearing House, in accordance with the provisions of Article 12 of Law 4425/2016.

2. The Clearing House shall perform, inter alia, the following operations:

1) act as the counterparty of the Participants, where defined, for transactions concluded in the Balancing Market, with respect to the financial rights and obligations arising from such transactions.

2) implement pricing, money transfer and risk management procedures resulting from the participation in the Balancing Market in accordance with the Settlement Regulation.

3) calculate the margin requirements for each Clearing Member, and inform the Clearing Members of the securities or the guarantees needed to be provided to meet these margin requirements.

4) cover possible deficits in the Balancing Market that may arise due to a payment deficit, lack of payment, and even a Breach by a Clearing Member, in accordance with the Settlement Regulation.

5) provide reporting services to Clearing Members and Non-Clearing Members with respect to information on fulfillment of financial obligations.

6) keep a complete and accurate record of all money transfers and risk management data. The form of record keeping is determined as the Clearing House can reasonably define. All money transfers and risk management data should be kept as they are for at least five (5) years from the date when the money transfer and the Risk Management Data were generated for the first time (or created for the first time, if the date is earlier).

7) keep the Accounting Accounts for each Participant.

8) keep the Accounting Account for the collection of the applicable fees of the Participants by the HETS Operator in accordance with the provisions of this Regulation.

9) submit reports to the HETS Operator with regard to the operations assigned by the HETS Operator to the Clearing House, and

10) provide the HETS Operator with access to all data held by the Clearing House regarding the activities assigned to the Clearing House by the HETS Operator.

3. The Clearing House complies with all the obligations set forth in the applicable legislation, the Balancing Market Regulation and the Decisions adopted for its implementation.

Article 14. Balancing Market Surveillance

The Regulatory Authority for Energy (RAE) supervises the exercise of the rights and obligations of the HETS Operator and the Participants in the market under this Regulation, in accordance with the applicable law.

CHAPTER 5

BALANCING MARKET SYSTEM

Article 15. Balancing Market System Description

1. The Balancing Market System performs all processes and all necessary calculations and records all the data and the results of the Balancing Market in terms of ISP, the Balancing Capacity Market, the Balancing Energy Market and the Balancing Market Settlement. The Balancing Market System includes the following subsystems:

   1) the Balancing Service Providers Registry and the Balance Responsible Parties Registry,

   2) the Balancing Market Generating Units Registry, the Dispatchable RES Units Portfolios Registry and the Dispatchable Load Portfolios Registry,

   3) the Physical Transmission Rights Declaration Submission System of the HETS Operator,

   4) the Balancing Market Bidding Submission System

5) the Dispatch Information Administration System, including: the Load Forecasting/RES Injection Forecasting/Reserve Requirements Forecasting Mechanism, the interface with the Power Exchange for acquiring the Market Schedules of all the Entities, the Integrated Schedule Process solution mechanism and the Balancing Energy Market solution mechanism, RTBM clearing system, the Dispatch Instructions mechanism in real time and the interface with the Supervisory Control and Data Acquisition System (SCADA).

6) the Balancing Market Settlement System, which carries out all Clearing calculations and processes, as well as the interface with the Clearing House,

7) the Participant Communication System and the data bases required for the operation of the above.

2. The HETS Operator operates and maintains the Balancing Market System. The Balancing Market System must be fully compatible with the functions provided for in this Regulation.

3. The Balancing Market System supports commonly accepted principles of good trading practice, is based on modern, appropriate and reliable information and communication technologies and complies with strict standards of uninterruptible operation, increased reliability and integrity of information.

4. The Balancing Market System databases are protected by an appropriate security system that does not allow non-unauthorized persons to have access to classified information. The System itself provides protection against deletion of information from the databases.

Article 16. Access to the Balancing Market System

1. The HETS Operator shall provide the forecasted access to the Balancing Market System if the following conditions are met:

   1) the Registered Balancing Service Provider/Registered Balance Responsible Party has fulfilled the authentication requirements as specified in the Technical Decision "Balancing Market System Rules". These requirements may include, inter alia, the obligation to provide an electronic certificate for signature, encryption or other authentication technology purposes, and

   2) the Balancing Market 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, as described in the Technical Decision "Balancing Market Rules".

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 after 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 via any means to the operational competent person designated by 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 is required to send a reasoned rejection note and to refuse access to the Balancing Market System.

Article 17. Balancing Market System Certification

1. The HETS Operator shall ensure that the Balancing Market System is certified by an independent inspection firm that certifies the compatibility with the functions and the

procedures included in this Regulation and in the Technical Decision "Balancing Market Rules", and proceed either:

1) in full inspection, or

2) in partial inspection of the changes and their impact on the remainder of the Balancing Market System

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

2. The HETS Operator shall each time determine the requirement for full inspection or partial inspection at its discretion.

Article 18. Communication between the HETS Operator and the Participants

1. The communication between the HETS Operator and the Balancing Service Providers / Balance Responsible Parties, which includes all notifications or submissions provided for by the provisions of this Regulation, shall be performed via electronic means through the Balancing Market System. In case communication via the Balancing Market System is not possible for any reason, or in cases of emergency, communication can take place via other means such as telephone, email or fax at the discretion of the HETS Operator.
2. The HETS Operator shall establish appropriate interconnection protocols for the Parties to communicate with the Balancing Market System using the appropriate international standards and shall make these interconnection protocols available to all persons requesting it. The Contracting Parties shall put into service systems suitable for effective communication with the Balancing Market System operated by the HETS Operator.
3. The Balancing Market System automatically issues communication receipts sent directly to the Participants through the Participants Communication System.
4. In the event of total or partial breakdown of the Participants Communication System, the HETS Operator shall immediately notify all the Participants by sending a relevant notice using any appropriate means, specifying the procedure to be followed for further communication and the expected time required to restore the breakdown. Immediately after the breakdown restoration, the HETS Operator shall inform all Participants electronically.
5. In any case, the communication through the Participants Communication System is a priority as long as there is no breakdown. In this case, the provisions of the Emergency Situations, as defined in the HETS Operation Code, shall apply.
6. Each Contracting Party shall comply with specific standards for the communication with the HETS Operator, as described in the Technical Decision "Balancing Market System Rules". These standards shall apply to the operational capability, the reliability and the safety of its own communication centers and the appropriate computer and data networking equipment. The equipment shall be used by the Contracting Party only for communications with the Balancing Market System.
7. Each Contracting Party is responsible for the provision and maintenance (at the expense of the Contracting Party) of telephone, fax and e-mail.

Article 19. Participants' Support

The HETS Operator shall inform the Participants about the Balancing Market System and provide them with support and instructions in order to get a suitable compatible user system for communicating with the Balancing Market System.

Article 20. Record Keeping

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

Article 21. 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 dispatch process for the previous calendar month, which shall include at least the following:

1) the total electricity and maximum total system load per Dispatch Day,
2) the zonal imbalances per FRR Imbalances Settlement Time Period,
3) important HETS events,
4) aggregate information on Dispatch Instruction violations by Balancing Service Providers.

CHAPTER 6

MISCELLANEOUS

Article 22. Balancing Market Fee:

1. The expenditure related to the obligations of the HETS Operator in accordance with this Regulation, which are considered reasonable, efficient and proportionate, as well as a rate of return on them, 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 is defined annually, at least two months before the beginning of each year, upon proposal by the HETS Operator and approval by RAE. The definition of the Balancing Market Fee for each year may take into consideration corrections concerning previous years, if required.
3. The Balancing Market Fee comprises the following:
   1) Fixed Participation Fee in the Balancing Market per Participant. This fee shall be paid on a monthly basis and may be differentiated by Category of Participant.
   2) Proportional Balancing Fee per Participant. This fee shall be paid on a monthly basis.
4. The Proportional Balancing Fee shall be charged to Balance Responsible Parties based on the monthly quantity of imbalances energy and to Balancing Service Providers based on the monthly quantity of balancing energy provided.

   The Balancing Market Fees shall be collected monthly by the HETS Operator or by the Clearing House, if the provisions of Article 13 of this Regulation have entered into force. In this case, the Clearing House shall give to the HETS Operator the Fees received pursuant to Article 106 of this Regulation.

Article 23. Dispute resolution

1. With no prejudice to paragraphs 5 and 6 of this Article, if there is a dispute, 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 this end, the Party raising the dispute shall send a notice to the other Party, stating:

1) the Balancing Service Contract or the Balance Responsible Party Contract between the Parties,

2) the reason for the dispute, and

3) 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 the meeting request and try to resolve the dispute amicably. If no agreement is reached or no response is received within thirty (30) business days of the date of the above meeting request, either Party may refer the issue to the management of the Parties, in order to resolve the dispute in accordance with paragraph 3.

3. The Authorized Representatives of the HETS Operator and the Registered Balancing Service Provider / Registered Balance Responsible Party shall meet within twenty (20) business days from the meeting request and try to resolve the dispute amicably, in good faith and in accordance with good business practices. The results of the negotiations shall be reflected in a report signed by the representatives, that is binding on the Parties.

4. In the event that the dispute is not resolved through the amicable settlement process, the parties may refer the dispute to RAE, either through the complaint procedure under Article 34 of Law 4001/2011, or to be resolved by 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 referred to in the interpretation or the implementation of this Regulation, the Greek law applies.

5. Appealing for amicable settlement, arbitration or litigation pursuant to this Article shall not relieve the parties of their obligations under this Regulation and the Balancing Services Provider 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 Provider Contract of the Registered Balancing Service Provider or the Balance Responsible Party Contract of the Registered Balance Responsible Party.

Article 24. Termination of the Balancing Service Provider Contract or the Balance Responsible Party Contract

1. The Balancing Service Provider Contract / the Balance Responsible Party Contract is 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:

1) the Balancing Service Provider / Balance Responsible Party has no outstanding (past due or not) liabilities against the Clearing House on the Termination Date specified in paragraph 3 of this Article, and

2) the Balancing Service Provider / Balance Responsible Party has no obligation to participate in the Balancing Market, based on this Regulation.

3. In the case of paragraph 2 of this Article, the termination shall be notified in writing, with a bailiff, and shall enter into force and take effect thirty (30) business days after its notification to the HETS Operator or after the expiry of the period specified by the party

that terminates the contract, which in no case may be less than thirty (30) business days from the date of notification ("Termination Date").

4. The HETS operator may terminate the Balancing Service Contract / Balance Responsible Party Contract in the following cases:

   1) 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 participating in the Balancing Market, or

   2) if the Registered Balancing Service Provider / Registered Balance Responsible Party repeatedly breaches its obligations under this Regulation or the Balancing Service Contract / Balance Responsible Party Contract, or

   3) if the Registered Balancing Service Provider / Registered Balance Responsible Party breaches its obligations against the Clearing House.

5. In the case of paragraph 4 of this Article, the termination shall be notified in writing with a bailiff and shall come into force and produce its results upon notification.

6. The HETS Operator is required to notify the termination of the Balancing Service Contract / Balance Responsible Party Contract to RAE, to the Power Exchange, the Clearing House, and any other person deemed necessary, as soon as possible.

7. In the event of termination of a Balance Responsible Party Contract, which concerns the representation of one or more Load Representatives, the HETS Operator is required to inform the Last Resort Supplier as soon as possible, so that the respective customers will be transferred to the Last Resort Supplier.

8. The Balancing Service Provider / Balance Responsible Party whose Balancing Service Contract / Balance Responsible Party Contract is terminated, shall continue to be liable against the HETS Operator and the Clearing House, in accordance with the provisions of this Regulation, for liabilities incurred prior to the termination.

Article 25. Force Majeure

1. Force majeure events for the implementation of this Regulation are events that affect the performance of obligations arising from this Regulation, and are beyond the control of the party affected by them and which could not be anticipated or prevented, despite the diligence that any prudent party might show.

2. If any Party (the "Non-Fulfilling Party") is unable to fulfill any of its obligations under this Regulation due to a case of Force Majeure, the fulfillment of mutual claims and obligations arising from the corresponding Balancing Service Contract or the Balance Responsible Party Contract is suspended for the Force Majeure Period.

3. In case of an Event of Force Majeure, the HETS Operator or a Registered Balancing Service Provider / Registered Balance Responsible Party who invokes an Event of Force Majeure, has the following obligations:

   1) it is required to send to the other Party a notice as soon as possible, describing the nature of the Force Majeure and its probable duration and to continue to give reports with reasonable frequency during the period of Force Majeure.

   2) it makes every possible effort to limit the consequences of the Force Majeure as soon as possible after the event of Force Majeure,

   3) it cooperates with the other Party in order to find the best way to continue their activities as far as possible in accordance with this Regulation.

4. If the 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,

with notification to the other Party and for as long as the Force Majeure continues after this six month period, unilaterally terminates the Balancing Service Contract or the Balance Responsible Party Contract, respectively. The termination shall take effect ten (10) business days after the notice is given or at any later date specified in the Termination Notice.

Article 26. Notices

1. In addition to communication through the Balancing Market System as described in Article 18 or otherwise specified in this Regulation, any notice or other communication in the context of or in connection with this Regulation shall be conducted by personal delivery, or by post, fax or email, and shall be addressed to the representative of the other Party, as it is defined in the Balancing Service Contract / Balance Responsible Party Contract, or as it is notified by the Registered Balancing Service Provider / Registered Balance Responsible Party.
2. In particular, for the communication concerning (i) the conclusion of the Balancing Service Contract / Balance Responsible Party Contract pursuant to and Article 5, communication shall be conducted by personal delivery only or by post, with proof of receipt, or (ii) its termination, according to Article 24, shall be served by a bailiff.
3. All notifications and other communications, are deemed to have been received by the Party they are addressed to, as follows:
   1) in the case of personal delivery or by post, at the time of delivery,
   2) in the case of a fax, at the time indicated on the proof of delivery of the sender's facsimile machine,
   3) in the case of e-mail, at the time of sending the e-mail, 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 is deemed to have been received at the beginning of the next business day's working hours.

Article 27. Transparency – Confidentiality

1. The HETS Operator shall comply with all the rules laid down by the applicable legislation on transparency and publication of information for the transactions carried out in the context of the Balancing Market, and in particular with the provisions of:
   1) 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,
   2) 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
   3) Commission Regulation (EU)c543/2013 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,
   4) Commission Regulation (EU) 2017/2195 of 23 November 2017 on establishing a guideline on electricity balancing,
   5) or any other relevant regulatory act or law.
2. The HETS Operator shall provide to third parties, and in particular to the Balancing Service Providers / Balance Responsible Parties, at a reasoned request, information relating to transactions carried out in the framework of the Balancing Market, provided that:

1) such an act is not contrary to a provision of law,

2) the information does not constitute commercially sensitive information and its provision does not contain unfair commercial or competitive advantages to third parties and in particular to Registered Balancing Service Providers / Registered Balance Responsible Parties and

3) The third party, including the Registered Balancing Service Providers / Registered Balance Responsible Parties shall be bound by a confidentiality obligation.

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 who receives confidential information in connection with this Regulation 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:

1) to the extent provided for in this Regulation,

2) to the extent required to comply with the applicable national or European legislation as provided for in paragraph 1 of this Article,

3) to the extent required by competent courts or authorities during proceedings before them, in which the addressee participates,

4) if required for the proper fulfillment of its duties and obligations under applicable law and this Regulation, or

5) if required for the issuance of licenses or approvals by the competent authority.

6. Moreover, the obligations arising from this Article shall not apply:

1) if the Party receiving the information can prove that at the time of disclosure, such information was already publicly available,

2) if the Party receiving the information presents evidence that, from the time of the notification, the information has been legally received by a third party or made available to the public,

3) to confidential information disclosed in accordance with legal and regulatory arrangements in an integrated form, from which no information relevant to a particular Market Participant can derive,

4) to information whose publication is explicitly provided for by the present Regulation.

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 intellectual property in respect of information or tools made available or sent by one Party to another pursuant to this Regulation.

9. By decision of RAE, upon recommendation by the HETS Operator, a procedure for informing third parties and publishing the monitoring data of the Balancing Market System

is standardized, which ensures in a uniform and systematic way the observance of transparency and the safe informing of the public, and also the principle of confidentiality.

Article 28. Release and Assignment

The Registered Balancing Service Provider / Registered Balance Responsible Party 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 Regulation.

Article 29. Applicable law and jurisdiction

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

Article 30. Language and Currency

1. If this Regulation is translated into English, in the event of a discrepancy between the Greek text and the English version, the Greek text prevails over the English.
2. For the implementation of the provisions of this Regulation, all amounts are in Euros.

Article 31. 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 Regulation, shall not constitute a waiver of this or any such right, power or judicial remedy.

Article 32. Entire agreement

1. This Regulation, the Balancing Service Contract or the Balance Responsible Party Contract is the entire agreement between the HETS Operator and each Registered Balancing Service Provider / Registered Balance Responsible Party.
2. If any provision of this Regulation or the Balancing Service Contract or the Balance Responsible Party 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 Regulation, the Balancing Service Contract or the Balance Responsible Party Contract, which shall continue to be in force and have legal effects.

Article 33. Special cases

1. Regarding the Emergency Situations, the provisions of the HETS Operation Code and the Natural Gas Emergency Plan apply.
2. In the event that the operation of the Balancing Market is impossible, in particular due to an Emergency Situation, or a 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 the Market Activities", approved by RAE, upon the recommendation of the HETS Operator according to the provisions of Article 18 (4) of Law 4425/2016.

SECTION II

INTEGRATED SCHEDULING PROCESS

CHAPTER 7

GENERAL PROVISIONS

Article 34. Scope

This section presents:

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

Article 35. General Provisions for the Integrated Scheduling Process

1. ISP aims to (a) bind the short-term necessary Balancing Capacity and (b) to achieve a schedule that meets the technical constraints of the HETS and the Balancing Services Entities based on ex ante estimation of any system 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 Intraday Market. The Dispatch Day D starts at 01:00 Eastern Europe Time of calendar day D and ends at 01:00 Eastern Europe Time of calendar day D + 1.
4. 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 Eastern European Time.
5. ISP is executed in three scheduled times:
    1) one (ISP1) which is executed at 17:00 Eastern European Time on calendar day D-1 and covers all Dispatch Periods of Dispatch Day D,
    2) one (ISP2) which is executed at 00:00 Eastern European Time on calendar day D and covers all Dispatch Periods of Dispatch Day D,
    3) one (ISP3) which is executed at 10:30 Eastern European Time 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 ("on-demand ISP "), in case that an event occurs, which significantly affects the scheduling of the units and the dispatch of the Balancing Capacity. Such events include but are not limited to, significant changes in the Non-Dispatchable Load forecast, or the RES Portfolio

without Market Participation Obligation forecast, or the availability of resources, or the system conditions.

