



METHODOLOGY

Terms and Conditions for Balancing Service Providers

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Article 1

Content of Terms and Conditions for Balancing Service Providers

1. These Terms and Conditions for Balancing Service Providers are issued in accordance with article 2(6), article 2(5), article 11(1), article 12(1), article 13(1) and Annex II to the Balancing Market Rulebook, as well as article 18 of Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing and shall apply to Balancing Service Providers within the control area of the HETS Operator.
2. These Terms and Conditions for Balancing Service Providers shall be approved by decision of RAE, following a proposal by the HETS Operator in accordance with article 18(4) of Law 4425/2016 and the Balancing Market Rulebook. The proposal by the HETS Operator shall be submitted by the Operator for public consultation, which shall last at least one month. The HETS Operator shall duly take into account the views of stakeholders resulting from the consultation before submitting its proposal to RAE. In all cases, a sound justification for including or not including the views resulting from the consultation shall be provided together with the submission of the proposal and published in a timely manner before, or simultaneously with the publication of the proposal.
3. These Terms and Conditions for Balancing Service Providers shall be published at least one month before their implementation and any amendment thereto shall be immediately published upon approval by RAE.
4. These Terms and Conditions for Balancing Service Providers shall form an integral part of the Balancing Market Rulebook and shall be interpreted and shall apply in conjunction with the contents of the Rulebook.
5. The definitions under article 3 of the Balancing Market Rulebook shall also apply to these Terms and Conditions for Balancing Service Providers, unless otherwise expressly provided.

Article 2

Requirements for becoming a Balancing Service Provider

1. In order to become a Balancing Service Provider, the interested party must:
 - (a) observe the rules under these Terms and Conditions for Balancing Service Providers
 - (b) have successfully completed the pre-qualification process set out in article 3 of these Terms and Conditions for the Balancing Service Entity or Entities it represents.
2. If the conditions of paragraph 1 of this article are fulfilled, the interested party shall be registered with the Balancing Service Providers Registry by following the procedure set out in articles 4 and 5 of the Balancing Market Rulebook and the Technical Decision "Procedures for registration with the HETS Operator Registry".
3. By virtue of registration with the Balancing Service Providers Registry, the Balancing Service Provider shall enter into a Balancing Service Provider Contract with the HETS

Operator, whose content is identical to the Balancing Market Rulebook. The Balancing Service Contract shall be deemed to have been entered into by the parties upon registration with the Balancing Service Providers Registry and shall not be subject to any further formalities.

Article 3

Pre-qualification process for Balancing Service Entities

1. Each Balancing Service Provider shall represent a Balancing Service Entity or Entities in accordance with article 10 of the Balancing Market Rulebook. To obtain the status of Balancing Service Entity, the interested party must first pre-register the Balancing Service Entity with the HETS Operator Registry and then successfully complete the pre-qualification process set out in paragraph 2 of this article.
2. The pre-qualification process is set out in Commission Regulation (EU) 2017/1485 establishing a guideline on electricity transmission system operation ("SOGL"), Commission Regulation (EU) 2016/631 establishing a network code on requirements for grid connection of generators ("RfG"), the HETS Grid Code and the relevant decisions of RAE and includes control tests to certify that the minimum technical requirements for the supply of Frequency Containment Reserve (FCR) and Frequency Restoration Reserve (FRR) are fulfilled. The pre-qualification tests are set out in Annex I to these Terms and Conditions.
3. The pre-qualification of Balancing Service Entities shall be reviewed:
 - (a) at least once every 5 years, and
 - (β) if the technical requirements or availability requirements or the equipment have changed, or
 - (γ) in case of upgrades to the equipment for FCR activation.
4. Provided that the requirements of paragraph 1 of this article are fulfilled, the Balancing Service Entity may register with the Balancing Market Generating Units Registry or the Dispatchable RES Units Portfolio Registry or the Dispatchable Load Portfolio Registry, following the procedure set out in articles 4 and 11 to 13 of the Balancing Market Rulebook and the Technical Decision "Procedures for registration in the HETS Operator Registry".

Article 4

Rules, requirements and timeframes for the provision of Balancing Services

1. The rules and requirements for the provision of Balancing Services are defined in Sections II and III of the Balancing Market Rulebook and in article 32 of Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing ("EBGL").
2. The HETS Operator shall define on a daily basis the upward and downward Balancing Capacity requirements of the HETS for FCR, automatic FRR and manual FRR, per Bidding Zone, pursuant to dimensioning rules, in accordance with the provisions of the Methodology of Determination of Zonal/Systemic Balancing Capacity Needs.

