



Nezavisni operator sistema u Bosni i Hercegovini

Независни оператор система у Босни и Херцеговини

Neovisni operator sustava u Bosni i Hercegovini

Independent System Operator in Bosnia and Herzegovina

RULEBOOK ON DAILY BALANCING ENERGY MARKET OPERATIONS

November 2021

History:			
Version	Date	Author	Changes
1	16.12.2014.	NOSBiH	Initial draft
1.2	20.5.2015.	NOSBiH	Chapter 6, draft
1.3	5.10.2017.	NOSBiH	Bids for secondary control power, types of voluntary bids for tertiary control, imbalance price
1.4	19.8.2019.	NOSBiH	Submission of bids in intraday activities
1.5	10.11.2021	NOSBiH	New terminology introduced: aFRRU and mFRR, Balancing Service Provider – BSP Introduced voluntary bids for aFRR Introduced 15-minute balancing period Erased the part defining the method for determination of imbalance price when there was no activation of balancing energy Introduced the possibility to activate aFRR according to the MOL Altered characteristics of mFRR products

CONTENTS

INTRODUCTION	4
I – PARTICIPANTS IN THE DAILY BALANCING ENERGY MARKET	4
II – TYPES AND FORMAT OF THE BID	5
III – ACTIVITY SCHEDULE IN THE DAILY BALANCING ENERGY MARKET	6
IV – LISTS SCHEDULING BIDS ACTIVATION AND BALANCING ENERGY PRICES	10
V – PUBLISHING INFORMATION ON OPERATIONS IN THE DAILY BALANCING ENERGY MARKET	12
VI - FINAL PROVISION	13

Pursuant to Article 33 of the Law on Establishing Independent System Operator for the Transmission System in Bosnia and Herzegovina (Official Gazette of Bosnia and Herzegovina, 35/04), Article 25 of the Statute of Independent System Operator in Bosnia and Herzegovina and in relation to Article 32 of the Market Rules, General Director of Independent System Operator in Bosnia and Herzegovina issues the following:

RULEBOOK

ON DAILY BALANCING ENERGY MARKET OPERATIONS

INTRODUCTION

Article 1

Responsibility for functioning and monitoring the daily electricity market

Independent System Operator in Bosnia and Herzegovina (NOSBiH) is responsible for functioning of the daily balancing energy market, and the State Electricity Regulatory Commission (SERC) monitors the operation of the daily balancing energy market.

I - PARTICIPANTS IN THE DAILY BALANCING ENERGY MARKET

Article 2

The right to participate in the daily balancing energy market

Bids for automatic Frequency Restoration Reserve (aFRR) and manual Frequency Restoration Reserve (mFRR) are submitted in the daily balancing energy market.

The right to participate in the daily balancing energy market belongs to:

- BSPs whose structures are registered for providing aFRR in accordance with the Ancillary Services Procedures,
- BSPs whose structures are registered for providing upward/downward mFRR in accordance with the Ancillary Services Procedures.

II - TYPES AND FORMAT OF THE BID

Article 3

Submission of bids

Bids in the daily balancing energy market for aFRR and mFRR may be mandatory (for contracted capacity) and voluntary (with no contracted capacity). Participants are obligated to submit their bids in a format as defined by NOSBiH.

Submission of mandatory bids for delivery of contracted volume of aFRR and mFRR is responsibility of BSPs which concluded a contract on providing capacity with NOSBiH. The structure providing the service must be defined for the mandatory bids.

Voluntary bids for aFRR and mFRR are submitted in accordance with abilities of the market participants.

Article 4

Bids for aFRR

Bids for aFRR are to be delivered to the Balancing system of NOSBiH. The following are defined in the bid:

- the structure from which the service is provided,
- the scope of control,
- price for activated energy for upward and downward control.

The BSP may submit one energy price for upward aFRR and one energy price for downward aFRR.

The bids for aFRR imply a symmetrical range of upward and downward control.