7. The following products are used in the ISP:
   1) upward and downward Balancing Energy without distinction in manual FRR and automatic FRR;
   2) 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 Balancing Capacity Offers and ISP Balancing Energy Offers of the Balancing Services Providers to ISP, for Dispatch Day D starts at 14:00 Eastern European Time on calendar day D-1 and ends at 16:00 Eastern Europe Time on calendar day D-1. During this time period, 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 16:00.
10. The HETS Operator shall draw up a timetable for the activities governing the actions required for the execution of the ISP that includes the actions required during the calendar days D and D-1. This timetable is published on the website of the HETS Operator.

Article 36. Transfer of information to the HETS Operator within the framework of the ISP.

1. The Power Exchange shall transfer to the Balancing Market Operator for each Market Time Unit of each Dispatch Day, not later than 15 minutes after the latest Offer Submission Deadline to the Local Intraday Auction or the Complementary Regional Intraday Auction or the Continuous Intraday Transactions, the following information:
   1) The Scheduled Exchanges and the corresponding purchase prices, for each inter-zonal corridor, as calculated in the results of the Day-Ahead Market and the Intraday Market. The scheduled Exchanges shall be submitted to the HETS Operator in order to calculate any Inter-zonal Capacity after the solution of the Intraday Market.
   2) The Market Schedules, i.e. the algebraic sum of the quantities of the accepted Day-Ahead and Intraday Market Orders for each of the following Entities for each Market Time Interval of the Dispatch Day:
      i. Generating Units,
      ii. Generating Units under commissioning or Testing Operation,
      iii. RES Units in commissioning or Testing Operation,
      iv. Dispatchable RES Portfolios per Bidding Zone,
      v. Non-Dispatchable RES Portfolios per Bidding Zone,
      vi. Dispatchable Load Portfolios per Bidding Zone,
      vii. Non-Dispatchable Load Portfolios per Bidding Zone,
      viii. RES Units Portfolio without Market Participation Obligation per Bidding Zone.
   3) The Market Schedules related to the HETS Losses per zone, as calculated in the results of the Day-Ahead Market and the Intraday Market.

2. Details on the transfer of information from the Power Exchange to the HETS Operator are contained in the Technical Decision "Data Exchange with the Power Exchange".

3. The Distribution Network Operators shall notify the HETS Operator as soon as possible in case of disconnection:

   1) of any component of the Distribution Network that may affect the normal operation of the electricity system in real time,

   2) of any load connected to the Distribution Network which may affect the Non-Dispatchable Load Forecast performed by the HETS Operator in the context of the Balancing Market operation, and

   3) of any RES Unit connected to the Distribution Network, which may affect the Non-Dispatchable RES Portfolios Forecast performed by the HETS Operator in the context of the Balancing Market operation.

4. Details on the transfer of information from the Distribution Network Operators to the HETS Operator are contained in the Technical Decision "Data Exchange with the Distribution Network Operators".

5. The RES Producers and / or RES Aggregators representing Non-Dispatchable RES Portfolios, 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 37. HETS Operator obligations

1. In the framework of ISP, the HETS Operator prepares and then publishes on its website the following forecasts for each Dispatch Period of the Dispatch Day, seven (7) hours before the Expiration of the ISP Submission Deadline:

   1) the Non-dispatchable Load Zonal Forecasting,

   2) the Zonal Forecasting for RES Portfolio without Market Participation Obligation,

   3) the Non-dispatchable RES Units Zonal Forecasting,

   4) the upward and downward system requirements, 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 these forecasts for each calendar year.

4. The HETS Operator shall not be held responsible for the accuracy of its forecasts in the framework of its obligations under this Regulation.

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 are 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 solution of the ISP.

7. The HETS Operator executes the ISP, notifies to each Balancing Service Provider the results of the ISP that relate to the Balancing Services Entities it represents and publishes these results on its website.

Article 38. Non-dispatchable Load Zonal Forecasting

The HETS Operator shall prepare the Non-dispatchable Load Zonal Forecasting, taking into account, for the Dispatch Periods under consideration, the following information:

1) Historical data of Non-dispatchable Load Portfolios and statistical data resulting from the processing of the historical data, including, but not limited to, the evolution of the load per energy use category,
2) weather condition forecasts, historical load data under similar weather conditions, comparable statistical data, as well as the load covariance and the weather condition parameters,
3) events that the HETS Operator knows in advance that will occur,
4) operations in the HETS and/or the Distribution Network affecting the half-hourly energy offtake in a Transmission Meter, for which the HETS Operator has been informed, and
5) other information collected and notified to the HETS Operator.

Article 39. Zonal Forecasting for RES Portfolio without Market Participation Obligation

The HETS Operator shall prepare the Zonal Forecasting for RES Portfolio without Market Participation Obligation, taking into account, for the Dispatch Periods under consideration, the following information:

1) historical data on injections of RES Portfolios without Market Participation Obligation, as well as statisticsthat derive from the processing of the historical data,
2) weather condition forecasts (wind speed, sunshine, etc.), historical data of injections of RES Portfolios without Market Participation Obligation in similar weather conditions, comparable statistics, as well as the covariance of RES injections and weather condition parameters,
3) events that the HETS Operator knows in advance that will occur,
4) other information collected and notified to the HETS Operator.

Article 40. Non-dispatchable RES Units Zonal Forecasting

The HETS Operator shall prepare the Non-dispatchable RES Units Zonal Forecasting, taking into account, for the Dispatch Periods under consideration, the following information:

1) historical data on injections of Non-dispatchable RES Units, as well as statisticsthat derive from the processing of the historical data,
2) weather forecasts (wind speed, sunshine, etc.), historical data of injections of Non-dispatchable RES Units Portfolios in similar weather conditions, comparable statistics, as well as the covariance of Non-dispatchable RES Units Portfolios injections and weather condition parameters,
3) events that the HETS Operator knows in advance that will occur,
4) injection forecasts for each Dispatch Period of the Dispatch Day submitted by RES producers and/or RES Aggregators representing the Non Dispatchable RES Units Portfolios,

5) other information collected and notified to the HETS Operator.

Article 41. Determination of Zonal/Systemic Balancing Capacity Needs

1. The HETS Operator determines the Zonal and System needs for Balancing Capacity for (a) ISP, (b) automatic FRR and (c) manual FRR, in order to ensure an adequate system response/regulation/reserve within acceptable limits established in the HETS Operation Code, taking into account the particular characteristics of the HETS as defined in the "Methodology for the Determination of Zonal/System Balancing Capacity Needs", which is approved by RAE upon recommendation by the HETS Operator according to the provisions of Article 18 (4) of Law 4425/2016.

CHAPTER 9

OBLIGATIONS OF BALANCING SERVICES PROVIDERS

Article 42. General Obligations of Balancing Services Providers

1. The Balancing Services Providers who represent Production Units have the obligation to submit to the HETS Operator:
   1) Balancing Energy Offers,
   2) Balancing Capacity Offers,
   3) Techno-Economic Declarations,
   4) Non-Availability Declarations in case of non-availability and
   5) Declarations of Maximum Continuous Generation Capability.
2. The Balancing Services Providers representing Dispatchable RES Units Portfolios or Dispatchable Load Portfolios are entitled to submit to the HETS Operator:
   1) ISP Balancing Energy Offers
   2) Balancing Capacity Offers
3. In the event that the Balancing Services Providers representing Dispatchable RES Units Portfolios or Dispatchable Load Portfolios submit to the HETS Operator ISP Balancing Energy Offers and/or Balancing Capacity Offers, they are required to submit for this particular Dispatch Day:
   1) Techno-Economic Declarations, and
   2) Non-Availability Declarations in case of non-availability
4. Balancing Services Providers representing Balancing Services Entities in Testing operation are required to submit to the HETS Operator Declarations of Operation Schedule for Units in a Testing Operation.
5. The Balancing Services Providers representing Generating Units in commissioning or Testing Operation and RES Producers representing RES Units in commissioning or 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 at the latest one (1) hour prior to the execution of the ISP. The imbalances arising between the updated schedules and the Market Schedule for these units are integrated into the imbalance of the system.

6. The Balancing Services Providers who represent Hydro Generating Units have the obligation to submit to the HETS Operator Declarations the Hydro Mandatory Injections Declarations.

7. The Dispatchable Natural Gas Units Providers shall submit, if required, to the HETS Operator, Declarations of Maximum Daily Energy Injection Constrain in accordance with Article 33 of this Regulation.

8. The Dispatchable Hydro Generating Units Providers submit, if required, to the HETS Operator Declarations of Maximum Daily Energy Injection Constrain in accordance with Article 33 of this Regulation. The Regulatory Authority for Energy, exercising its powers, inspects the above declarations.

Article 43. Maximum Continuous Generation Capability

1. The Maximum Continuous Generation Capability of the Generating Units is defined for each Dispatch Period as the maximum generation capacity that may be supplied by the Generating Unit during the Dispatch Period, taking into account at least the following:
   1) capacity deduction due to aging of the equipment,
   2) operation under conditions other than those under which the Registered Capacity was measured,
   3) reservoir levels for hydro generating units,
   4) fuel availability.
2. The Maximum Continuous Generation Capability of the Generating Units for each Dispatch Period is calculated by the respective Balancing Service Provider according to the calculation rules included in the "Maximum Continuous Generation Capacity Calculation Methodology", which is approved by RAE upon recommendation by the HETS Operator according to the provisions of Article 18 (4) of Law 4425/2016.
3. The Balancing Services Providers are required to declare for each Dispatch Day the Maximum Continuous Generation Capacity of the Generating Units they represent per Dispatch Period no later than two (2) hours prior to the Expiration of the Bidding Submission Deadline. If the Maximum Continuous Generation Capacity is not declared, it is considered equal to the Registered Capacity, as recorded in the Balancing Market Generating Unit Registry.
4. Fifteen (15) days after the end of each calendar month the Balancing Services Providers are required to send to the HETS Operator and to RAE a detailed calculation of the Maximum Continuous Generation Capacity of the Generating Units they represent for each day of the previous month in accordance with the "Maximum Continuous Generation Capacity Calculation Methodology". RAE may impose sanctions if it finds that the Maximum Continuous Generation Capacity declarations of the Generating Units are significantly different from the actual Maximum Continuous Generation Capacity.

Article 44. Submission of Non-availability Declarations

1. The Balancing Services Provider is required to submit directly to the HETS Operator a Declaration of Total or Partial Non-availability for each Generating Unit or Dispatchable RES Units Portfolio or Dispatchable Load Portfolio that it represents and has a corresponding obligation according to Article 42 of this Regulation for each Dispatch Day where there is reduced Available Capacity. Reduced Available Capacity may occur in case of a failure due to technical reasons, related to the operation or the safety of its facilities or other reasons, reasons which make it impossible to generate electricity and/or provide Balancing Services at the level of the Maximum Continuous

Generation Capacity. Producers representing Dispatchable Units with Alternative Fuel are required to submit separate Non-Availability Declarations for the operation of their Units with both the primary and the alternative fuel. Producers representing Dispatchable multi-shaft Combined Cycle Units are obliged to submit separate Non-Availability Declarations for each configuration of their Units.

2. The Total or Partial Non-availability Declarations include at least the following:
   1) the Dispatch Periods within the Dispatch Day or the Dispatch Days for which non-availability is expected to occur,
   2) the Non-available Capacity for each Dispatch Period of the Dispatch Day or the Dispatch Days, and
   3) a description of the reasons for the total or the partial non-availability.
3. Without prejudice to the provisions of Article 46 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 Services Providers who submitted them.

Article 45. Declaration of Major Breakdown

1. The Balancing Service Provider is required to submit directly to the HETS Operator a Major Breakdown Declaration for each Generating Unit or Dispatchable RES Unit or Dispatchable Load Portfolio that it represents and has a corresponding obligation under Article 42 of this Regulation, if the respective Balancing Services Entity is unable to operate for technical reasons, for a period that is expected to exceed a continuous period of ten (10) days, for each Dispatch Day during which the inability exists. Producers representing Dispatchable Units with Alternative Fuel are required to submit separate Non-Availability Declarations for the operation of their Units with both the primary and the alternative fuel. Producers representing Dispatchable multi-shaft Combined Cycle Units are required to submit separate Major Breakdown Declarations for each configuration of their Units.
2. The Major Breakdown Declarations shall include at least the following:
   1) the Dispatch Days for which the inability is expected to occur
   2) a description of the causes of the inability and the expected recovery time.
3. Major Breakdown Declarations shall remain in effect for all the Dispatch Periods to which they refer, unless they are revoked or amended by the Balancing Services Providers who submitted them.

Article 46. Acceptance and Rejection of Non-Availability Declarations and Major Breakdown Declarations

1. The HETS Operator accepts the submitted Non-Availability or Major Breakdown Declarations provided they meet the conditions of this Chapter. In case that the submitted Declarations do not meet the conditions of this Chapter, the Declaration shall be rejected 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 this objection within five (5) days from the notification of the objection. If no decision is issued within this period, the objection shall be taken into consideration implicitly rejected.

3. In case that the Partial Non-availability Declaration or the Total Non-availability Declaration for a Dispatch Period is rejected, the Available Capacity of the Generating Unit shall be equal to the Maximum Continuous Generation Capability.

Article 47. Available Capacity

1. Available Capacity means the Capacity of the Balancing Service Entity resulting based on the Techno-Economic Declaration and the Declaration of Maximum Continuous Capability of Generating Units decreased by any non-available capacity, that is declared according to this Chapter.
2. The Available Capacity of the Generating Units is used in the ISP and in the Balancing Energy Market.

Article 48. Techno-Economic Declarations

1. The Balancing Service Providers representing Generating Units, Dispatchable Load Portfolios and Dispatchable RES Units Portfolios and having a corresponding obligation pursuant to Article 42 of this Regulation, shall submit to the HETS Operator, separate Techno-Economic Declarations for each Balancing Service Entity they represent.
2. Producers representing Dispatchable Units with Alternative Fuel are required to submit separate Techno-Economic Declarations for the operation with both the primary and the alternative fuel.
3. The Producers representing 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 Generating Units. They are also required to submit, in the context of the Techno-Economic Declarations, the time intervals and the capacity steps required for the transition between the various configurations.
4. The Producers representing Dispatchable hydro Generating Units with pumping ability are required to submit separate Techno-Economic Declarations for the production and the pumping.

Article 49. Content of the Techno-Economic Declarations

1. The Techno-Economic Declarations include the data of the following tables. The Technical Data of the Techno-Economic Declarations must be in accordance with the actual operating technical information for each Balancing Service Entity. The financial data of the Techno-Economic Declaration must reflect the actual operating costs of the Balancing Services Entities.

A. Technical parameters		
A1. Technical Operating Characteristics of the Balancing Service Entity		
Description	**Numeric value**	**Measurement unit**
Minimum additional time added to the time for the synchronization in case of recall from total non-availability state		half hours
Maximum daily energy injection		MWh

A2. Technical Data of Balancing Services Entity for Balancing Energy and Balancing Capacity		
Technical capability to Provide Balancing Capacity for Upward Frequency Containment Reserve		MW
Technical capability to Provide Balancing Capacity for Downward Frequency Containment Reserve		MW
Maximum Load under Automatic Generation Control (AGC) (for providing automatic FRR)		MW
Minimum Load under Automatic Generation Control (AGC) (for providing automatic FRR)		MW
Rate change of generation/demand change for the provision of manual FRR		MW/min
Rate of change of generation/demand under Automatic Generation Control (AGC)		MW/min
A3. Technical data of Dispatchable Load Portfolios		
Minimum and maximum delivery period for the provision of Balancing Energy		half hours
Minimum base load period		half hours
Maximum frequency of activations for the provision of Balancing Energy during a day		times/day

B. Variable Cost Parameters for Thermal Generating Units					
Fuel cost by fuel type	Fuel A				€/quantitative measurement unit
	Fuel B				
	Fuel C				
Fuel Lower Heating Value by fuel type	Fuel A				GJ/quantitative measurement unit
	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 (%)**	

Average special cost of raw materials besides fuel for all capacity intervals of the Specific Heat Consumption function.	**Net Generation Level (MW)**		**Cost (euro/MWh)**	
Average special cost of additional maintenance costs due to operation, (excluding fixed maintenance costs) for all capacity intervals of the Specific Heat Consumption function.	**Net Generation Level (MW)**		**Cost (euro/MWh)**	
Average special cost of additional labor costs due to fixed operational costs, (excluding fixed labor costs) for all capacity intervals of the Specific Heat Consumption function.	**Net Generation Level (MW)**		**Cost (euro/MWh)**	

2. The Table is completed as follows:
   1) For each Generating Unit, the Techno-Economic Declaration must contain all the items listed in Table A above, except for Part A3.
   2) For each Dispatchable RES Units Portfolio, the Techno-Economic Declaration must contain only parts A1 and A2.
   3) For each Dispatchable Load Portfolio, the Techno-Economic Declaration must contain only parts A1, A2 and A3.
3. The information listed in part A2 of the Techno-Economic Declaration must comply with the specific design and performance specifications for thermal and hydro generating units in accordance with the HETS Operation Code. This information may deviate from the specifications only if an exemption from these specifications has been granted in advance in accordance with the HETS Operation Code, and only for the period for which the exemption applies.
4. The fuel cost referred to in the Techno-Economic Declarations corresponds to all costs incurred by the Producer for the supply of fuel irrespective of the type of the individual cost factors. The cost per unit of the fuel quantity is calculated as if the fuel was supplied to the Producer by an independent third party with a uniform fuel price for each unit of the fuel quantity. In the case that the fuel cost cannot be evidenced by documents, it is calculated as the ratio of the total expenses or the total cost for fuel supply, as recorded

over a reasonable period of time, divided by the total quantity of fuel supplied to the Producer for the Generating Unit over the same period of time.