3. For the commitment of Balancing Capacity by the HETS Operator, the Integrated Scheduling Process shall be executed in such a way as to minimise the total cost for the provision of Balancing Energy and Capacity, in accordance with articles 58 and 59 of the Balancing Market Rulebook.
4. The Balancing Service Providers shall submit their Balancing Capacity Offers for each Dispatch Day between 4:00 and 17:30 EET of the day preceding the Dispatch Day. The Balancing Service Providers shall submit upward and downward Balancing Capacity Offers to the Integrated Scheduling Process in accordance with articles 50 and 51 of the Balancing Market Rulebook for the following products:
 - i. Upward and downward FCR,
 - ii. Upward and downward automatic FRR, and
 - iii. Upward and downward manual FRR.
5. The manual FRR process and the automatic FRR process shall be performed for the procurement of Balancing Energy by the HETS Operator. The manual FRR process minimizes the cost for covering zonal Imbalances in each Bidding Zone by using the submitted upward and downward Energy Offers for manual FRR of the Balancing Service Entities, in accordance with articles 68 to 70 of the Balancing Market Rulebook. The automatic FRR process shall be performed by using Automatic Generation Control in accordance with article 73 of the Balancing Market Rulebook.
6. The Balancing Service Providers shall submit upward and downward Balancing Energy Offers for manual and automatic FRR no later than the Expiration of the Deadline for the Submission of Balancing Energy Market Offers in accordance with article 67 of the Balancing Market Rulebook. The Expiration of the Deadline for the Submission of Balancing Energy Market Offers is fifteen (15) minutes prior to each Manual FRR Time Period.

Article 5 Force Majeure

Force Majeure events, as defined in article 26 of the Balancing Market Rulebook, shall affect the performance of obligations arising from these Terms and Conditions.

Article 6 Rules and conditions for the aggregation of demand side response and RES within a scheduling area with the purpose of becoming a Balancing Service Provider

1. RES aggregators and demand response aggregators may become Balancing Service Providers.
2. RES Aggregator means a natural or legal person that undertakes to represent owners of RES and HECHP power plants in the electricity market, in accordance with article 2(22) of Law 4414/2016. A RES Aggregator that has become a Balancing Service Provider shall represent one Dispatchable RES Units Portfolio.

3. Demand Response Aggregator means a natural or legal person as defined in article 5(o) of Law 4425/2016. A Demand Response Aggregator that has become a Balancing Service Provider shall represent one Dispatchable Load Portfolio.
4. RES Aggregators and Demand Response Aggregators must have been licensed to perform the respective activity in accordance with the provisions of article 13 of Law 4001/2011 and the applicable law.
5. RES Aggregators and Demand Response Aggregators are required to immediately notify the HETS Operator of any changes in the data held in the Dispatchable RES Units Portfolios and Dispatchable Load Portfolios Registries respectively, in accordance with the provisions of articles 12 and 13 of the Balancing Market Rulebook and the Technical Decision "Procedures for registration in the HETS Operator Registry".

Article 7

Requirements on data and information to be delivered to the HETS Operator during the pre-qualification process and the operation of the Balancing Market.

1. The requirements on data and information to be delivered to the HETS Operator during the pre-qualification process are set out in Annex I to these Terms and Conditions.
2. The requirements on data and information to be delivered to the HETS Operator during the operation of the Balancing Market by the Balancing Service Providers are set out in Chapter 5, as well as in articles 43 to 49 of the Balancing Market Rulebook.

Article 8

Rules and conditions for matching Balancing Energy Offers with one or more Balance Responsible Parties

1. Balancing Energy Offers shall be matched with one or more Balance Responsible Parties by calculating the Instructed Energy and the Imbalance Adjustment, pursuant to article 84 of the Balancing Market Rulebook and the Calculation Methodology for Activated Balancing Energy.
2. The HETS Operator shall calculate the Imbalance Adjustment which should apply to the relevant Balance Responsible Parties for each Activated Balancing Energy Offer of the Balancing Service Entities that correspond to Balance Responsible Entities.

Article 9

Requirements on data and information to be delivered to the HETS Operator for evaluation of the Balancing Services

1. The requirements on the data and information delivered to the HETS Operator for the evaluation of Balancing Services are set out in the HETS Grid Code.
2. The Balancing Service Providers that supply FCR to the HETS Operator shall comply with the properties or characteristics defined in the HETS Grid Code and shall provide to the HETS Operator at least the information specified in the HETS Grid Code.

3. The Balancing Service Providers that supply FRR to the HETS Operator shall comply with the minimum technical requirements specified in the HETS Grid Code. Each Balancing Service Provider shall ensure that the Balancing Service Entities it represents fulfil the above minimum requirements for FRR supply and shall notify, as soon as possible, the HETS Operator of any reduction in the actual availability of the Balancing Service Entity in accordance with the HETS Grid Code.
4. The information required for the evaluation of Balancing Services shall be transmitted to the HETS Operator by the Power Exchange and the Distribution Network Operators set forth in articles 21 to 24, 37, 77 and 79 of the Balancing Market Rulebook.