The difference in prices of energy for upward and downward aFRR bids is restricted by the value S which was determined by appropriate SERC's decision.

If, after the new SCADA system has been implemented, there is a need to change the method of bids' submission and the way of balancing energy activation, NOSBiH will make necessary changes of this Rulebook in cooperation with BSPs.

Article 5

Bids for upward/downward mFRR

All submitted bids must be in compliance with the technical and regulation requirements of power plants nominated for providing ancillary services within the reported daily schedule.

Any market participant may submit several bids for a specific time period.

Mandatory bids for mFRR are shareable, which means that NOSBiH may activate a part of the bid.

Voluntary bids for mFRR may be shareable, non-shareable and combined.

Voluntary bids may be shared, that is NOSBiH may activate only a part of the bid.

Non-shareable bids may not be shared, that is NOSBiH may only activate the total amount given in the bid.

Combined bids are those bids submitted along with the non-shareable bid and may be activated only if a combined non-shareable bid is activated. When submitting voluntary combined bids their price must be higher than the price of a combined non-shareable bid.

The structure from which the bid is procured must be specified when submitting non-shareable and combined voluntary bids, and voluntary shareable bids may be submitted as portfolio.

III - ACTIVITY SCHEDULE IN THE DAILY BALANCING ENERGY MARKET

Article 8

Submission of bids in day-ahead activities

Bids in the daily balancing energy market for a day of delivery or D day may be submitted until the market's closure in D-1 by 14:30 hrs.

A day of delivery has 96 equal time intervals except for last Sunday in March which has 92 time intervals, and last Sunday in October which has 100 equal time intervals.

D-1

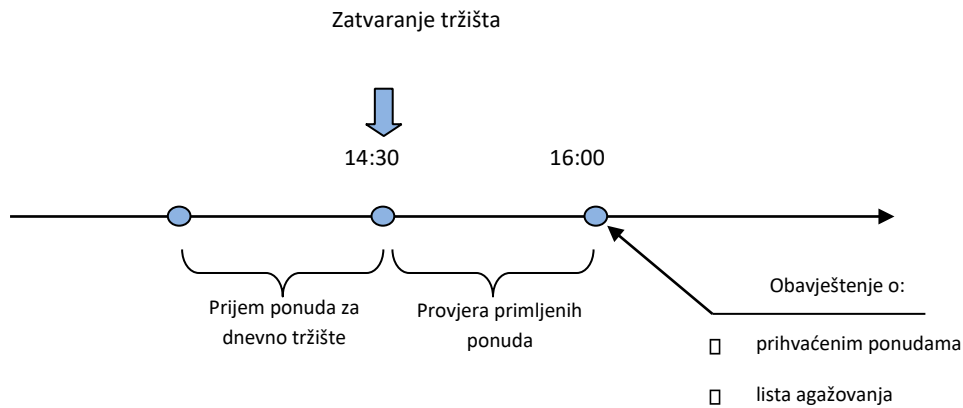


Image 1: Activities in the daily balancing energy market

One time interval is equal to one 15-minute interval. The balancing system also allows submission of bids in hourly resolution and it is then considered that the bid is the same in each of four 15-minute interval.

If a problem occurs in the system for reception and processing of bids in the daily balancing energy market, NOSBiH has the right to accept the bid upon expiry of this deadline.

The difference between the bids of the market participants which relate to the same time interval will be made on the basis of their identifier and version (numerical value indicating the bid's changes).

Each bid must contain the following data:

- EIC code of the market participant
- Identifier of the bid
- Version of the bid
- Period of delivery (day od delivery D)
- Time intervals in the period of delivery
- Balancing energy bids (pairs quantity - price), where the price expressed in KM has two decimal places, and power is expressed in MW as a full integer value.

Article 9

Submission of bids in intraday activities

Bids in the daily balancing energy market may be submitted/changed from 18:00 hrs in a day D-1 for a day of delivery D.

Bids for aFRR may be changed in intraday activities one hour before the real time, i.e. until H-1 for hour H in day D. The price within the bid must not be changed in that case.