5. The HETS Operator shall send to RAE by the end of the following month the minimum variable cost for the thermal Generating Units for each day of the previous month. The cost of each Generating Unit is calculated based on the data in the above table as set out in the "Methodology of Calculation of Variable Cost of Thermal Generating Units".

6. Techno-Economic Declaration submitted for Dispatchable Auto-producer Unit, concerning only the part of the Unit capacity that corresponds to the Registered Capacity of the Unit, as defined in the Generating Unit Registry.

7. Declared Unit Characteristics means the characteristics specified as a combination of the following technical and operational characteristics of the Balancing Services Entity that constitute the applicable technical capabilities of the Balancing Services Entity for a specific Dispatch Period and Dispatch Day:

   1) Registered Operating Characteristics,

   2) Techno-Economic Declaration, and

   3) Declaration of Maximum Continuous Generating Capability

   4) Non-availability declaration (total or partial), as applicable

   5) Declaration of Major Breakdown.

Article 50. Techno-Economic Declaration Submission Procedure

1. The Techno-Economic Declaration is submitted for each Dispatch Day within the Deadline for Submission of ISP Offers. During this time 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, if submitted in accordance with paragraph 1 of this Article, shall replace the previous one.

3. Declarations submitted to ISP shall be taken into consideration for the execution of ISP1, ISP2 and ISP3, as well as for any on-demand ISP. The submission of the Techno-Economic Declaration after the Expiration of the Deadline for Submission of ISP Offers (for the first Dispatch Day to which the Declaration refers) is not acceptable.

Article 51. Acceptance and Rejection of the Techno - Economic Declaration by the HETS Operator.

The HETS Operator must accept the Techno - Economic Declarations provided they have been submitted in time and they comply with the requirements set out in Articles 48 to Article 50 of this Regulation. In the event that a Techno - Economic Declaration does not meet the above requirements, the last legally submitted Declaration regarding the corresponding Dispatch Day must apply. In case that no lawful declaration exists for a Balancing Service Entity, the HETS Operator shall consider the Declared Characteristics of the Balancing Service Entity as its Registered Operating Characteristics.

CHAPTER 10

Balancing Capacity Offers in the ISP

Article 52. Submission of ISP Balancing Capacity Offers

1. The Balancing Capacity Offers correspond to the intention to provide reserves for the Balancing Capacity products referred to in Article 35 (7) of this Regulation:
   1) Upward and downward FCR,
   2) Upward and downward automatic FRR, and
   3) Upward and downward manual FRR.
2. The Balancing Services Providers representing Generating Units of the Balancing Market Generating Units Registry are obliged to submit for each Balancing Capacity product to the ISP:
   1) an upward Balancing Capacity Offer per Balancing Services Entity for each Dispatch Period of Dispatch Day, for a total upward Balancing Capacity quantity according to its Registered Operating Characteristics and
   2) a downward Balancing Capacity Bid per Balancing Services Entity for each Dispatch Period of Dispatch Day, for a total downward Balancing Capacity quantity according to its Registered Operating Characteristics.
3. Producers representing Dispatchable Units with Alternative Fuel are obliged to submit separate Balancing Capacity Offers for the operation with both the primary and the alternative fuel.
4. The Producers representing Dispatchable Hydro Generating Units with pumping ability are obliged to submit separate Balancing Capacity Offer for the generation and the pumping. The submission of Balancing Capacity Offer for the pumping operation is not obligatory.
5. Producers representing Dispatchable Multiple-shaftCombined Cycle Units are required to submit separate Balancing Capacity Offers for each configuration of their Units.
6. Balancing Services Providers are not required to submit upward and downward Balancing Capacity Offers in accordance with paragraph 2 of this Article for the Balancing Services Entities that they represent, only in the following cases:
   1) for the time during which the Balancing Services Entity is in Scheduled Maintenance, in accordance with the HETS Operation Code, and
   2) for the period of validity of the corresponding Total Non-availability Declaration or the Major Breakdown Declaration of the Balancing Services Entity.
7. The Balancing Services Providers representing Dispatchable RES Units Portfolios are entitled to submit to the ISP:
   1) an upward Balancing Capacity Offer per Balancing Services Entity for each Dispatch Period of Dispatch Day, for a total upward Balancing Capacity quantity according to its Registered Operating Characteristics and
   2) a downward Balancing Capacity Offer per Balancing Services Entity for each Dispatch Period of Dispatch Day, for a total downward Balancing Capacity quantity according to its Registered Operating Characteristics.
8. Self-Supplied Customers and Balancing Service Providers representing Dispatchable Load Portfolios, are entitled to submit upward and downward Balancing Capacity Offers for a quantity equal at maximum of the whole technical capability to provide an upward and downward Balancing Energy.

9. Offers submitted to ISP shall be taken into consideration for the execution of ISP1, ISP2 and ISP3, as well as for any on-demand ISP. Re-submission of Offers before ISP2 and ISP3 or for any on-demand ISP is not allowed.

Article 53. Format of the Balancing Capacity Offers

1. The Balancing Capacity Offers for each Balancing Services Entity and for each Dispatch Period consist of individual steps for all Balancing Capacity Types for which their Balancing Services Entities have the corresponding technical capacity based on their Registered Characteristics. Each step contains a offer price in €/MW to two (2) decimal places and a non-negative price corresponding to the Balancing Capacity in MW to three (3) decimal places. The offer price in €/MW corresponds to each of the Dispatch Period Imbalance Settlement Period.
2. The upward Balancing Capacity Offer step-wise function shall include up to ten (10) steps. The price of the Balancing Capacity Offer that corresponds to each of the successive steps may not be reduced in relation to the offer price of the previous step.
3. The downward Balancing Capacity Offer includes up to ten (10) steps. The price of the Balancing Capacity Offer that corresponds to each of the successive steps may not be reduced in relation to the offer price of the previous step.
4. The Balancing Capacity quantities are expressed in MW, with accuracy of up to one (1) decimal place.
5. In the Balancing Capacity Offers in steps of the Dispatchable Load Portfolios, the Balancing Services Providers are entitled to include a specific quantity of Balancing Capacity per step, which is offered as a single set and can therefore either be accepted in its entirety or rejected in its entirety by the ISP.
6. The Balancing Capacity Offers for each Dispatch Period of a Dispatch Day are 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 is greater than zero and less than or equal to the Administratively Defined Balancing Capacity Offer Cap for each type of reserve. These capacity prices are submitted in €/MW per Dispatch Period, with accuracy of up to two (2) decimal places.
7. The numerical values of the Administratively Defined Balancing Capacity Offer Cap shall be established by decision of RAE upon recommendation by the HETS Operator. This decision shall be made at least two (2) months prior to the date of enforcement of the new values of the above limits.

Article 54. Amendment and Acceptance of the Balancing Capacity Offers

1. In case the Balancing Capacity Offer is not submitted in accordance with Article 52 and Article 53, the Balancing Capacity Offer for all Dispatch Periods of the Dispatch Day shall be automatically rejected by the Balancing Market System. In this case, the reason for the rejection is notified to the Balancing Services Providers through the Balancing Market System. The Balancing Service Provider may re-submit a Balancing Capacity Offer until the Expiration of the ISP Offer Submission Deadline. If the Balancing Capacity Offer is submitted in accordance with Article 52 and Article 53, the Balancing Capacity Offer shall be validated. Only Validated Balancing Capacity Offers shall be taken into consideration for the execution of the ISP.
2. After the Expiration of the ISP Offer Submission Deadline, the Balancing Capacity Offers cannot be modified and are used as they are for the execution of ISP1, ISP2 and ISP3.

Article 55. Consequences of not submitting Balancing Capacity Bids

1. In case of non-submission or non-acceptance of Balancing Capacity Offers for a Dispatch Day by a Balancing Service Provider who is obligated to submit a Reserve Capacity Offer in accordance with Article 52, the HETS Operator shall impose on it a Non- Compliance Charge for that Dispatch Day, as described in CHAPTER 21.
2. In addition to imposing the Non-Compliance Charge referred to in paragraph 1 of this Article, the Balancing Market System shall automatically create Balancing Capacity Offers for each associated Generating Unit and for all Dispatch Periods of Dispatch Day, establishing reserve offer prices equal to the corresponding offer prices included in the last validated Balancing Capacity Offer on the previous day. The Offers which created automatically by the Balancing Market System are considered as submitted by the Participant and induce all the results provided for in this Regulation, as if these Offers had been submitted by the Participant.

CHAPTER 11

Balancing Energy Offers in the ISP

Article 56. Submission of ISP Balancing Energy Offers

1. The ISP Balancing Energy Offer refers to provide an upward or downward Balancing Energy in relation to the Market Schedule concerning the respective Balancing Services Entity. The Market Schedule is the energy schedule that results from the Intraday Market solution and contains the algebraic sum of the quantities of the accepted Orders of the Day-Ahead Market and the Intraday Market for each Entity.
2. The upward ISP Balancing Energy Offer is:
    1) an increase in the production level of Generating Units and Dispatchable RES Units Portfolios with regard to their Market Schedule,
    2) a decrease in the consumption level of Dispatchable Load Portfolios with regard to their Market Schedule.
3. The downward ISP Balancing Energy Offer is:
    1) a decrease in the production level of Generating Units or a Dispatchable RES Portfolios with regard to their Market Schedule,
    2) for Dispatchable Load Portfolios, an increase to the Portfolio's consumption level in relation to the Market Schedule.
4. The Balancing Services Providers representing Generating Units of the Balancing Market Generating Units Registry are obliged to submit to the ISP:
    1) an upward Balancing Energy Offer per Balancing Services Entity for each Dispatch Period of the Dispatch Day, for a total upward Balancing Energy quantity equal to the Registered Capacity of the Balancing Services Entity based on its Registered Operating Characteristics and
    2) a downward Balancing Energy Offer per Balancing Services Entity for each Dispatch Period of the Dispatch Day, for a total downward Balancing Energy quantity equal to the Registered Capacity of the Balancing Services Entity based on its Registered Operating Characteristics.
5. Producers representing Dispatchable Units with Alternative Fuel are obliged to submit separate Balancing Energy Offers for their operation with both the primary and the alternative fuel.

6. The Producers representing Dispatchable Hydro Generating Units with pumping ability are obliged to submit separate Balancing Energy Offers for the production and the pumping. The submission of Balancing Energy Offers for the pumping operation is not obligatory.

7. Producers representing Dispatchable Multiple-shaftCombined Cycle Units are obliged to submit separate Balancing Energy Offers for each configuration of their Units.

8. Balancing Services Providers representing Generating Units of the Balancing Market Generating Units Registry are not required to submit upward and downward ISP Balancing Energy Offers in accordance with paragraph 4 of this Article for the Balancing Services Entities that they represent, only in the following cases:

    1) for the period during which the Balancing Services Entity is in Scheduled Maintenance, in accordance with the HETS Operation Code, and

    2) for the period of validity of the corresponding Total Non-availability Declaration or the Major Breakdown Declaration of the Balancing Services Entity.

9. The Balancing Services Providers representing Dispatchable RES Units Portfolios are entitled to submit to the ISP:

    1) an upward ISP Balancing Energy Offer per Balancing Services Entity for each Dispatch Period of Dispatch Day, for a total upward Balancing Energy quantity not more than the Registered Capacity of the Balancing Services Entity according to its Registered Operating Characteristics and

    2) a downward ISP Balancing Energy Offer per Balancing Services Entity for each Dispatch Period of Dispatch Day, for a total downward Balancing Energy quantity not more than the Registered Capacity of the Balancing Services Entity according to its Registered Operating Characteristics.

10. Self-supplied Customers and Balancing Service Providers representing Dispatchable Load Portfolios, are entitled to submit upward and downward ISP Balancing Energy Offers for a quantity equal to maximum for their whole cability to provide an upward and downward Balancing Energy.

11. Balancing Service Providers representing Dispatchable RES Units Portfolios or Dispatchable Load Portfolios are obliged to submit upward and downward Balancing Energy Offers to ISP, provided that they also submit corresponding Balancing Capacity Offers.

12. Offers submitted to ISP shall be taken into consideration for the execution of ISP1, ISP2 and ISP3, as well as for any on-demand ISP. Re-submission of Offers is not allowed after the Expiration of the Submission Deadline for ISP Offers.

13. In case that for a Dispatch Period of the Dispatch Day it is impossible to cover the expected imbalances and/or the Zonal/Systemic Balancing Capacity requirements, the HETS Operator is entitled to submit, for each of the Contracted Units for each Dispatch Period of the Dispatch Day, an ISP Balancing Energy Offer. The Offer Price (€/MWh) is determined on the basis of the relevant Supplementary System Energy Contract.

Article 57. Content of ISP Balancing Energy Offers

1. The upward and downward ISP Balancing Energy Offers for each Balancing Service Entity and for each Dispatch Period consist of individual steps. Each step contains an offer price in €/MW with accuracy of up to two (2) decimal places and a non-negative quantity corresponding to the generation/load level of the Balancing Services Entity in MW with accuracy of up to three (3) decimal places.

2. The upward Balancing Energy Offer includes up to ten (10) steps. The price of the ISP Balancing Energy offer that corresponds to each of the successive steps must be strictly non-decreasing in relation to the offer price of the previous step.

3. The quantity of upward ISP Balancing Energy Offer taken into account in the ISP corresponds to the difference between the Available Capacity of the Balancing Services Provider and the capacity resulting according to 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 includes up to ten (10) steps. The price of the ISP Balancing Energy offer that corresponds to each of the successive steps must be strictly non-increasing in relation to the offer price of the previous step.

5. The quantity of downward ISP Balancing Energy Offer corresponds to the difference between the zero quantity up to the capacity resulting according to 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 shall be within the Administratively Defined Balancing Energy Offer Cap and the Administratively Defined Balancing Energy Offer Lower Limit, as in force for the Dispatch Period to which the Balancing Energy Offer corresponds.

7. The numerical values of the Administratively Defined Balancing Energy Offer Lower Limit and the Administratively Defined Balancing Energy Offer Cap shall be determined by decision of RAE upon the recommendation of the HETS Operator. This decision shall be made at least two (2) months before the date of application of the new values of the above-mentioned limits.

8. In the ISP Balancing Energy Offers in steps of the Dispatchable Load Portfolios, the Balancing Service Providers are entitled to include a specific quantity per step, which is offered as a single set and can therefore either be accepted in its entirety or rejected in its entirety by the ISP.

Article 58. Amendment and Acceptance of ISP Balancing Energy Offers

1. In case that an ISP Balancing Energy Offer is not submitted in accordance with Article 56 and Article 57, the ISP Balancing Energy Offer for all Dispatch Periods of the Dispatch Day shall automatically be rejected by the Balancing Market System. In case of rejection, the grounds for the rejection shall be notified to the Balancing Services Providers through the Balancing Market System. The Balancing Service Provider may re-submit an ISP Balancing Energy Offer until the Expiration of the ISP Offer Submission Deadline. Where the ISP Balancing Energy Offer is submitted in accordance with Article 56 and Article 57, the ISP Balancing Energy shall be validated. Only Validated ISP Balancing Energy Offers shall be considered for the execution of the ISP.

2. After the Expiration of the ISP Offer Submission Deadline, the Balancing Energy Offers cannot be modified and are used as they are for the solution of ISP2 and ISP3.

Article 59. Consequences of non-submission of ISP Balancing Energy Offers

1. In case of non-submission of ISP Balancing Energy Offers for a Dispatch Day by a Balancing Service Provider who is obliged to submit an ISP Balancing Energy Offer in accordance with Article 56, the HETS Operator shall impose on it a Non- Compliance Charge for that Dispatch Day, as described in CHAPTER 21.

2. In addition to 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 each respective 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 on the previous day. The Offers created automatically by the Balancing Market System are considered as submitted by the Participant and bring all the results provided for in this Regulation, as if these Offers had been submitted by the Participant.

CHAPTER 12

EXECUTION OF THE INTEGRATED SCHEDULING PROCESS

Article 60. Data of Integrated Scheduling Process

1. The HETS Operator shall execute the ISP based on the following data, for each Dispatch Period concerned:
   1) The Balancing Energy Offers' price - quantity pairs corresponding to the steps of the Balancing Energy Offers' step-wise functions.
   2) The Balancing Capacity Offers' price-quantity pairs for upward and downward FCR, aFRR and mFRR. .
   3) The Registered Operating Characteristics of the Balancing Services Entities.
   4) The Techno-Economic Declarations submitted by the Balancing Services Providers for the Balancing Services Entities they represent.
   5) The Total and Partial Non-availability Declarations submitted by the Balancing Services Providers for the Balancing Services Entities they represent.
   6) The operational status of the Balancing Services 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.
   7) The Market Schedules of all the Balancing Services Entities.
   8) Any updates in the scheduled operation of the Generating Units/RES Units in commissioning or Testing Operation.
   9) The mandatory generation schedules of hydro Generating Units, as submitted to the HETS Operator.
   10) The Zonal Non-Dispatchable Load mbalances.
   11) The Zonal Non-Dispatchable RES Units Imbalances.
   12) The Zonal RES FiT Portfolio Imbalances.
   13) The available flows in the inter-zonal corridors.
   14) The import/export schedule Imbalances at the interconnections imposed by the HETS Operator.
   15) The system's Balancing Capacity requirements.
   16) Events that are notified to the HETS Operator, in accordance with the HETS Operation Code.
   17) The Declarations of Maximum Daily Energy Injection Constraint.
   18) Other information collected and/or notified to the HETS Operator in accordance with the HETS Operation 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 determines:

1) the Final Internal Schedules per Dispatch Period of the Dispatch Day, which correspond to Generation and Load Entities within Greece and are equal to the Market Schedules sent by the Power Exchange, and

2) 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 the System Operators, any imbalances due to technical constraints on the interconnections and the import/export imbalances included in the latest Physical Transmission Rights Declaration 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 in the Day-Ahead Market that correspond to the short-term Physical Transmission Rights and the quantities of energy sold/bought in the Day-Ahead Market (s) of the neighboring countries that correspond to the same short term Physical Transmission Rights.