Article 10

Location of every standard and every specific product

1. Given that the requirements for standard and specific products have not been approved in accordance with articles 25 and 26 of Commission Regulation (EU) 2017/2195 (EBGL), no distinction is made in these Terms and Conditions between standard and specific products.
2. The location for each Balancing Service product is determined per category of Balancing Service Entity as follows:
 - a) For Dispatchable Generating Units, location means the Connection Point with the HETS.
 - β) For Dispatchable RES Units Portfolio, location means the Bidding Zone where it belongs, and
 - γ) For Dispatchable Load Portfolio, location means the Bidding Zone where it belongs.

Article 11

Determination of the Balancing Energy and Capacity volume

1. The method of determining the volume of Balancing Energy for manual FRR and automatic FRR, as well as of the volume of energy for purposes other than balancing for each Imbalance Settlement Period and for each Balancing Service Entity is set out in article 84 of the Balancing Market Rulebook and the Activated Balancing Energy Calculation Methodology.
2. The method of determining the supplied volume of Balancing Energy for FCR, manual FRR and automatic FRR for each Imbalance Settlement Period and for each Balancing Service Entity is set out in article 90 of the Balancing Market Rulebook.

Article 12

Calculation of debits and credits to Balancing Service Providers

1. The method of calculating Balancing Energy Prices for manual FRR for each Imbalance Settlement Period is set out in article 85 of the Balancing Market Rulebook.
2. The method of calculating debits and credits to Balancing Service Providers for each Balancing Service Entity they represent, per Imbalance Settlement Period, with respect to Balancing Energy is set out in article 86 of the Balancing Market Rulebook.
3. The method of calculating debits and credits to Balancing Service Providers for each Balancing Service Entity they represent, per Imbalance Settlement Period, with respect to Balancing Capacity is set out in article 91 of the Balancing Market Rulebook.

Article 13

Timeline for the finalisation of Balancing Energy settlement with a Balancing Service Provider for each Imbalance Settlement Period

The Balancing Market Settlement Procedure is defined in article 107 of the Balancing Market Rulebook and the Technical Decision on "Balancing Market Settlement".

Article 14

Suspension and restoration of market activities and rules for settlement in case of market suspension

In the event that the operation of the Balancing Market is impossible the rules that shall apply are set out in the "Rules for Suspension and Restoration of market activities", which are issued in accordance with article 34 of the Balancing Market Rulebook and the "Rules for settlement in case of market suspension", which are issued in accordance with articles 85(5), 88(3) and 91(4) of the Balancing Market Rulebook.

Article 15

Consequences in case of dispute or non-compliance with the Terms and Conditions for Balancing Service Providers

1. In the event of a dispute between the HETS Operator and the Balancing Service Providers regarding these Terms and Conditions for Balancing Service Providers, the provisions of article 6 of the Balancing Market Rulebook shall apply. This article shall apply even after the termination of the Balancing Service Contract. Recourse to any of the provisions of article 6 of the Balancing Market Rulebook on dispute resolution procedures shall not exempt the parties involved from performing their obligations in accordance with the Balancing Market Rulebook, the Balancing Service Contract and these Terms and Conditions for Balancing Service Providers.
2. In the event of non-compliance of the Balancing Service Provider with these Terms and Conditions for Balancing Service Providers, the HETS Operator shall terminate

the Balancing Service Contract in accordance with article 7 of the Balancing Market Rulebook.

3. In the event of default of Balancing Service Providers on their financial obligations, the provisions of Chapter 23 of the Balancing Market Rulebook and those of the Clearing Rulebook for Balancing Market Positions shall apply. In the event that no Clearing House operates in the Balancing Market, for any reason whatsoever, the HETS Operator shall apply the provisions of article 114 of the Balancing Market Rulebook if any Balancing Service Providers default on their financial obligations within the framework of the Balancing Market.

ANNEX I

Pre-qualification tests for the provision of Balancing

1. Subject matter of the tests

The subject matter of the tests is to certify that the minimum technical requirements for the provision of balancing services are fulfilled, as described in Commission Regulation (EU) 2017/1485 (SOGL), in Commission Regulation (EU) 2016/631 (RfG), in the Balancing Market Rulebook and in the relevant RAE decisions, with their scope covering the generation and load balancing framework implemented by the HETS Operator (central dispatch model), as well as to validate the relevant technical characteristics declared by the producer and, in particular, the extent of reserves for the provided balancing energy services and the ramp-up and ramp-down rates of the generating units.

The tests shall be scheduled and carried out with due regard for the security of operation of the HETS. Furthermore, their design should be such as not to compromise the proper functioning of equipment in the generating units and to minimise the possibility of situations leading to the activation of control or protection mechanisms for the shut-down of units. All unit protection devices must be activated during the tests.