Mandatory bids for upward/downward mFRR may be changed provided that the amount of power and the price remains the same. Time schedule of nomination and re-nomination of mandatory bids is by hour H-1 for hour H at the latest, but already activated bid may not be changed. Voluntary bids of upward/downward mFRR may be changed in all parameters i.e. they may be corrected or new ones may be delivered in intraday activities. Time schedule of nomination and re-nomination of voluntary bids is by hour H-30 min for hour H at the latest, but already activated bid may not be changed.

Each bid properly submitted and being changed by the market participant will automatically cancel its previous bid submitted for the same time interval provided that both bids have the same identifier and that the ordinal number of the version subsequently submitted is higher than the ordinal number of previous version.

Mandatory bids	Voluntary bids
May be for upward and downward control	May be for upward and downward control
Must have at least one pair (but may have more pairs) quantity-price for time intervals in which the capacity reserve is contracted.	Must have at least one pair quantity-price (but may have more pairs) for those time intervals to which the bid refers to.
Sum of quantities in all pairs of the bid per a time interval must be equal to the contracted amount of mFRR capacity of BSP for that hour.	Without this restriction

The highest price in the bid cannot be higher than the determined price cap.	The highest price in the bid cannot be higher than the determined price cap.
They can be shareable i.e.; they cannot be non-shareable and combined.	They can be shareable, non-shareable and combined.
The bid may be changed in a way that certain amount is transferred from one power plant to another without changing the price and quantity. It is also possible to correct price for bids in intraday activities. Bids may be changed in the defined way by hour H-1 for hour H.	They can be corrected or new bids may be submitted in hour H-30 min for hour H (changed quantity and price).
<p>Minimum duration of mFRR activation is 15 minutes.</p> <p>Total daily duration of mFRR activation of one mandatory bid is up to 8 hours maximally, in a single activation or few of them.</p> <p>The time period between activation of one bid is 1 hour.</p>	Minimum duration of mFRR activation is 15 minutes.

Table 1: Characteristics of mandatory and voluntary bids for mFRR

Article 10

Verification of correctness and acceptance of bids in the daily balancing energy market

In a trading day until 16 o'clock NOSBiH checks the validity, confirms the reception and creates an archive of the submitted bids in the daily market.

Upon the verification of the bids' correctness, NOSBiH sends a message to the bidder informing him about the acceptance of the submitted bid or describing an error in the bid.

NOSBiH will carry out control over technical and regulation possibilities of the power plants nominated to provide ancillary services within the reported daily schedule.

If NOSBiH fails to send a status message (either confirming the bid's acceptance or refusing it) to the market participant within 15 minutes from his bid's sending, he shall contact NOSBiH asking for an explanation.

NOSBiH creates an archive of the received and accepted bids along with messages sent to market participants.

NOSBiH is not liable to accept any bid in the daily balancing energy market.

The information about the bids accepted in the daily balancing market will be given by NOSBiH to market participants until 16 o'clock.

By submitting the bids in the balancing market, the participants commit themselves to providing an adequate service to NOSBiH.

After the participant in the daily balancing energy market submits/modifies the bid in intra day activities, the participant shall be obligated to inform DC at NOSBiH about changes in the Balancing platform.

IV – LISTS SCHEDULING ACTIVATION OF BIDS AND BALANCING ENERGY PRICES

Article 11

The schedule for activation of balancing energy

aFRR bids shall be activated in proportion to their range of offer (regardless of bids' price) or in accordance to the merit order list depending on the algorithm which was implemented on SCADA/EMS system at NOSBiH.

NOSBiH shall create scheduling lists for activation of upward and downward mFRR for each time interval of delivery.

All bids from BiH and other TSOs shall be involved in creating a scheduling list for activation of mFRR in accordance with the agreement signed by system operators.

The scheduling list for activation of upward mFRR shall be determined so that the pairs quantity-price are abstracted for each bid for a specific hour on a delivery day and are then sorted in an increasing price order.