Article 61. 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 different Balancing Energy Offers for the same Dispatch Period arithmetically coincide and the respective Balancing Energy quantities of such Balancing Energy Offers are not included in the ISP results, then the bidding sections will be selected by priority in the following order: (a) Dispatchable RES Units Portfolio, (b) Dispatchable Hydro Generating Units, (c) Dispatchable Load Portfolio, and (c) Dispatchable Thermal Units. Among bidding sections under the same category, priority is given to the sections of the offers corresponding to the Balancing Service Entity with the highest production/load change rate. Among bidding sections belonging to the same category and having the same production/load change rate, priority is given to the sections of the offers which were submitted earlier.

3. If the Balancing Capacity prices of the Balancing Capacity Bids for an Ancillary Service and for the same Dispatch Period arithmetically coincide and the respective Balancing Capacity quantities of these Balancing Capacity Bids are not fully included in the ISP results, then the bidding sections will be selected prioritized in the following order: (a) of Dispatchable RES Units Portfolio, (b) Dispatchable Hydro Generating Units, (c) Dispatchable Load Portfolio, and (c) Dispatchable Thermal Units. Among bidding sections under the same category, priority is given to the sections of the offers corresponding to the Balancing Service Entity with the highest production/load change rate. Among bidding sections belonging to the same category and having the same production/load change rate, priority is given to the sections of the offers which were submitted earlier.

4. The Integrated Scheduling Process Optimization Algorithm is briefly described as follows:

   1) From the ISP performance, result:

      i. the state of commitment (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.

2) The algorithm works in such a way that the total cost of Balancing Energy and Capacity procurement is minimized. Total cost of Balancing Energy and Capacity procurement means the sum of the Balancing Energy and Capacity procurement for all Dispatch Periods of the 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 execution of any on-demand ISP during the Dispatch Day.

3) The algorithm must comply with the following constraints:

i. the constraint of system imbalances, according to which the sum of the allocated upward and downward Balancing Energy of the ISP is equal to the system imbalances, per Bidding Zone and in total,

ii. the inter-zonal constraints,

iii. the sum of the Balancing Capacity for FCR of all Balancing Services Entities must be greater than or equal to the total system requirements of the Balancing Capacity for FCR,

iv. the sum of the automatic FRR Balancing Capacity of all Balancing Services Entities must be greater than or equal to the total system requirements in automatic FRR Balancing Capacity,

v. the sum of the manual FRR Balancing Capacity of all Balancing Services Entities must be greater than or equal to the total system requirements in manual FRR Balancing Capacity,

vi. the updates in the scheduled operation of the Generating Units/RES Units in commissioning or Testing Operation.

vii. the mandatory generation schedules of hydro Generating Units,

viii. the technical constraints of the Generating Units that are included in their Declared Characteristics such as capacity constraints, Balancing Energy constraints, Technically Minimum Generation and Available Capacity constraints under normal operation or under AGC, synchronization time, soak time and de-synchronization time, time and output of the Generating Unit between synchronization and the Technically Minimum Generation, the logical status commitment constraints, the minimum up/down time constraints, the ramp rate of power output and Balancing Capacity of the Units constraints,

ix. the constraints in the maximum daily energy injection from Dispatchable Natural Gas Units based on the Declarations of Maximum Daily Energy Injection constraints from Dispatchable Natural Gas Units,

x. 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,

xi. in each Dispatch Period the Dispatchable hydro Generating Units with simultaneous pumping ability operate either as Generating Units or as pumping units,

xii. in each Dispatch Period the Dispatchable Units with Alternative Fuel produce either with the primary or with the secondary fuel,

xiii. in each Dispatch Period the Dispatchable Multiple-shaftCombined Cycle Units are in one only configuration.

5. In case for a Dispatch Period of the Dispatch Day it is impossible to cover the forecasted imbalances and/or the zonal/systemic Balancing Capacity requirements, the HETS Operator shall take the following actions:

   1) include Balancing Energy Offers for Contracted Units, and

   2) re-run the ISP problem in order to attain a feasible solution.

6. In case after the re-run of the ISP, according to paragraph 5 of this Article, infeasibilities still appear in the imbalance covering constraints and/or the reserve Balancing Capacity constraints, then the infeasibilities in the respective constraints are relaxed. The order of removing the constraints should be as follows:

   1) At first, the Balancing Capacity requirements constraint for upward and downward manual FRR is not implemented,

   2) Then, the Balancing Capacity requirements constraint for upward and downward automatic FRR is not implemented,

   3) Further, the Balancing Capacity requirements constraint for upward and downward FCR is not implemented,

   4) Finally, the system imbalances constraint is not implemented.

7. The Dispatchable Units with Alternative Fuel can operate on alternative fuel for the Dispatch Days for which the National Natural Gas System (ESFA) Operator has set the ESFA at alert level (alarm status 2) or at emergency level (alert status 3) according to the Emergency Plan. The fuel, primary or alternative, of Dispatchable Units with Alternative Fuel in the above cases is decided on the basis of the ISP results. The Dispatchable 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 constraint Declarations of Maximum Daily Energy Injection from Dispatchable Natural Gas Units. The quantity of injected electricity that is included in the ISP for Dispatchable Natural Gas Units, to which the submitted constraint Declarations of Maximum Daily Energy Injection from Dispatchable Natural Gas Units refer, may not exceed the quantity specified in the above declarations.

9. The HETS Operator shall include in the ISP Data the constraint Declarations of Maximum Daily Energy Injection from Dispatchable Hydro Generating Units. The quantity of injected electricity that is included in the ISP for Dispatchable Hydro Generating Units, to which the submitted constraint Declarations of Maximum Daily Energy Injection from Dispatchable Hydro Generating Units refer, may not exceed the quantity specified in the above declarations.

Article 62. Results of Integrated Scheduling Process

1. The results of the ISP, provide:

   1) the commitment synchronization / desynchronization schedule of the Balancing Services Entities,

   2) the Balancing Capacity for manual FRR and automatic FRR for any direction (upward and downward) for each Balancing Service Entity and for each Dispatch Period of the Dispatch Day.

2. An indicative generation schedule 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 indicative generation schedule (ISP result) and the automatic Dispatch

Instruction mechanism (Balancing Energy Market) are not considered as deviations from the ISP.

3. As for the results of the ISP for the Balancing Capacity, the following apply:
   1) The results of ISP1 are not binding.
   2) The results of ISP2 are binding for the first twenty-four (24) Dispatch Periods of Dispatch Day D.
   3) The results of ISP3 are binding for the last twenty-four (24) Dispatch Periods of Dispatch Day D.
4. The results of all ISP executions are binding with regard to the commitment schedule of the Balancing Services 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 are not entitled to a fee and are subject to Non-Compliance Charges, in accordance with CHAPTER 21 of this Regulation.
6. The HETS Operator shall publish the results forty-five (45) minutes after the execution of each ISP. Within the same deadline, it informs the Balancing Service Providers who have submitted Accepted Balancing Energy and Capacity Offers for 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 deems with evidence that it is necessary to ensure the safe operation of the System and the smooth operation of the Balancing Market.

Article 63. Surveillance of Results of Integrated Scheduling Process

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

SECTION III

BALANCING ENERGY MARKET

C HAPTER 13

GENERAL PROVISIONS

Article 64. Scope

This Section presents:

1) the obligations of the HETS Operator in the framework of the Balancing Energy Market,
2) the obligations of the Balancing Service Providers in the framework of the Balancing Energy Market,
3) the data transfer between the Integrated Scheduling Process and the Energy Balancing Market,
4) the conditions and the procedure for the submission of Balancing Energy Offers by the Balancing Services Providers for the Balancing Services Entities,

5) details of input data, the optimization model, the solution methodology, and the Balancing Energy Market results, and

6) the Dispatch Instructions issued for each of the Balancing Service Providers.

Article 65. 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 Services Providers, in order to balance energy supply and demand, taking into account the Market Schedules and the state of the system 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:

   1) The upward and downward manual FRR Balancing Energy, which is activated by executing the manual FRR process for each Manual FRR Time Unit. The Balancing Service Providers submit Manual FRR Balancing Energy Offers, that is, Balancing Energy Offers that correspond to the activation of manual FRR.

   2) The upward and downward Automatic FRR Balancing Energy which is activated through the operation of the Automatic Generation Control. The Balancing Service Providers submit automatic FRR Balancing Energy Offers, that is, Balancing Energy Offers that correspond to the activation of automatic FRR.

3. The Manual FRR Time Unit is defined as the 15-minute period, starting at 01:00 Eastern Europe Time on the Dispatch Day. The manual FRR process is executed periodically for each Manual FRR Time Unit.

4. The manual FRR process adopts, without modification or review, the binding results of the ISP for each Balancing Service Entity unless the relevant Entity is subject to a forced interruption, resulting from a Submission of a Partial or Total Non-Availability Declaration or a Major Breakdown Declaration. In this case, the Unit is considered unavailable and the ISP may be executed again.

5. The Balancing Capacity for FCR, automatic FRR, and manual FRR, determined in the ISP, based on Article 61 of this Regulation, shall remain in effect during each Dispatch Period of the Dispatch Day. In case that a Generating Unit is not available due to a failure, the ISP may be executed again in order to award a Balancing Capacity for FCR, automatic FRR and manual FRR that are actually available.

Article 66. HETS Operator Responsibilities

1. The HETS Operator:

   1) collects, in real time, the telemetered electricity generation/consumption values of the Balancing Services Entities

   2) realizes very short-term Non-Dispatchable Load Zonal Forecasts for the Manual FRR Time Unit of each performance of the manual FRR process,

   3) realizes very short-term Zonal Forecasts for RES Portfolio without Market Participation Obligation for the Manual FRR Time Unit of each performance of the manual FRR process,

   4) realizes very short-term Non-Dispatchable RES Units Zonal Forecasts for the Manual FRR Time Unit of each performance of the manual FRR process,

   5) receives any updated Balancing Energy Offers and Non-Availability Declarations of the Participants,

   6) operates the Use Declaration Submission System of the HETS Operator,

7) calculates the zonal imbalances to be covered by activating Balancing Energy Offers,

8) calculates the remaining available flows of the inter-zonal corridors for executing the manual FRR process,

9) performs the manual and automatic FRR processes,

10) issues and sends Dispatch Instructions to the Balancing Services Entities,

11) issues and sends Automatic Generation Control Instructions to the Balancing Services Entities,

12) monitor the compliance of the Balancing Services Entities with the Dispatch Instructions,

13) manages and uses the Dispatch Information Administration System and

14) submits 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 keep a complete database on the dispatch process, including:

1) an ISP Schedule record,

2) a Dispatch Instructions record,

3) a proof of delivery record of the Dispatch Instructions.

3. The information contained in the above files is kept by the HETS Operator for at least five (5) years from their entry. The Balancing Service Providers have the right to access the above information for their Balancing Services Entities as well as for other Balancing Services Entities only in the context of dispute settlement in accordance with the procedure set out in the HETS Operation Code, upon their reasoned request.

Article 67. Dispatch Instructions

1. The HETS Operator shall issue Dispatch Instructions to the Generating Units with which it determines the Active Power generation, their synchronization or de-synchronization with the System, 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 Services Entities with which it determines the Injection or withdrawal 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, are as follows:

1) Commitment Dispatch Instructions (i.e. Synchronization Dispatch Instructions for the Generating Units) or Decommitment (i.e. De-Synchronization Dispatch Instructions for the Generating Units) in the framework of the ISP.

2) Manual FRR Dispatch Instructions

3) Automatic FRR Dispatch Instructions

4) Dispatch Instructions for purposes other than balancing, including but not limited to, Dispatch Instructions for Voltage Regulation or other Ancillary Services in accordance with the provisions of the HETS Operation Code.

3. In addition to the above Dispatch Instructions, the HETS Operator shall issues other instructions for the activation of Manual FRR Balancing Energy Offers for purposes other

than balancing, in order to ensure the reliable operation of the System, in particular as regards the System frequency, the voltage and the current at important nodes or elements of the HETS. The manual FRR Balancing Energy Offers that are activated for purposes other than balancing are marked with indications.

4. The Dispatch Instructions are issued by the HETS Operator to the Balancing Services Entities through the Dispatch Information Management System, or verbally.

5. In case of interruption or failure of the Dispatch Information Management System which makes the issue 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 are mandatory for the Balancing Service Providers. 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 new Dispatch Instructions. In case of non-compliance, the Balancing Service Providers are not entitled to a fee and are subject to Non-Compliance Charges, in accordance with Article 100 of this Regulation.

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 Declared Characteristics, then the respective Balancing Service Provider shall immediately inform the HETS Operator both via telephone and e-mail or fax. In this 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 this case, the HETS Operator may issue a new Dispatch Instruction taking into account the new Declared Characteristics of the respective Balancing Services Entity.

9. Balancing Service Providers are considered to comply with the Dispatch Instructions on the synchronization or de-synchronization of their Balancing Services 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 respective Balancing Service Provider indicating the respective Balancing Service Entity, the Dispatch Instruction and the time of its issue. The Balancing Service Provider shall under no circumstances be relieved of its obligations under the Dispatch Instruction 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 is specified.

Article 68. 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 Generating Units that have a corresponding obligation, in accordance with the HETS Operation Code, for all their available capacity, regardless of the award of Balancing Capacity to the ISPs.

2. Participation in the manual FRR process is mandatory for Dispatchable RES Units Portfolios and Dispatchable Load Portfolios for their total capacity, corresponding to the manual FRR Balancing Capacity awarded to the ISPs.

3. Participation in the automatic FRR process is mandatory for all Production Units that have a corresponding obligation, in accordance with the HETS Operation Code, regardless of the award of Balancing Capacity to the ISPs.

4. Participation in the automatic FRR process is mandatory for Dispatchable RES Units Portfolios and Dispatchable Load Portfolios for their total capacity, corresponding to the automatic FRR Balancing Capacity awarded to the ISPs.

5. Participation in the manual FRR process shall confer the following obligations on the Balancing Service Providers:

   1) the submission of Total or Partial Non-Availability Declarations, immediately after the occurrence of an event affecting their availability,

   2) the submission of upward and downward manual FRR Balancing Energy Offers by the Balancing Services Providers for the Balancing Services Entities they represent,

   3) availability for operation according to their Declared Characteristics, and

   4) 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:

   1) the submission of Total or Partial Non-Availability Declarations, as soon as reasonably possible after the occurrence of an event affecting their availability,

   2) the submission of upward and downward automatic FRR Balancing Energy Offers by the Balancing Services Providers for the Balancing Services Entities they represent,

   3) availability for operation according to their Declared Characteristics, and

   4) compliance with the Dispatch Instructions issued by the HETS Operator.

7. Balancing Services Providers are not obliged to submit upward and downward manual FRR Balancing Energy Offers and upward and downward automatic FRR Balancing Energy Offers for the Balancing Services Entities they represent and for which there is a corresponding obligation under paragraphs 1 to 4 of this Article, only in the following cases:

   1) for the time period during which the Balancing Services Entity is in Scheduled Maintenance, in accordance with the HETS Operation Code, and

   2) for the period of validity of the corresponding Total Non-availability Declaration or the Major Breakdown Declaration of the Balancing Services Entity.

Article 69. Submission of Balancing Energy Offers in 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 Balancing Energy Market Offers Submission. The Expiration of the Deadline for the Balancing Energy Market Offers Submission is fifteen (15) minutes prior to each Manual FRR Time Period.

2. In the event that Manual FRR Balancing Energy Offers for Generating Units are not submitted at all, or are not submitted in time,or are not accepted, then the ISP Balancing Energy Offers per Dispatch Period will automatically be converted into corresponding 15-minute Manual FRR Energy Market Offers. Each ISP Balancing Energy Offer per Dispatch Period is converted into two (2) equivalent 15-minute Manual FRR Balancing Energy Offers, in the same form and quantities and Balancing Energy prices as in the original offer. These automatically created Offers shall be taken into consideration as submitted by the Participant and shall bring all the results provided for in this Regulation, as if these Offers had been submitted by the Participant.

3. 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.

4. In case the automatic FRR Balancing Energy Offers for the Balancing Service Entities for which there was a corresponding obligation are not submitted in time or are not accepted, then ISP Balancing Energy Offers per Dispatch Period will automatically be converted into corresponding 15-minute automatic FRR Market Energy Offers. Each ISP Balancing Energy Offer per Dispatch Period is converted into two (2) equivalent 15-minute automatic FRR Balancing Energy Offers, in the same form and quantities and Balancing Energy prices as in the original offer. These automatically created Offers shall be considered as submitted by the Participant and shall bring all the results provided for in this Regulation, as if these 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 taken into consideration to be production/withdrawal at the Generating Unit Meter Point.