2. Provision of Frequency Containment Reserve

The minimum technical requirements for the provision of Frequency Containment Reserve by generating units are specified in Commission Regulation (EU) 2016/631 (RfG) and the relevant decisions of RAE, where the requirements for frequency response tests in frequency sensitive mode (FSM), as well as the tests for compliance with the technical requirements for the speed governor and the load controller of the generating units are described. The tests shall be carried out by injecting simulated frequency deviation signals at both the speed governor and the load controller of the generating unit and recording the output changes in the unit.

As part of the tests, the response of the generating unit to linear frequency deviations of $\pm 0.2\text{Hz}$ from the nominal frequency shall also be verified. The changes caused to the generating unit output due to the action of the speed governor correspond to the maximum downward and upward frequency containment reserve, and the corresponding values should agree with the ones declared by the generating unit with a tolerance of $\pm 5\%$ for the test to be deemed successful. This test should be carried out at an intermediate point of operation which would allow the activation of the declared frequency containment reserve at its fullest extent. If a new request for provision of Frequency Containment Reserve is submitted by an existing generating unit, the compliance tests carried out shall be the ones set forth in the HETS Grid Code, which certify that the minimum technical requirements of the HETS Grid Code are fulfilled.

3. Provision of Frequency Restoration Reserve

The minimum technical requirements for the provision of Frequency Restoration Reserve by generating units are specified in the HETS Grid Code. Considering that the HETS applies a central dispatch model, the controls carried out as part of the tests for the provision of manual or automatic Frequency Restoration Reserve are aimed at certifying the capability of a generating unit to respond to an active power control signal from the Energy Control Centre of the HETS Operator in line with the technical characteristics declared by the producer. These characteristics consist of the maximum contribution in terms of automatic and manual FRR, which determines the extent of provision of the specific reserves, as well as the relevant ramp-up and ramp-down rates. The generating units must have appropriate systems in place that will allow them to exchange the necessary information with the Energy Control Centre of the HETS Operator, including active power control signals (dispatch instructions) for an the economic dispatch of the units, as well as control signals by the Automatic Generation Control (AGC) system.

As soon as the generating unit has been synchronized with the HETS and has been brought to minimum load under AGC, the first step is to establish whether the unit remains stable when operating at this level of production and no technical problem occurs. This test shall last 30 minutes.

The next step is to start the test used to estimate the ramp up rate of the generating unit, whereby control signals are transmitted by the AGC system aiming at a step-wise increase in the unit's output until maximum load under AGC is reached. In this way, the declared maximum contribution in terms of automatic FRR in the upward direction is also checked as part of the test. With every Dispatch Instruction to increase output, the time required from receiving the Instruction until the generating unit has been brought to the new point of operation shall be recorded, in order to calculate the estimated ramp up rate. The assumed tolerance regarding the adjustment of the unit's active power to the new point of operation is 3MW. The total estimated ramp up rate is calculated as the average of the rates calculated for each step-wise upward instruction. The time-stamped recordings of remote regulation instructions and of the generating unit's instantaneous active power which are generated by the Energy Control System with an adequate time analysis shall be used for the above calculations.

A similar process shall be followed when transmitting Dispatch Instructions to the unit for a stepwise decrease in the output, from maximum to minimum load under AGC, in order to calculate its ramp down rate. The declared maximum contribution of the unit to automatic FRR in the downward direction is also checked as part of this test.

The test shall be deemed successful if the capability of the generating unit to supply the declared maximum contribution in terms of automatic FRR is demonstrated and the calculated mean ramp-up and ramp-down rates are higher than or equal to those declared by the Producer.

4. Manual FRR tests

If the extent of available manual FRR, i.e. maximum contribution in terms of manual FRR, that has been declared coincides with what was declared for the automatic FRR, the previous test shall cover both cases. In the opposite case, the test shall be repeated in accordance with the provisions of the above paragraph, but, this time, the range of operation shall be between the technical minimum and the continuous output that the generating unit is capable of delivering. As part of the new test, the unit's ramp-up and ramp-down rates shall be re-calculated.

5. Special cases

For hydroelectric power plants consisting of more than one units, separate tests shall be carried out for each unit. In the event that restricted zones have been designated in the units of the hydroelectric power plant, the tests shall be carried out outside the boundaries of these zones, while, during the tests, the transition of the operation point from the forbidden zone should be done as soon as possible. Given that the units of hydroelectric power plants in Greece are locally controlled by a central system as a single entity, the ramp-up and ramp-down rate shall be the sum of the respective rates calculated for each unit.

For multi-shaft combined cycle power plants, the above tests should be carried out separately for each steam turbine and gas turbine combination. If possible, when the plant operates in open cycle, if it has more than one gas turbines, the above tests shall be carried out separately for each gas turbine.