CHAPTER 14

MANUAL FRR PROCESS

Article 70. Manual FRR Process Input Data

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

1) the Market Schedule for each Balancing Service Entity as entered by the Use Declarations Submission System of the HETS Operator,

2) the operation schedules Generating Units/RES Units in commissioning and Testing Operation, submitted by the respective Producers, through the Module Statement Statements of Prototypes, through the operating schedules Declarations for units in test run,

3) the mandatory generating schedules for hydro Generating Units, as submitted by the respective Producers through the Water Resources Mandatory Injection Declaration,

4) the deviations in the import/export schedules at the interconnections used for the solution of the ISP, along with actual tripping on interconnections, if any,

5) the already established flows of the inter-zonal corridors between the Bidding Zones coming from the Market Schedule of all Entities, in order to calculate the residual available flows of the inter-zonal corridors for the solution of the Balancing Energy Market,

6) information on the Balancing Services Entities received by the Energy Management System (e.g. unit in or out of operation, SCADA measurements of the units' production),

7) the Automatic Generation Control status of the Balancing Services Entities that provide automatic FRR, which is received by the Energy Management System of the HETS Operator,

8) the awarded Balancing Capacity of the Balancing Services Entities for upward and downward FCR, automatic FRR, and manual FRR, as received by the last ISP solution,

9) the manual FRR Energy Offers according to Article 69,

10) the Available Capacity of all Balancing Services Entities, based on the most recent submitted Non-Availability Declarations,

11) the latest updated operation schedule of the Balancing Services Entities that have activated the maximum daily energy constraint,

12) the Declared Characteristics of the Balancing Services Entities,

13) the initial producion/consumption level of the Balancing Services Entities before and as close as possible to the start of the Manual FRR Time Unit of the specific manual FRR process solution,

14) the Zonal Imbalances of Non-Dispatchable Load,

15) the Zonal Imbalances of RES Portfolio without Market Participation Obligation,

16) the Zonal Imbalances of Non-Dispatchable RES Units,

Article 71. The procedure of the performance 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 of the manual FRR solution minimizes the cost for the coverage of the zonal imbalances for all the Bidding Zones, using the submitted upward and downward Manual FRR Energy Offers of the Balancing Services Entities. The cost for covering the system's zonal imbalances derives from the Manual FRR Energy Offers that are accepted.

3. The constraints of the manual FRR problem solution shall include at least:

   1) the zonal imbalance constraint for each Bidding Zone,

   2) the constraints on electricity flows between the Bidding Zones,

   3) the technical constraints of the Balancing Services Entities, and

   4) the constraints that ensure that the overall system requirements for ISP balancing capacity and automatic FRR are maintained,

   5) any restrictions on mandatory injections, and

   6) any constraints on maximum daily electricity injection from Dispatchable Units.

4. In case 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 all included in their entirety in the results of the manual FRR solution, then the bidding sections will be selected prioritized in the following order: (a) Dispatchable RES Units Portfolio, (b) Dispatchable Hydro Generating Units, (c) Dispatchable Load Portfolio, and (c) Dispatchable Thermal Units. Among bidding sections under the same category, priority is given to the sections of the offers corresponding to the Balancing Service Entity with the highest production/load change rate. Among bidding sections belonging to the same category and having the same production/load change rate, priority is given to the sections of the offers which were submitted earlier.

5. In case that no feasible solution results for a Manual FRR Time Unit from the Manual FRR process solution, i.e. it is not possible to meet the short-term forecasted imbalances,

observing the constraints in paragraph 3 of this Article, the HETS Operator shall re-execute the manual FRR process having, indicatively:

1) included the ISP Balancing Energy Offers from Contracted Units,

2) relaxed the constraints in paragraph 3 (4) of this Article in order to achieve a feasible solution.

In case that after following the aforementioned, there is still no feasible solution, then the manual FRR process is re-executed in accordance with the Emergency Situations provisions, as defined in the HETS Operation 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 system 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 are binding. The results concerning the subsequent Manual FRR Time Units are indicative.

Article 72. 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 immediately activate the Manual FRR Balancing Energy and send the Dispatch Instructions to the Balancing Services Entities in order to balance the system 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. In case of using two rows as mentioned above, the quantity of Manual FRR Balancing Energy that can be supplied by each Balancing Service Entity is calculated based on 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 the 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 case that the HETS Operator issues Dispatch Instructions other than the outcome of the manual FRR solution, then the HETS Operator shall submit a report to RAE justifying the selection of the Balancing Services Entities that cover the imbalance of the system. The report shall be submitted for each month within one (1) month from the end of the month to which it refers.

Article 73. 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 Services Entities, in order to achieve system balancing.

2. The HETS Operator shall issue Dispatch Instructions to the Balancing Services Entities for each Manual FRR Time Unit, in accordance with the results of the manual FRR process.

3. Each subsequent Dispatch Instruction replaces any preceding one, as regards the same Manual FRR Time Unit.

4. In emergency situations, the HETS Operator may issue Dispatch Instructions to a 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 Operating Characteristics. In this case, there shall be no additional fee for the Generating Unit.

5. In case that the HETS Operator issues Dispatch Instructions other than the outcome of the manual FRR solution, then the HETS Operator shall submit a report to RAE justifying the selection of the Balancing Services Entities that cover the imbalance of the system. 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 Services Entities that are selected to provide Balancing Energy have the obligation to follow the Dispatch Instructions issued by the HETS Operator that concern the quantities and the time period that are selected.

Article 74. Content of manual FRR Dispatch Instructions

1. The HETS Operator issues Dispatch Instructions which determine the production/withdrawal level of the Balancing Services Entities.

2. The Dispatch Instruction is notified by the HETS Operator to the Balancing Services 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 expires at the end of the Manual FRR Time Unit to which the Dispatch Instruction was issued, unless a new Dispatch Instruction is issued in the meantime.

4. The performance by the Balancing Service Provider of the Dispatch Instruction relating to the Balancing Energy through the immediate activation of the manual FRR begins immediately after the relevant Dispatch Instruction has been transmitted and stops 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:

    1) The HETS Operator shall send to each Balancing Service Entity the production/withdrawal level (in MW) to be production/withdrawal by the Balancing Service Entity at the end of the next Manual FRR Time Unit.

    2) Each Balancing Service Entity begins to increase or decrease its production/withdrawal from the beginning of the Manual FRR Time Unit until it reaches the Dispatch Instruction level (in MW), and then remains at this level until the end of the Manual FRR Time Unit.

    3) The form of the production/withdrawal level during the Manual FRR Time Unit is such that the supplied upward or downward Manual FRR Balancing Energy is equal to the corresponding Manual FRR Balancing Energy that results from the performance of the manual FRR process as described in the Technical Decision "Manual FRR".

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

CHAPTER 15

AUTOMATIC FRR PROCESS

Article 75. Activation of automatic FRR Balancing Energy

1. The automatic FRR Balancing Energy is activated by using the Automatic Generation Control function of the HETS Operator for frequency control, as defined in Commission Regulation (EU) 2017/1485 of August 2 2017 laying down guidelines for the operation of the electricity transmission system.
2. All Balancing Services Entities for which an automatic FRR has been awarded in the last ISP are activated almost simultaneously by the HETS Operator for the supply of Automatic FRR Balancing Energy.
3. The criteria for activating the Automatic FRR Balancing Energy are the Automatic FRR Balancing Energy Offer prices and the output capacity change rates of the Balancing Services Entities.
4. More details on the activation of the automatic FRR Balancing Energy are included in the Technical Decision "Automatic FRR".

SECTION IV

BALANCING MARKET SETTLEMENT

CHAPTER 16

GENERAL PROVISIONS

Article 76. Clearing Period

The Balancing Energy, the imbalances, and the Balancing Capacity are cleared every 15 minutes. The above period is defined as Imbalances Settlement Period.

Article 77. Balancing Market Accounts

1. The HETS Operator shall keep the following Balancing Market Accounts:
   1) Balancing Energy Account,
   2) Energy Account provided for purposes other than balancing,
   3) Imbalances Account,
   4) Balancing Capacity Account,
   5) Premium Account,
   6) Non-compliance Charges Account,
   7) Balancing Market Fees Accounts.
2. The Accounts referred to in paragraph 1 are not accounting and are kept solely for the purpose of monitoring the Balancing Market by the HETS Operator.

Article 78. Balancing Market Settlement Object

1. Settlement of the Balancing Market means the transparent calculation of the quantities of energy and capacity and the calculation of the monetary value of the charges and credits of the Participants as detailed in paragraph 2 of this Article.

2. Balancing Market Settlement includes the following calculations for each Dispatch Day:

    1) balancing Energy Calculation for Manual FRR for each Balancing Service Entity and for each Imbalances Settlement Period on the Dispatch Day,

    2) balancing Energy Calculation for automatic FRR for each Balancing Service Entity, for each Imbalances Settlement Period on the Dispatch Day,

    3) calculation of energy supplied for purposes other than balancing, for each Balancing Service Entity, for each Imbalances Settlement Period on the Dispatch Day,

    4) imbalances calculation, for each Balance Responsible Entity, for each Imbalances Settlement Period on the Dispatch Day,

    5) Imbalances Adjustment calculation, for each Balance Responsible Entity, for each Imbalances Settlement Period on the Dispatch Day,

    6) calculation of charges and credits of the Balancing Services Provider for Balancing Energy for each of the Balancing Services Entities it represents and for each Imbalances Settlement Period on the Dispatch Day,

    7) calculation of charges and credits of the Balancing Services Provider for Energy supplied for purposes other than balancing for each of the Balancing Services Entities it represents and for each Imbalances Settlement Period on the Dispatch Day,

    8) calculation of charges and credits of the Balance Responsible Party for Imbalances for each of the Balance Responsible Entities it represents and for each Imbalances Settlement Period on the Dispatch Day,

    9) calculation of the cost of the System losses, for each Imbalances Settlement Period on the Dispatch Day,

    10) calculation of any imposed Non-Compliance Charges,

    11) calculations of charges and credits related to Premium Accounts,

    12) calculation of Balancing Market Fees for each Participant, and

    13) calculation of amount that ensures the financial neutrality of the Balancing Market.

Article 79. Required information for the performance of the Balancing Market Settlement

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

1) the Market Schedule of every Balance Responsible Entity, as it is configured in the Day-Ahead Market and the Intraday Market,

2) the Balancing Energy Offers for manual FRR (quantity and price) per Manual FRR Time Unit, awarded in the Balancing Energy Market,

3) the Balancing Energy Offers for automatic FRR (quantity and price) per Manual FRR Time Unit, awarded in the Balancing Energy Market,

4) the activated energy offers for purposes other than balancing,

5) the Dispatch Instructions

6) the supervisory control and data acquisition system (SCADA) measurements for the Balancing Services Entities that supply automatic FRR Balancing Energy,

7) the Balancing Energy Offers of the Balancing Services Entities not awarded on the Balancing Energy Market,

8) the Day-Ahead Market clearing prices per Physical Delivery Period,

9) the indications highlighting the energy supplied for purposes other than balancing,

10) the Certified Energy Measurement Data for the Balancing Services Entities and the interconnections,

11) the quantity of electricity absorbed by Low and Medium Voltage consumers, as notified to the HETS Operator by Distribution Network Operators,

12) the energy profiles per consumer category for non-telemetered Entities by the Distribution Network Operator,

13) the total injections of the RES Production Units connected to the Low Voltage Network, as notified to the HETS Operator by the Distribution Network Operators,

14) the Declared Characteristics of the Balancing Services Entities,

15) any submitted Declarations of Total or Partial Availability of the Balancing Services Entities,

16) the ISP results for Upward and Downward FCR, automatic FRR and manual FRR Balancing Capacity for the Balancing Services Entities, in MW,

17) the Balancing Capacity Buds for the Balancing Services Entities, and

18) the actual availability of the Balancing Services Entities for the supply of any type of Balancing Capacity.

Article 80. Obligations of the Distribution Network Operators under the Balancing Market Settlement Process

1. The Distribution Network Operators shall notify to the HETS Operator per Imbalances Settlement Period of month M the following information:

   1) the representation rates per Load Representative and per Profile Category, by the 20th calendar day of the month M-1 for the offtake and the month M regarding the offtake by consumers with simple meters that are connected to the Low Voltage Network of the Interconnected System,

   2) the total electricity offtake corresponding to the consumers with hourly meters connected to the Low Voltage Network of the Interconnected System, adjusted to the Transmission System - Distribution Network Limit, per Load Representative, by the 18th calendar day of month M + 1 for month M,

   3) the total electricity offtake corresponding to Medium Voltage consumers of the Interconnected System, adjusted to the Transmission System - Distribution Network Limit, per Load Representative, by the 14th calendar day of month M + 1 for month M,

   4) the total generation of the RES Units connected to the Law Voltage network of the Interconnected System, adjusted to the Transmission System - Distribution Network Limit, by the 14th calendar day of month M + 1 for month M,

2. The Distribution Network Operators shall notify to the HETS Operator any updated data on the total electricity offtake of the Low and Medium Voltage consumers of the

Interconnected System, as well as on the generation of the RES units connected to the Low Voltage Network of the Interconnected System, in accordance with paragraph 1, not later than the last day of month M + 6, the last day of month M + 12 and the last day of month M + 24. No correction is allowed to the data sent to the HETS Operator by the Distribution network Operators after the expiry of the above deadline.

Article 81. Financial neutrality of the HETS Operator

The financial neutrality of the HETS Operator from the operation of the Balancing Market is ensured through the charges and credits of the Balance Responsible Parties, as described in Article 95 of this Regulation.

Article 82. Technical Decision "Balancing Market Settlement".

Details and examples of calculations regarding the clearing of the Balancing Energy Market, the Balancing Power Market and the Imbalances are described in the Technical Decision "Balancing Market Settlement".

CHAPTER 17

TRANSMISSION SYSTEM LOSSES

Article 83. HETS losses management

1. The HETS Operator predicts the HETS losses and takes the necessary actions to cover the said quantities of energy by submitting Priority Price-Taking Orders at the Day-Ahead Market and the Intraday Market.
2. The HETS Operator calculates the actual losses of the HETS, and calculates the charge/credit of the Imbalances Settlement of these losses.
3. The total cost of the HETS Losses is recovered by the HETS Operator through the corresponding Premium Account as defined in Article 93 of this Regulation.

Article 84. HETS Losses Forecast

1. The HETS Losses are estimated based on the "HETS Losses Calculation Methodology" and the table of the HETS Losses Coefficients. The HETS Losses Coefficients may have different numerical values for different Dispatch Periods and Dispatch Days, or may depend on the system load level.
2. The HETS Operator shall submit to RAE a proposal for the "HETS Losses Calculation Methodology", which is approved by RAE in accordance with the provisions of Article 18 (4) of Law 4425/2016. This methodology may be modified within its validity period in case of a significant permanent change in the Transmission System topology, in particular due to the commitment of a new Production Unit or an interconnection line.
3. The HETS Operator is responsible for determining the table of HETS Losses Coefficients on a yearly basis, taking into account historical quantities of energy injection/offtake, on each HETS node and the approved "HETSS Losses Calculation Methodology". The HETS Operator shall submit the Table of HETS Losses Coefficients for approval at least three months prior to the start of the calendar year to which they relate.
4. Upon approval, the HETS Operator shall use the table of the HETS Losses Coefficients for the hourly forecast of the HETS losses that should be purchased in the Day-Ahead Market and the Intraday Market.

CHAPTER 18

IMBALANCES AND BALANCING ENERGY SETTLEMENT

Article 85. Balancing energy and Imbalances calculation

1. The activated energy is calculated for each Imbalances Settlement Period separately for the manual FRR, the automatic FRR and for non-balancing purposes. An upward activated energy is always calculated with a positive value, while the downward activated energy is always calculated with a negative value.

2. The manual FRR activated Balancing Energy is defined as follows:

   1) The manual FRR upward activated Balancing Energy of a Balancing Services Entity e for an Imbalances Settlement Period t ($ABE_{e,t}^{mFRR,up}$) is (a) in respect of Production Units and Dispatchable RES Units Portfolios, the additional energy corresponding to the manual FRR Adjusted Dispatch Instruction in relation to their respective Adjusted Market Schedules and (b) in respect of Dispatchable Load Portfolios, the decrease in energy consumption corresponding to the manual FRR Adjusted Dispatch Instruction in relation to their respective Adjusted Market Schedules and

   2) The manual FRR downward activated Balancing Energy of a Balancing Services Entity e for an Imbalances Settlement Period t ($ABE_{e,t}^{mFRR,dn}$) is (a) in respect of Production Units and Dispatchable RES Units Portfolios, the decrease of energy corresponding to the manual FRR Adjusted Dispatch Instruction in relation to their respective Adjusted Market Schedules and (b) in respect of Dispatchable Load Portfolios, the increase in energy consumption corresponding to the manual FRR Adjusted Dispatch Instruction in relation to their respective Adjusted Market Schedules.

3. The activated Energy supplied for non-balancing purposes is defined as follows:

   1) The upward Activated Energy for non-balancing purposes of a Balancing Services Entity e for an Imbalances Settlement Period t ($AOE_{e,t}^{mFRR,up}$) is (a) in respect of Production Units and Dispatchable RES Units Portfolios, the additional energy corresponding to the Adjusted Dispatch Instruction for non-balancing purposes in relation to their respective Adjusted Market Schedules and (b) in respect of Dispatchable Load Portfolios, the lower energy consumption corresponding to the Adjusted Dispatch Instruction for non-balancing purposes in relation to their respective Adjusted Market Schedules and

   2) The downward Activated Energy for non-balancing purposes of a Balancing Services Entity e for an Imbalances Settlement Period t ($AOE_{e,t}^{mFRR,dn}$) is (a) in respect of Production Units and Dispatchable RES Units Portfolios, the energy decrease corresponding to the Adjusted Dispatch Instruction for non-balancing purposes in relation to their respective Adjusted Market Schedules and (b) in respect of Dispatchable Load Portfolios, the additional energy consumption corresponding to the Adjusted Dispatch Instruction for non-balancing purposes in relation to their respective Adjusted Market Schedules.

4. The Adjusted Dispatch Instruction, Adjusted Market Schedules and the Activated Energy are calculated according to the "Activated Balancing Energy Calculation Methodology", which takes into account at least the actual Availability of the Balancing Service Entities, as well as the Adjustment of the Market Schedules based on the Declared Characteristics of the Balancing Service Entities.

5. The Instructed Energy of a Balancing Services Entity e for an Imbalances Settlement Period t is equal to the Market Schedule plus the upward activated Manual FRR Balancing Energy plus the downward activated Manual FRR Balancing Energy plus the upward activated Energy for Non-Balancing purposes plus the downward Activated Energy for Non-Balancing purposes, 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 the Regulatory Authority, upon a proposal by the HETS Operator.

6. The integral of the Supervisory Control and Data Acquisition (SCADA) measurements of a Balance Responsible Entity e within an Imbalances 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 (SCADA) measurements of a Balance Responsible Entity e within an Imbalances 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 Imbalances Settlement Period *t*, then:

   i. the Upward manual FRR Activated Balancing Energy for Production Units or Dispatchable RES Units Portfolio has a positive sign and is equal to :

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

   ii. the Downward manual FRR Activated Balancing Energy for Production Units or Dispatchable RES Units Portfolio has a negative sign and is equal to :

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

   iii. the Upward manual FRR Activated Balancing Energy for Dispatchable Load Portfolio has a positive sign and is equal to:

   $$\text{A}BE_{e,t}^{aFRR,up} = SQ_{e,t}^{dn}$$

   iv. the Downward manual FRR Activated Balancing Energy for Dispatchable Load Portfolio has a negative sign and is equal to:

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

9. The Imbalance of a Balance Responsible Entity e for an Imbalances Settlement Period *t* is 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:

   i. for Production Units or Dispatchable RES Units Portfolio:

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

   ii. 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 for non-balancing purposes for an Imbalances Settlement Period *t* is given in the following functions:

    i. for Production Units or Dispatchable RES Units Portfolio:

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

    ii. for Dispatchable Load Portfolio:

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

11. The Final Imbalance of a Balancing Service Entity *e* that wasn't operating under AGC for an Imbalances Settlement Period *t* equals 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 Imbalances Settlement Period t equals to zero.

13. The Final Imbalance of a Balancing Service Entity e that is not providing Balancing Services equals to the Imbalance as it is calculated on the basis of paragraph 10. In particular:

    i. for Non-Dispatchable RES Units Portfolio and Electricity Imports from the Interconnections the Final Imbalance equals to $FIMB_{e,t} = MQ_{e,t} - MS_{e,t}$.

    ii. for Non-Dispatchable RES Units Portfolio and Electricity Exports from the Interconnections the Final Imbalance equals to $FIMB_{e,t} = MS_{e,t} - MQ_{e,t}$.

    Final Positive Imbalance (a) for Production Units and RES Units Portfolios, corresponds to higher measured energy injection compared to the respective Dispatch Instruction, and (b) for Load Portfolios corresponds to lower measured energy consumption compared to the respective Dispatch Instruction.

    Final Positive Imbalance (a) for Production Units and RES Units Portfolios, corresponds to lower measured energy injection in real time compared to the respective Dispatch Instruction, and (b) for Load Portfolios corresponds to higher measured energy consumption in real time compared to the respective Dispatch Instruction.

    In case that the Market Schedule of a Balancing Service Entity e is less than the Technical Minimum of the Entity, then (a) if the ISP zeroes the Entity's energy, the quantity from the Market Schedule up to zero is considered to be an imbalance, and (b) if the ISP loads the Entity at least to its Technical Minimum, the Energy from the Market Schedule up to the Technical Minimum of the Entity is considered to be an imbalance. Details as well as any deviations in relation to the above, are described in the "Activated Balancing Energy Calculation Methodology".

14. For Dispatchable Load Portfolios and for Imbalances Settlement Periods for which balancing energy is provided, the Market Schedule is considered equal to their Reference Load calculated by the HETS Operator for the respective period, that corresponds to the electricity that would be consumed by the Dispatchable Load Portfolio in case the relevant Balancing Energy Offers were not activated. The details and the rules for calculating the Reference Load are included in the "Dispatchable Load Portfolios Reference Load Calculation Methodology".

Article 86. Manual FRR Balancing Energy Price

1. In the event there is no congestion between the Bidding Zones, the Manual FRR Upward Balancing Energy Price (in EUR/MWh), $BEP_{z,t}^{up}$, for each Imbalances Settlement Period, t, for the activation of a Manual FRR Upward Balancing Energy is equal to the maximum of the prices of the manual FRR offer steps that were activated to cover the System Imbalance. In the event there is congestion between the Bidding Zones, the Manual FRR Upward Balancing Energy Price for each Imbalances Settlement Period, t, for the activation of an Upward Balancing Energy for each Bidding Zone is equal to the maximum of the prices of the manual FRR offer steps that were activated to cover the Zone Imbalance of the specific Bidding Zone, z.

2. In the event there is no congestion between the Bidding Zones, the Manual FRR Downward Balancing Energy Price (in EUR/MWh), $BEP_{z,t}^{dn}$, for each Imbalances Settlement Period, t, for the activation of a Manual FRR Downward Balancing Energy is equal to the minimum of the prices of the manual FRR offer steps that were activated to cover the System Imbalance. If there is congestion between the Bidding Zones, the Manual FRR Downward Balancing Energy Price for each Imbalances Settlement Period, t, for the activation of a Downward Balancing Energy for each Bidding Zone is equal to the minimum of the prices of the manual FRR offer steps that were activated to cover the Zone Imbalance of the specific Bidding Zone, z.

3. The Upward and Downward Manual FRR Balancing Energy Offers activated for non-balancing purposes are market and excluded from the calculation of upward and downward Manual FRR Balancing Energy. 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 non-balancing purposes, approved by RAE. Such reasons include but are not limited to, the management of the system constraints, and the reallocation of the reserves.

4. If during an Imbalance Settlement Period energy was injected from Contracted Units or Supplementary Energy from Emergency Imports or Load Cuts were performed, the manual FRR Upward Balancing Energy Price may be increased with the Balancing Energy Deficit Premium in €/MWh for the specific Imbalances Settlement Period. The Balancing energy Deficit Premium price in €/MWh shall be determined by a RAE Decision, upon recommendation by the HETS Operator.

5. In case that the calculation of the Balancing Energy Prices is impossible, in particular due to an Emergency Situation, or a failure of the Balancing Market System or the other electronic systems of the HETS Operator, the HETS Operator shall apply the procedure provided for in the “Settlement Rules in the event of Suspension of market activities”.

Article 87. Calculation of charges and credits for Balancing Energy

1. The charge or credit of the Balancing Service Providers for each Balancing Service Entity they represent, for each manual FRR Activated Balancing Energy or for activated energy for non-balancing purposes following a Relevant Dispatch Instruction is determined for each direction according to following table:

	Positive Balancing Energy Price	Negative Balancing Energy Price
Upward Balancing Energy	Payment by a Clearing House to a Balancing Service Provider	Payment by a Balancing Service Provider to a Clearing House
Downward Balancing Energy	Payment by a Balancing Service Provider to a Clearing House	Payment by a Clearing House to a Balancing Service Provider

2. The charge or credit of the Balancing Services Providers for each Balancing Service Entity, e, representing, per each Imbalances Settlement Period, t, for the activated Manual FRR Balancing Energy is calculated as follows:

1) For the activated Upward Manual FRR Balancing Energy as the product of the amount of the quantity of activated Upward Manual FRR Balancing Energy multiplied by the Upward Balancing Energy Price for manual FRR for the Bidding Zone z, to which the 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 charge or credit in € for the activated Upward Manual FRR Balancing Energy for the Balancing Services Entity e and the Imbalances Settlement Period t.

$ABE_{e,t}^{mFRR,up}$ The Upward Activated Manual FRR Balancing Energy in MWh for the Balancing Service Entity e and Imbalances Settlement Period t.

$BEP_{z,t}^{up}$ The Upward Manual FRR Balancing Energy Offer of the Bidding Zone z, in €/MWh to which the Balancing Service Entity e belongs .

2) For the activated Downward Manual FRR Balancing Energy as the product of the amount of the quantity of activated Downward Manual FRR Balancing Energy multiplied by the Downward Balancing Energy Price for manual FRR for the Bidding Zone z, to which the 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 charge or credit in € for the activated Downward Manual FRR Balancing Energy for the Balancing Services Entity e and the Imbalances Settlement Period t.

$ABE_{e,t}^{mFRR,dn}$ The Downward Activated Manual FRR Balancing Energy in MWh for the Balancing Service Entity e and Imbalances Settlement Period t.

$BEP_{z,t}^{dn}$ The Downward Manual FRR Balancing Energy Offer of the Bidding Zone z, in €/MWh to which the Balancing Service Entity e belongs .

3. The charge or credit of the Balancing Services Providers for each Balancing Service Entity, e, they represent, per each Imbalances Settlement Period, t, for the activated energy for non-balancing purposes, is calculated as follows:

1) as the sum, for each step, of the products of the quantity of upward activated energy of the step multiplied by the price of the corresponding step of Upward Manual FRR Balancing Energy for the respective Entity.

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

Where:

$AOEC_{e,t}^{mFRR,up}$ The charge or credit in € for the activated Upward Balancing Energy for non-balancing purposes for the Balancing Services Entity e and the Imbalances Settlement Period t.

$mFRRQ_{e,as,t}^{up}$ the segment, as, of step, s, in MWh of the upward Manual FRR Balancing Energy Offer validated at the Balancing Services Entity, e, for the Imbalances Settlement Period,t .

$OPBE_{e,s,t}^{mFRR,up}$ the price in €/MWh of step s of the upward Manual FRR Balancing Energy Offer of the Balancing Services Entity e for the Imbalances Settlement Period,t.

2) as the sum, for each step, of the products of the quantity of downward activated energy of the step multiplied by the price of the corresponding step of Downward Manual FRR Balancing Energy for the respective Entity.

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

Where:

$AOEC_{e,t}^{mFRR,dn}$ The charge or credit in € for the activated downward Manual FRR Balancing Energy for the Balancing Services Entity e and the Imbalances Settlement Period t.

$mFRRQ_{e,as,t}^{dn}$ the segment, as, of step, s, in MWh of the downward Manual FRR Balancing Energy Offer validated at the Balancing Services Entity, e, for the Imbalances Settlement Period,t .

$OPBE_{e,s,t}^{mFRR,dn}$ the price in €/MWh of step s of the downward Manual FRR Balancing Energy Offer of the Balancing Services Entity e for the Imbalances Settlement Period,t.

4. The charge or credit of the Balancing Services Providers for each Balancing Service Entity they represent, per each Imbalances Settlement Period for the activated upward automatic FRR Balancing Energy is calculated as the product:

1) of the quantity of activated upward automatic FRR Balancing Energy of the Balancing Service Entity during the Imbalances Settlement Period, multiplied by

2) the maximum value between the upward Manual FRR Balancing Energy Price and the Automatic FRR Balancing Energy Offer Price of the Balancing Services Entity corresponding to the quantity of activated Upward Automatic FRR Balancing Energy of the Balancing Services Entity during the Imbalances

Settlement Period. If the Upward Manual FRR Balancing Energy Price has not been calculated, then the relative price of the Automatic FRR Balancing Energy Offer of the Balancing Services Entity shall be used.

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

Where:

$ABEC_{e,t}^{aFRR,up}$ The charge or credit for the activated Upward Automatic FRR Balancing Energy for the Balancing Services Entity e and the Imbalances Settlement Period t.

$ABE_{e,t}^{aFRR,up}$ the activated Upward Automatic FRR Balancing Energy for the Balancing Services Entity e and the Imbalances Settlement Period t.

$BEP_{z,t}^{up}$ The upward manual FRR Balancing Energy Price for the Bidding zone z and the Imbalances Settlement Period t. The Bidding Zone z is the zone in which the Balancing Services Entity e is located.

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

5. The charge or credit of the Balancing Services Providers for each Balancing Service Entity they represent, per each Imbalances Settlement Period for the activated downward automatic FRR Balancing Energy is calculated as the product:

   1) of the quantity of activated downward automatic FRR Balancing Energy of the Balancing Service Entity during the Imbalances Settlement Period, multiplied by

   2) the minimum value between the downward Manual FRR Balancing Energy Price and the Automatic FRR Balancing Energy Offer Price of the Balancing Services Entity. If the downward Manual FRR Balancing Energy Price has not been calculated, then the Automatic FRR Balancing Energy Offer Price of the Balancing Services Entity shall be used.

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

Where:

$ABEC_{e,t}^{aFRR,dn}$ The charge or credit for the activated downward Automatic FRR Balancing Energy for the Balancing Services Entity e and the Imbalances Settlement Period t.

$ABE_{e,t}^{aFRR,dn}$ the activated downward Automatic FRR Balancing Energy for the Balancing Services Entity e and the Imbalances Settlement Period t.

$BEP_{z,t}^{dn}$ the downward manual FRR Balancing Energy Price for the Bidding zone z and the Imbalances Settlement Period t. The Bidding Zone z is the zone in which the Balancing Services Entity e is located.

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

6. The Contracted Units offering Supplementary System Energy are paid in accordance with the terms and conditions of the relevant Supplementary System Energy Contract.

Article 88. Imbalances Price Calculation

1. The price at which the imbalances are cleared (in EUR/MWh) per Imbalance Settlement Period is calculated as follows:

   1) The Imbalances Price, IP_t , is calculated for an Imbalances Settlement Period *t* as the weighted average price of all of the activated quantities of upward and downward Balancing Energy Offers (for manual and automatic FRR) for this Imbalances Settlement Period. The above weighted average price is calculated as the quotient of the total cost of balancing energy (upward and downward manual FRR, upward and downward automatic FRR) divided by the algebraic sum of the balancing energy quantities. The Imbalances Price, IP_t , always gets a positive value and is calculated as the absolute value of the following formula:

$$IP_t = \left| \frac{\sum_e ABEC_{e,t}^{mFRR,up} + \sum_e ABEC_{e,t}^{aFRR,up} + \sum_e ABEC_{e,t}^{mFRR,dn} + \sum_e ABEC_{e,t}^{aFRR,dn}}{\sum_e ABE_{e,t}^{mFRR,up} + \sum_e ABE_{e,t}^{aFRR,up} + \sum_e ABE_{e,t}^{mFRR,dn} + \sum_e ABE_{e,t}^{aFRR,dn}} \right|$$

   2) In the event that for an Imbalances Settlement Period t neither upward nor downward Balancing Energy was activated, the Imbalances Price is equal to the value of the avoided Balancing Energy activation and is calculated as the mean value of the following:

      i. the lower Upward Balancing Energy Offer price for either manual or automatic FRR for the specific Imbalances Settlement Period and

      ii. the higher Downward Balancing Energy Offer price for either manual or automatic FRR for the specific Imbalances Settlement Period.

2. Upon proposal by the HETS Operator and a decision of RAE, an Administratively Defined Imbalances Price Cap may be set. The Administratively Defined Imbalances Price Cap that can be applied in the case that due to the simultaneous activation of upward and downward balancing energy in an Imbalance Settlement Period, the Imbalances Price is much higher than the most expensive activated Balancing Energy Offer. Any deficit resulting from the Imbalances Settlement due to the application of the Administratively Defined Imbalances Price Cap is covered by the Premium Account 3 and is allocated and borne by the Balance Responsible Parties, as set forth in Article 95 of this Regulation.

3. In case that the calculation of the Imbalances Prices is impossible, in particular due to an Emergency Situation, or a failure of the Balancing Market System or the other electronic systems of the HETS Operator, the HETS Operator shall apply the procedure provided for in the "Settlement Rules in the event of Suspension of market activities".

Article 89. Calculation of Charges and Credits from the Imbalances Settlement

1. The Imbalances Settlement is the process by which the Balance Responsible Parties are charged or credited for the imbalances they cause. The Imbalances Settlement is initially performed per Balance Responsible Entity and then per Balance Responsible Party.

2. The Imbalance Amount in € for an Imbalances Settlement Period t and Balancing Services Entity or Balance Responsible Entity e is calculated as the Final Imbalance, $FIMB_{e,t}$, in MWh, as calculated according to Article 85, multiplied by the relative Imbalance Price, IP_t , in €/MWh as calculated according to Article 88. Analytically:

   i. In the case that the System Imbalance is non-zero:

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

   ii. In the case that the System Imbalance is zero:

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

   Where

   $IMBC_{e,t}$ the Imbalances charge or credit in € for the Balancing Services Entity or the Balance Responsible Entity *e* and the Imbalances Settlement Period t.

   $FIMB_{e,t}$ the Final Imbalance quantity, $FIMB_{e,t}$, in MWh for the Balancing Services Entity or the Balance Responsible Entity *e* and the Imbalances Settlement Period t.

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

   RP_t the weighted average settlement price in €/MWh of the Day-Ahead Market for all Bidding zones z for the respective Market Time Unit, that is, the Market Time Unit within which the Imbalances Settlement Period is located.

3. When the Imbalance amount is estimated to be negative, the Balance Responsible Entity is required to pay the calculated amount. When the Imbalance amount is estimated to be positive, the Balance Responsible Entity is entitled to collect the calculated amount.

4. The Imbalance amount calculated for RES Units without Market Participation Obligation is credited to DAPEEP.

BALANCING CAPACITY SETTLEMENT

Article 90. Calculation of Balancing Capacity Quantity Supplied

1. The Balancing Capacity Settlement Period is set equal to the Imbalances Settlement Period. In order to match the ISP Dispatch Period with Imbalances 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 Imbalances Settlement Period, the upward and downward Balancing Capacity provided for provided for FCR, automatic FRR and manual FRR results taking into account:

   i. The parts of the individual steps of the Balancing Capacity Bid that have been validated on the basis of the latest ISP performance, the solution time limit of which includes the specific Imbalances Settlement Period.

   ii. the availability in MW of the Balancing Services Entity for the provision of the service in real time.

   iii. the percentage of the time period within an Imbalances Settlement Period in which the Balancing Service Entity was available for the provision of real-time upward FCR.

3. The provided upward and downward Balancing Capacity for FCR by the Balancing Service Entity e for the Imbalances Settlement Period t is calculated as follows:

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

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

where:

$FCRQ_{e,t}^{up}$ the supplied upward FCR Balancing Capacity in MW,, by the Balancing Services Entity e for the Imbalances Settlement Period *t*,

$FCRQ_{e,as,t}^{up}$ the segment, as, of step, s, in MW of the upward FCR Balancing Capacity Bid validated at the Balancing Services Entity, e, for the Dispatch Period which includes the Imbalances Settlement Period, t, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$T_{e,t}^{FCR,up}$ the percentage of the time period within an Imbalances Settlement Period *t* in which the Balancing Service Entity *e* was available for the provision of real-time upward FCR,

$FCRQ_{e,t}^{dn}$ the supplied upward Balancing Capacity for FCR in MW,, by the Balancing Services Entity *e* for the Imbalances Settlement Period *t*,

$FCRQ_{e,as,t}^{dn}$ the segment, as, of step, s, in MW of the downward FCR Balancing Capacity Bid validated at the Balancing Services Entity, e, for the Dispatch Period which includes the Imbalances Settlement Period, t, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$T_{e,t}^{FCR,dn}$ the percentage of the time period within an Imbalances Settlement Period *t* in which the Balancing Service Entity *e* was available for the provision of real-time downward FCR.

4. The provided upward and downward Balancing Capacity for manual FRR by the Balancing Service Entity e for the Imbalances Settlement Period t is calculated as follows:

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

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

where:

$mFRRQ_{e,t}^{up}$ the supplied upward Balancing Capacity for manual FRR in MW,, by the Balancing Services Entity *e* in real time, for the Imbalances Settlement Period *t*,

$mFRRQ_{e,as,t}^{up}$ the segment, as, of step, s, in MW, of the upward manual FRR Balancing Capacity Bid validated at the Balancing Services Entity, e, for the Dispatch Period which includes the Imbalances Settlement Period, t, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

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

$mFRRQ_{e,t}^{dn}$ the supplied downward Balancing Capacity for manual FRR in MW,, by the Balancing Services Entity *e* in real time, for the Imbalances Settlement Period *t*,

$mFRRQ_{e,as,t}^{dn}$ the segment, as, of step, s, in MW, of the downward manual FRR Balancing Capacity Bid validated at the Balancing Services Entity, e, for the Dispatch Period which includes the Imbalances Settlement Period, t, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$T_{e,t}^{mFRR,dn}$ the percentage of the time period within an Imbalances Settlement Period t in which the Balancing Service Entity *e* was available for the provision of real-time downward manual FRR,

5. The provided upward and downward Balancing Capacity for automatic FRR, in MW, by the Balancing Service Entity e for the Imbalances Settlement Period t is calculated as follows:

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

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

where:

$aFRRQ_{e,t}^{up}$ the supplied upward Balancing Capacity for automatic FRR in MW,, by the Balancing Services Entity *e* in real time, for the Imbalances Settlement Period *t*,

$aFRRQ_{e,as,t}^{up}$ the segment, as, of step, s, in MW, of the upward automatic FRR Balancing Capacity Bid validated at the Balancing Services Entity, e, for the Dispatch Period which includes the Imbalances Settlement Period, t, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$T_{e,t}^{mFRR,up}$ the percentage of the time period within an Imbalances Settlement Period t in which the Balancing Service Entity e was available for the provision of real-time upward automatic FRR,

$aFRRQ_{e,t}^{dn}$ the supplied downward Balancing Capacity for automatic FRR in MW,, by the Balancing Services Entity e in real time, for the Imbalances Settlement Period t,

$aFRRQ_{e,as,t}^{dn}$ the segment, as, of step, s, in MW, of the downward automatic FRR Balancing Capacity Bid validated at the Balancing Services Entity, e, for the Dispatch Period which includes the Imbalances Settlement Period, t, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$T_{e,t}^{aFRR,dn}$ the percentage of the time period within an Imbalances Settlement Period t in which the Balancing Service Entity *e* was available for the provision of real-time downward automatic FRR,

Article 91. Calculation of Balancing Power Remuneration

1. For each Balancing Service Entity and for each Imbalances Settlement Period, the remuneration for the upward and downward Balancing Capacity supplied for FCR, automatic, and manual FRR, results by taking into account the upward or downward Balancing Capacity supplied and the price of the respective Balancing Capacity Bid step, that have been validated on the basis of the last performance of the ISP, the solution time period of which includes the specific Imbalances Settlement Period.

2. The remuneration of the Balancing Services Entity e for the Balancing Capacity supplied for Upward and Downward FCR, automatic FRR, and Manual FRR in the Imbalances Settlement Period t, respectively, is calculated as follows:

$$FCRC_{e,t}^{up} = \sum_{s}\sum_{as}\left(FCRQ_{e,as,t}^{up} \times OP_{e,s,t}^{FCR,up}\right)$$

$$FCRC_{e,t}^{dn} = \sum_{s}\sum_{as}\left(FCRQ_{e,as,t}^{dn} \times OP_{e,s,t}^{FCR,dn}\right)$$

$$mFRRC_{e,t}^{up} = \sum_{s}\sum_{as}\left(mFRRQ_{e,as,t}^{up} \times OP_{e,s,t}^{mFRR,up}\right)$$

$$mFRRC_{e,t}^{dn} = \sum_{s}\sum_{as}\left(mFRRQ_{e,as,t}^{dn} \times OP_{e,s,t}^{mFRR,dn}\right)$$

$$aFRRC_{e,t}^{up} = \sum_{s}\sum_{as}\left(aFRRQ_{e,as,t}^{up} \times OP_{e,s,t}^{aFRR,up}\right)$$

$$aFRRC_{e,t}^{dn} = \sum_{s}\sum_{as}\left(aFRRQ_{e,as,t}^{dn} \times OP_{e,s,t}^{aFRR,dn}\right)$$

where:

$FCRC_{e,t}^{up}$ the remuneration in € of the Balancing Services Entity e for the upward FCR Balancing Capacity supplied in the Imbalances Settlement Period t,

$FCRC_{e,t}^{dn}$ the remuneration in € of the Balancing Services Entity e for the downward FCR Balancing Capacity supplied in the Imbalances Settlement Period t,

$mFRRC_{e,t}^{up}$ the remuneration in € of the Balancing Services Entity e for the upward manual FRR Balancing Capacity supplied in the Imbalances Settlement Period t,

$mFRRC_{e,t}^{dn}$ the remuneration in € of the Balancing Services Entity e for the downward manual FRR Balancing Capacity supplied in the Imbalances Settlement Period t,

$aFRRC_{e,t}^{up}$ the remuneration in € of the Balancing Services Entity e for the upward automatic FRR Balancing Capacity supplied in the Imbalances Settlement Period t,

$aFRRC_{e,t}^{dn}$ the remuneration in € of the Balancing Services Entity e for the downward automatic FRR Balancing Capacity supplied in the Imbalances Settlement Period t,

$OP_{e,s,t}^{FCR,up}$ the price in €/MW of step s, of the upward FCR Balancing Capacity Bid of the Balancing Services Entity, e, that has been validated, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$OP_{e,s,t}^{FCR,dn}$ the price in €/MW of step s, of the downward FCR Balancing Capacity Bid of the Balancing Services Entity, e, that has been validated, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$OP_{e,s,t}^{aFRR,up}$ the price in €/MW of step s, of the upward automatic FRR Balancing Capacity Bid of the Balancing Services Entity, e, that has been validated, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$OP_{e,s,t}^{aFRR,dn}$ the price in €/MW of step s, of the downward automatic FRR Balancing Capacity Bid of the Balancing Services Entity, e, that has been validated, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

$OP_{e,s,t}^{mFRR,up}$ the price in €/MW of step s, of the upward manual FRR Balancing Capacity Bid of the Balancing Services Entity, e, that has been validated, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t, and

$OP_{e,s,t}^{mFRR,dn}$ the price in €/MW of step s, of the downward manual FRR Balancing Capacity Bid of the Balancing Services Entity, e, that has been validated, based on the last performance of the ISP, the solution time limit of which includes the specific Imbalances Settlement Period t.

3. The total remuneration of all the Balancing Services Entities e for the Balancing Capacity supplied for Upward and Downward FCR, automatic FRR, and Manual FRR during the Imbalances Settlement Period t, is calculated as follows:

$$BALCAP_t = \sum_e FCRC_{e,t}^{up} + \sum_e FCRC_{e,t}^{dn} + \sum_e mFRRC_{e,t}^{up} + \sum_e mFRRC_{e,t}^{dn} + \sum_e aFRRC_{e,t}^{up} + \sum_e aFRRC_{e,t}^{dn}$$

where:

$BALCAP_t$ the total remuneration of all the Balancing Services Entities e for the Balancing Capacity supplied for Upward and Downward FCR, automatic FRR, and Manual FRR in the Imbalances Settlement Period t.

4. In the event that the calculation of the offer prices is impossible, in particular due to an Emergency Situation, or a 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", approved by RAE, upon recommendation by the Operator according to the provisions of par. 4 of Article 18 of Law 4425/2016.

CHAPTER 19

CHAPTER 20

PREMIUM ACCOUNTS

Article 92. HETS Operator Premium Accounts

The Premium Account includes the following individual accounts:

1) PA-1: System Losses Premium Account
2) PA-2: Balancing Capacity Premium Account
3) PA-3: Financial Neutrality Premium Account

Article 93. PA-1 System Losses Premium Account

1. The PA-1 System Losses Premium Account shall be used to allocate the HETS losses cost, which is calculated as the sum of the amounts resulting from the settlement of the Day Market, the settlement of the Intraday Market and the Imbalances Settlement for these losses.

2. The cost of the HETS losses shall be allocated to and borne by the Balance Responsible Parties according to the measured offtake of their customers in 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 the HETS Losses, in € as it results from the settlement of the Day-Ahead Market, the settlement of the Intraday Market and the Imbalances Settlement for these losses for the Imbalances Settlement Period *t*,

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

Article 94. PA-2 Balancing Capacity Premium Account

1. The PA-2 Balancing Capacity Premium Account shall be used to allocate the cost of the Balancing Capacity supply by the Balancing Services Providers.

2. The cost of the Balancing Capacity supply for each Imbalances Settlement Period t, BALCAPt, shall be allocated to and borne by the Balance Responsible Parties according to the measured 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 the Balancing Services Entities e for the Balancing Capacity supplied for Upward and Downward FCR, automatic FRR, and Manual FRR for the Imbalances Settlement Period t.

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

Article 95. PA-3 Financial Neutrality Premium Account

1. The PA-3 Financial Neutrality Premium Account shall be used to allocate to Balance Responsible Parties any remaining balance after the calculation of the charges and the credits calculated by the HETS Operator for the manual FCR balancing capacity, the automatic FRR balancing capacity, the energy for non-balancing and clearing purposes.

2. The amount ensuring the financial neutrality of the HETS Operator in each Imbalances Settlement Period t, NEUTRt, is calculated as follows:

$$NEUTR_t = \sum_e ABEC_{e,t}^{mFRR,up} + \sum_e ABEC_{e,t}^{aFRR,up} + \sum_e AOEC_{e,t}^{mFRR,up}$$
$$+ \sum_e ABEC_{e,t}^{mFRR,dn} + \sum_e ABEC_{e,t}^{aFRR,dn} + \sum_e AOEC_{e,t}^{mFRR,dn} + \sum_p IMBC_{p,t}$$

where:

$NEUTR_t$ the amount ensuring the financial neutrality of the HETS Operator for the Imbalances Settlement Period t,

$ABEC_{e,t}^{mFRR,up}$ the charge or credit of the Balancing Services Entity e, for the Imbalances Settlement Period t, for the activated Upward manual FRR Balancing Energy.

$ABEC_{e,t}^{aFRR,up}$ the charge or credit of the Balancing Services Entity e, for the Imbalances Settlement Period t, for the activated Upward automatic FRR Balancing Energy.

$AOEC_{e,t}^{mFRR,up}$ the charge or credit of the Balancing Services Entity e, for the Imbalances Settlement Period t, for the activated Upward Energy supplied for non-balancing purposes.

$ABEC_{e,t}^{mFRR,dn}$ the charge or credit of the Balancing Services Entity e, for the Imbalances Settlement Period t, for the activated Downward manual FRR Balancing Energy.

$ABEC_{e,t}^{aFRR,dn}$ the charge or credit of the Balancing Services Entity e, for the Imbalances Settlement Period t, for the activated Downward automatic FRR Balancing Energy.

$AOEC_{e,t}^{mFRR,dn}$ the charge or credit of the Balancing Services Entity e, for the Imbalances Settlement Period t, for the activated Downward Energy supplied for non-balancing purposes.

$IMBC_{p,t}$ the charge or credit for imbalances of the Balance Responsible Entity, p, for the Imbalances Settlement Period, t. The imbalances for the HETS Losses are included.

3. The cost for ensuring the financial neutrality of the HETS Operator , $NEUTR_t$, for each Imbalances Settlement Period *t* , shall be allocated to and borne by the Balance Responsible Parties, p, according to the measured 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 Imbalances Settlement Period t,

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

CHAPTER 21

NON-COMPLIANCE CHARGES

Article 96. Consequences of Illegal submission of Non-Availability Declarations

1. In the event of non-submission or in the event of an unlawful submission of a Non-Availability Declaration for a Balancing Service Entity *e* as defined in Article 46, the HETS Operator shall impose on the respective Balancing Service Provider a charge for month m equal to $NCAV_{e,m}$, and it is 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} premium coefficient which may vary per category of Balancing Services Entity,

NAV_e the number of Dispatch Days within the calendar month during which the Balancing Services Provider *p* has not submitted or has unlawfully submitted a Non-Availability Declaration for the Balancing Service Entity it represents and which has maximum value equal to $NAV_{\max}$,

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

x exponential factor between 0 and 1, and

$NACAP_{e,d}$ the Capacity of the Balancing Services Entity *e*, in accordance with the Registered Operating Characteristics, which was not available and for which the Balancing Service Provider has not submitted or has unlawfully submitted a Non-Availability Declaration for the Dispatch Day *d*.

2. The numerical values of the unitary charge $UNCAV$, the maximum value of the serial counter $NAV_{\max}$, the exponential coefficient 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 of a Balancing Service Entity *e* according to Article 51, the HETS Operator shall impose on the respective Balancing Service Provider a charge for month m equal to $NCTD_{e,m}$, and it is 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} premium coefficient which may vary per category of Balancing Services Entity,

NTD_e the number of Dispatch Days during the current calendar month m, during which the Balancing Services Provider has not submitted or has unlawfully submitted Techno-Economic Declarations for the Balancing Service Entity e, it represents, and which has maximum value equal to $NTD_{\max}$,

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

x exponential factor between 0 and 1, and

$NSCAP_{e,d}$ the Capacity of the Balancing Services Entity *e*, in accordance with its Registered Operating Characteristics, for which the Participant has not submitted or has unlawfully submitted a Techno-Economic Declaration for the 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 Manual FRR or automatic FRR Balancing Energy Offers for a Balancing Service Entity *e* for a Manual FRR Time Unit t, of month m, if the respective Balancing Service Provider is under a relevant obligation, the HETS Operator shall charge the Balancing Service Provider for month m, with the amount calculated as follows:

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

where:

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

A_{BEO} a coefficient, the value of which depends on the number of the manual FRR Time Unit, *t*, during which the Balancing Service Provider has not submitted or has unlawfully submitted Balancing Energy Offers for the Balancing Services Entity *e*, during one month,

$NBEO_e$ the number of Manual FRR Time Units within the calendar month, during which the Balancing Services Provider has not submitted or has unlawfully submitted Balancing Energy Offers for its Balancing Service Entity e and which has maximum value equal to $NBEO_{\max}$,

x exponential factor between 0 and 1,

$BEOO_{e,t}^{up}$ the Energy quantity for which the Balancing Service Provider has not submitted or has unlawfully submitted an upward Manual or Automatic FRR Balancing Energy Offer for the Balancing Services Entity *e* for the Manual FRR Time Unit *t*, although it had the relative obligation in MWh, and

$BEOO_{e,t}^{dn}$ the Energy quantity for which the Balancing Service Provider has not submitted or has unlawfully submitted an downward Manual or Automatic FRR Balancing Energy Offer for the Balancing Services Entity *e* for the Manual FRR Time Unit *t*, although it had the relative obligation in MWh.

2. The numerical values of the unitary charge $UNCBEO$, the maximum value of the serial counter $NBEO_e$, the exponential factor x, and the coefficient A_{BEO}, 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 not submitting Balancing Capacity Bids

1. In the event of non-submission or unlawful submission of FCR, Manual FRR, and

automatic FRR Balancing Energy Offers for a Balancing Service Entity *e* for a Dispatch Day *d*, if the respective Balancing Service Provider is under a relevant obligation, the HETS Operator shall charge the Balancing Service Provider, for month m, with the amount calculated as follows:

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

where:

$UNCRO$ the unitary Non-Compliance Charge for unlawful Submission of Balancing Capacity Bids in €/MWh,

A_{RO} a coefficient, the value of which depends on the number of the Imbalances Settlement Period, *t*, during which the Balancing Service Provider has not submitted or has unlawfully submitted Balancing Capacity Bids for the Balancing Services Entity *e*, during one month,

NRO_e the number of Dispatch Days within the calendar month, during which the Balancing Services Provider has not submitted or has unlawfully submitted Balancing Capacity Bids for its Balancing Service Entity *e* and which has maximum value equal to $^{p}\ NRO_{\max}$,

$NRO_{\max}$ the maximum values of NRO_e,

x exponential factor between 0 and 1,

$DFCR_e$ the ability of the Balancing Services Entity *e* to supply FCR Balancing Energy in accordance with its Declared Characteristics for which the Balancing Services Provider has not submitted or has unlawfully submitted a FCR Balancing Capacity Bid for the Dispatch Day d,

$DaFRR_e$ the ability of the Balancing Services Entity *e* to supply automatic FRR Balancing Energy in accordance with its Declared Characteristics for which the Balancing Services Provider has not submitted or has unlawfully submitted an automatic FRR Balancing Capacity Bid for the Dispatch Day d, and

$DmFRR_e$ the ability of the Balancing Services Entity *e* to supply manual FRR Balancing Energy in accordance with its Declared Characteristics for which the Balancing Services Provider has not submitted or has unlawfully submitted a manual FRR Balancing Capacity Bid for the Dispatch Day d,

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

Article 100. Consequences of significant imbalance in the supply of Upward or Downward Balancing Energy or Energy for Non-Balancing purposes by a Balancing Services 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 non-Balancing purposes by a Balancing Services Entity, e, if the energy supplied by the Balancing Services Entity e is significantly different from the energy activated under the Dispatch Instruction, the HETS Operator imposes on the respective Balance Responsible Provider for the Imbalances

Settlement Period *t*, a charge, which is equal to $NCNPBE_{e,t}$ and calculated as follows:

If $|INST_{e,t} - MQ_{e,t}| > TOL^{up}_{BE,e} \times |INST_{e,t} - MS_{e,t}|$ then:

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

where:

$UNCNPBE$ the unitary Non-Compliance Charge for significant imbalance in the supply of Upward or Downward Balancing Energy or Energy for Non-Balancing purposes by a Balancing Services Entity they represent in €/MWh,

A_{NPBE} a coefficient, the price of which depends on the number of Imbalances Settlement Periods, *t*, during which a significant imbalance was observed, during the calendar month.

MQ_{et} the measured energy of the Balancing Services Entity e for the Imbalances Settlement Period t adjusted to the HETS Losses and the Distribution Network Losses, in MWh,

TOL_{be} the margin of tolerance for imposing Non-Compliance Charges on Balancing Services Providers for a significant deviation in the supply of Upward or Downward Balancing Energy or Energy for non-balancing purposes, in percent (%). The above tolerance margin may be different per Balancing Services Entity,

MS_{pt} the Market Schedule per Balancing Services Entity e for the Imbalances Settlement Period t, in MWh,

$INST_{e,t}$ the Instructed Energy of the Balancing Services Entity e for an Imbalances Settlement Period *t*

2. A significant imbalance is considered to be the imbalance exceeding the relevant 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 101. Consequences of significant systematic demand imbalances

1. In the case of systematic, within the calendar month m, significant imbalances between the amount of energy measured in all energy meters represented by a Load Representative p in an Imbalances Settlement Period and the corresponding Market Schedules of the same Load Representative, the HETS Operator shall charge the Load Representative with an amount equal to $NCBAL_{p,m}$ and shall be calculated on the basis of total absolute imbalances within the month *m* and the active value of the imbalances within the month *m*.

2. As significant imbalance is considered to be the normalized absolute imbalance for month m, which exceeds the tolerance margin $TOL_{ld,ADEV}$ or the normalized active value of the imbalances for month m exceeds the tolerance margin $TOL_{ld,RMSDEV}$.

3. The imbalance for each Imbalances Settlement Period t, $DEV_{p,t}$ the monthly absolute imbalance for month m, $ADEV_{p,m}$, the normalized absolute imbalance for month m, $NADEV_{p,m}$ the monthly active value of the imbalances, $RMSDEV_{p,m}$ and the normalized

active value for month m $NRMSDEV_{p,m}$, for the Load Representative p are defined as follows:

$$DEV_{p,t} = MS_{pt} + \sum_{e \in p}\left(ABE_{et}^{up} - ABE_{et}^{dn}\right) - MQ_{pt}$$

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

$$NADEV_{p,m} = \frac{ADEV_{p,m}}{\sum_{t \in m}\left(MS_{p,t} + \sum_{e \in p}\left(SBE_{e,t}^{up} - SBE_{e,t}^{dn}\right)\right)}$$

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

$$NRMSDEV_{p,m} = \frac{RMSDEV_{p,m}}{\sum_{t \in m}\left(MS_{pt} + \sum_{e \in p}\left(ABE_{et}^{up} - ABE_{et}^{dn}\right)\right)}$$

where:

$DEV_{p,t}$ the deviation from the Market Schedule, adjusted for each upward or downward Balancing Energy of the Dispatchable Load Portfolios represented by a Load Representative p for the Imbalances Settlement Period t

MS_{pt} The Market Schedule of the Load Representative p for the Imbalances Settlement Period t,

ABE_{et}^{up}, ABE_{et}^{dn} the activated upward or downward Balancing Energy of the Dispatchable Load Portfolios represented by a Load Representative p for the Imbalances Settlement Period t, and

MQ_{pt} the offtake (calculated at the Production Unit Metering Point) of the Load Representative p for the Imbalances Settlement Period t adjusted to the HETS Losses and the Distribution Losses.

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

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

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 of the imbalances,

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

$TOL_{ld,RMSDEV}$ the tolerance margins for imposing Non-Compliance Charges to Load Representatives for the monthly normalized active value of the 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 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.

6. No Non-Compliance Charges shall be imposed due to significant systematic imbalances in demand to the Last Resort Provider and the Universal Service Provider and solely for the demand they represent in such capacity.

Article 102. Consequences of significant systematic imbalances in the actual production of the Non-Dispatchable RES Portfolios

1. In the event of a significant imbalance, within the calendar month m, between the amount of energy generated from the Non-Dispatchable RES Portfolio in an Imbalances Settlement Period and the corresponding Market Schedule of the Balancing Services Entity *e*, the HETS Operator shall charge the respective Participant with an amount equal to $NCBALR_{e,m}$ and is calculated based on the total absolute imbalances within the month m and the active value of the imbalances within the month *m*.

2. As significant imbalance is considered to be the case where the normalized absolute imbalance for 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 imbalance for each Imbalances Settlement Period t, $DEV_{e,t}$ the monthly absolute imbalance for month m, $ADEV_{e,m}$, the normalized absolute imbalance for month m, $NADEV_{e,m}$, the monthly active value of the imbalances, $RMSDEV_{e,m}$, and the normalized active value for month m $NRMSDEV_{e,m}$, for the Balancing Services Entity e are defined as follows:

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

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

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

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

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

where:

$DEV_{e,t}$ the Market Schedule deviation of the Balancing Services Entity e for the Imbalances Settlement Period t,

MS_{et} the Market Schedule per Balancing Services Entity e for the Imbalances Settlement Period t, and,

MQ_{et} the generated energy of the Balancing Service Entity e for the Imbalances Settlement Period t adjusted to the HETS Losses and the Distribution Losses.

4. The monthly charge corresponding to the Balancing Services Entity e for the month *m* is 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 non-normalized active value of the imbalances,

$TOL_{r,ADEV}$ 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 of the imbalances.

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 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 103. Non-Compliance Charge for import/export deviations

1. In the event of a difference between the Market Schedule concerning 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 charge the corresponding Participant for each Imbalances Settlement Period, with an amount 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 a difference between the Market Schedule concerning imports/exports of a Participant and the corresponding implemented Schedule for the import/export of electricity through an interconnection, the HETS Operator shall charge the corresponding Participant for each Imbalances Settlement Period, with an amount equal to the absolute value of the above deviation multiplied by the unitary charge for Cross-border Trade Imbalance *UNCIR* for imports and *UNCER* 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 104. Non-Compliance Charge for infeasible Market Schedule

1. In the event that the Market Schedule of a Balancing Service Provider is not feasible, based on its Declared Characteristics, the respective Participant shall be charged for each Market Time Period in which the infringement is established. Particularly for the Dispatchable Production Units, an infeasible Market Schedule is:
   1) the Market Schedule, which is lower than the Technical Minimum Production, based on the Unit's Declared Characteristics, unless the Unit is in the phase of synchronization or de-synchronization.
   2) the Market Schedule, which is greater than the Technical Minimum Production, based on the Unit's Declared Characteristics.
   3) Market Schedules in consecutive Market Time Periods that are not feasible based on the declared upward or downward rate of the Production Unit.
2. In the event of infeasible Market Schedule of a Balancing Service Entity e, the HETS Operator shall charge the respective Balancing Service Provider for month m, for each Market Time Period, with an amount equal to $NCNAMS_{e,m}$, that it is calculated as follows:

$$NCNAMS_{e,m} = \sum_{t \in m} UNCNAMS \times (1 + A_{NAMS}) \times \Delta(MS_{e,t})$$

where:

$UNCNAMS$ the unitary Non-Compliance Charge for infeasible Market Schedule in €/MWh,

A_{NAMS} premium coefficient which may vary per category of Balancing Services Entity,

$\Delta(MS_{e,t})$ The difference in MWh of the Balancing Services Entity's Market Schedule, e, from the feasible level of production or consumption, based on its Declared Characteristics and the Market Schedule of the previous Market Time Period.

3. The numerical values of the unitary charge $UNCNAMS$, and the charge premium coefficient A_{NAMS}, 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. Management of the amount of Non-Compliance Charges

The total amount of Non-Compliance Charges gathered in the Non-Compliance Charges Account is paid to the HETS Operator. The amount gathered in the Non-Compliance Charges Account may be used by the HETS Operator to cover trade deficits or for other purposes upon a relevant Decision by RAE.

CHAPTER 22

BALANCING MARKET SETTLEMENT PROCESS

Article 106. Balancing Market Settlement Process

1. The Balancing Market Settlement Process is implemented on a monthly basis. The clearing months correspond to calendar months. For each Clearing Month, M, four clearings are carried out according to the following timetable:

Initial Clearing	Last day if the month M+1
1st Corrective Clearing	Last day if the month M+7
2nd Corrective Clearing	Last day if the month M+13
Final Corrective Clearing	Last day if the month M+25

2. The Initial and the Corrective Clearings of the Balancing Market shall be performed as follows:

   1) The HETS operator performs the necessary calculations according to SECTION IV. The results of the calculations (Clearing Results) and the relevant Clearing Data are communicated to the Participants concerned via electronic means in accordance with the timetable set out in paragraph 1,

   2) the Participants have the right to submit a reasoned objection to the HETS Operator within two (2) Business Days from the notification of the Clearing Results to the Participants,

   3) The HETS Operator decides on any objections and proceeds to any necessary corrections within four (4) Business Days from the notification of the Clearing Results to the Participants,

   4) The HETS Operator sends the Clearing Results to the Clearing House within five (5) Business Days from the notification of the Clearing Results to the Participants.

3. The Clearing Data, notified to the Balancing Service Providers for the Initial Clearing Performance and for any Corrective Clearing Performance, include the following details:

   1) The name and the ID of the Balancing Services Provider,

   2) The Market Schedule of each Balancing Services Entity,

   3) The Dispatch Instruction of each Balancing Services Entity per Manual FRR Timed Unit,

   4) The measured quantity of Energy of the Balancing Services Entity per Imbalances Settlement Period,

   5) The activated automatic and manual FRR Balancing Energy of the Balancing Services Entity per Imbalances Settlement Period,

   6) The Balancing Capacity supplied by the Balancing Services Entity per Imbalances Settlement Period and per Balancing Capacity Type,

   7) The Imbalances and Imbalances Adjustment Quantities for the Balancing Services Entity per Imbalances Settlement Period,

   8) The charge or credit for Balancing Energy and Balancing Capacity to the Balancing Services Provider for the Balancing Services Entity per Imbalances Settlement Period,

9) The charge or credit to the Balancing Services Provider for Imbalances for the Balancing Services Entity per Imbalances Settlement Period,

10) Any Non-compliance Charge imposed on the Balancing Services Provider per sanction type and Imbalances Settlement Period, and

11) The Balancing Fee corresponding to the Balancing Services Provider.

4. The Clearing Data, notified to the Balance Responsible Parties for the Initial Clearing Performance and for any Corrective Clearing Performance, include the following details:

1) The name and the ID of the Balance Responsible Party,

2) The Market Schedule of each Balance Responsible Entity represented by the Participant per Imbalances Settlement Period,

3) The total measured quantities of energy for all Balance Responsible Entities represented by the Balance Responsible Party per Imbalances Settlement Period,

4) The Imbalance quantity of all Balance Responsible Entities represented by the Balance Responsible Party per Imbalances Settlement Period, and

5) The charge or credit to the Balance Responsible Party for each Imbalances Settlement Period.

5. When performing any Corrective Clearing, the HETS Operator:

1) shall make any necessary adjustment or revision of the measurement data,

2) shall make any necessary adjustment or revision of the data resulting from any Dispute settlement,

3) shall use updated or revised data submitted by the Power Exchange or the Distribution Network Operators,

4) shall use revised Balancing Services data.

6. Any corrections to the Clearing Data are also taken into account in the Clearing Results they are amended on the next set date of the Clearing Process, based on the timetable in paragraph 1. After the Final Corrective Clearing Performance date, no corrections to Clearing Data or Clearing Results can be made, except upon a reasoned request from the Participant or the Participants having a legitimate interest. The request shall be submitted to RAE and the clearing shall be performed again only after its decision.

CHAPTER 23

SPECIAL PROVISIONS

Article 107. Implementation of Special Provisions for the Transactions Clearing in the event that no Clearing House operates in the Balancing Market

In the event that no Clearing House operates, for any reason, for the Balancing Market, according to Article 12 of Law 4425/2016 its powers shall be exercised by the HETS Operator, and the special provisions in accordance with CHAPTER 23 apply.

Article 108. HETS Operator Accounts

The HETS Operator shall keep accounting accounts corresponding to Article 77 of this

Regulation.

Article 109. Invoicing

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

Article 110. Actions of the Operator in case of Overdue Debts of the Participant

1. In case of Overdue Debts of the Participant, the HETS Operator shall take the following actions:
    1) Take all necessary steps to satisfy the arrears of the Participant through the guarantees it has provided.
    2) If the guarantees are insufficient to fully cover the arrears, the HETS Operator shall cover the deficit through the Non-Compliance Charges Account and up to the amount of its balance, and shall take all necessary steps to recover interest on arrears from the Participant with overdue debts, as well as any direct damage it suffered due to late payments.
    3) In the event that the guarantees and the balance in the Non-Compliance Charges Account are not sufficient, the Operator may allocate its cost to the other Participants by offsetting their claims against the Balancing Market. The offset terms and conditions for cost allocation due to overdue debts of the participants shall be set out in the "Offset Methodology".
2. The HETS Operator shall have the right to terminate the Balancing Service Contract and/or the Balance Responsible Party Contract of the Participants who are late in fulfilling their financial obligations in the framework of the Balancing Market, taking into account the interests of the Participants and the safe operation of the electricity market.

Article 111. Provision of Guarantees

1. Each Participant is required, during the validity of the Balancing Service Contract and/or the Balance Responsible Party Contract, to provide full guarantees for the fulfillment of all its obligations arising from its participation in the Balancing Market.
2. The obligation to provide a full guarantee is fulfilled either by submitting a letter of guarantee or by depositing an amount in a special account kept by the HETS Operator or by any other legal manner to which the HETS Operator consents.
3. Especially for the Letters of Guarantee, the Participants fulfill these 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 provided for in the "Methodology of Calculation of Balancing Market Participation Guarantees".

SECTION V

CHAPTER 24

TRANSITIONAL PROVISIONS

Article 112. Commencement of balancing obligations for RES Units with Market Participation Obligation

1. The RES Units Portfolios with Market Participation Obligation acquire balancing obligations in accordance with the more specific terms set out in this Regulation by the development and operation of an Intraday Electricity Market of sufficient liquidity, as defined in Article 5(7) of Law 4414/2016 (Government Gazette A 149). In particular, the commencement of balancing obligations for these units shall be determined by decision of RAE, which shall be taken in the last quarter of the year 2021 and if there is at least one year's data from the operation of the continuous intraday market.

2. Until the date of application of the above paragraph, which is determined by decision of RAE:

   1) the RES Units Portfolios with Market Participation Obligation are mandatorily and per technology declared, and they are subject to the Transitory Mechanism for the Optimal Forecasting Accuracy, as set out in the HETS Operation Code.

   2) The procedure for calculating the Reversal of Revenues Deviation under the HETS operation Code is performed.

   3) Article 102 of this Regulation is not applicable.

ANNEX I

LIST OF TECHNICAL DECISIONS

S/N	Name of Technical Decision	Content of Decision
1	Procedures of registration in Balance Market Registries	Detailed description of application, submission, and registration procedures in the BSP and the BRP Registries.
2	Data Exchange with the Power Exchange	Description of procedures and data to be exchanged with the Power Exchange
3	Data Exchange with Distribution Network Operators	Description of procedures and data to be exchanged with Distribution Network Operators
4	Balancing Market System Rules	Description of the rules of the Balancing Market information system, description of communication standards, etc.
5	Dispatch Instructions	Procedure for issuing and sending Dispatch Instructions
6	Manual FRR	Details on the implementation of the manual FRR.
7	Automatic FRR	Details on the implementation of the automatic FRR
8	Balancing Market Settlement	Details and examples of calculations regarding the clearing of the Balancing Energy Market, the Balancing Capacity Market and the Imbalances.

ANNEX II

LIST OF METHODOLOGIES AND SPECIAL APPROVALS

1	Methodology of Determination of Zonal/Systemic Balancing Capacity Needs	Methodology of 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	Maximum Continuous Generating Capability Calculation Methodology	Maximum Continuous Generating Capability of Production Units or Dispatchable RES Units Portfolios Calculation Methodology.
3	Dispatch Loads Portfolios Reference Load Calculation Methodology.	Dispatch Loads Portfolios Reference Load Calculation Methodology for their clearing
4	Offsetting methodology	Offsetting methodology for allocation of cost due to overdue debts of participants, if a Clearing House does not operate in the market.
5	Balancing Market Participation Guarantee Calculation Methodology	Guarantees Calculation Methodology if a Clearing House does not operate in the market.
6	Activated Balancing Energy Calculation Methodology	Activated Balancing Energy, Adjusted Dispatch Instruction and Adjusted Market Schedule Calculation Methodology.
7	Variable Cost Parameters for Thermal Production Units Calculation Methodology	Variable Cost Parameters for Thermal Production Units Calculation Methodology based on Techno-Economic data
8	HETS Losses Calculation Methodology	Methodology for estimating the HETS Losses based on the table of HETS Losses Coefficients.
9	Terms and Conditions of Balancing Services Providers	Terms and Conditions according to Article 18 of Commission Regulation (EU) 2017/2195. Detailed description of Balancing Services Provider Preselection Procedures.
10	Terms and Conditions of Balance Responsible Parties	Terms and Conditions in accordance with Article 18 of Commission Regulation (EU) 2017/2195.
11	Rules for suspension and restoration of market activities	Rules for suspension and the restoration of market activities in accordance with Article 36 of Commission Regulation (EU) 2017/2196
12	Clearing rules in the event of market activity suspension	Clearing rules in the event of suspension of the 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
CHP	High Performance Combined Heat and Power Generation
Aggregator	Aggregator
Last Resort Aggregator	Last Resort Aggregator
SCADA	Supervisory Control and Data Acquisition System