The procedure shall be repeated for each hour in a delivery day.

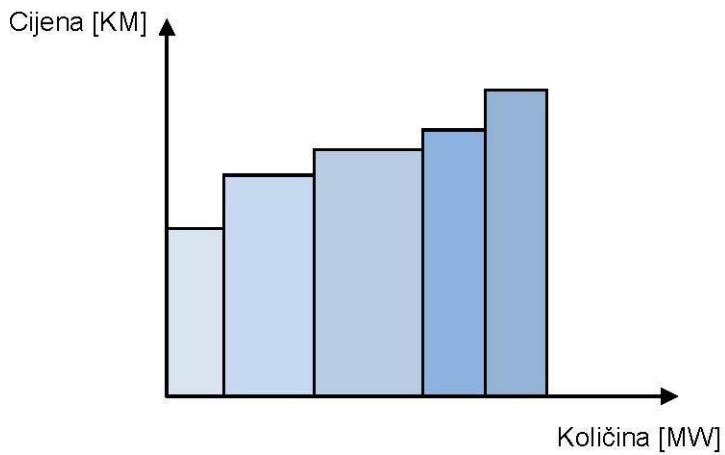


Image 2: The scheduling list for activation of upward mFRR

The scheduling list for activation of downward mFRR shall be determined so that the pairs quantity-price are abstracted for each bid for a specific hour on a delivery day and are then sorted in a descending price order. The procedure shall be repeated for each hour in a delivery day.

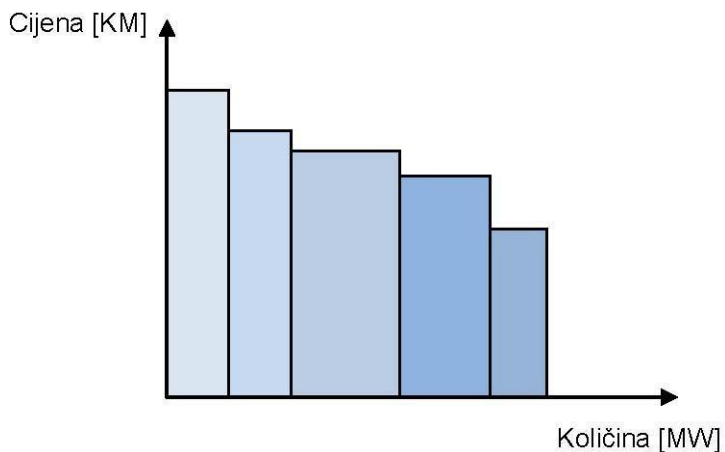


Image 3: The scheduling list for activation of downward mFRR

Article 12

Balancing energy price and restrictions

The price for activated balancing energy shall be set by the principle „*pay as bid*“ and shall be equal to the price of the accepted bid.

The price for balancing energy is expressed in KM/MWh and may be zero, positive or negative.

The price for upward or downward balancing energy is zero and it means that the BSP shall upon activation deliver i.e. accept balancing energy without compensation.

The price for upward balancing energy is positive and it means that the BSP shall upon activation and delivery of balancing energy receive adequate compensation in accordance with the offered price.

The price for downward balancing energy may be positive and it means that the BSP shall upon activation and reception of balancing energy pay adequate compensation in accordance with the offered price.

The price for downward balancing energy may be negative and it means that the BSP shall upon activation and reception of balancing energy receive adequate compensation in accordance with the offered price.

V – PUBLISHING INFORMATION ON OPERATIONS IN THE DAILY BALANCING ENERGY MARKET

Article 13

Daily, monthly and annual report on the balancing market operations

NOSBiH shall on its website publish daily, monthly and annual reports on the daily balancing market operations.

The information published in daily reports are:

- Activated upward/downward aFRR energy at settlement period level,
- Activated upward/downward mFRR energy at settlement period level,
- The price for negative/positive imbalance, i.e. maximum/minimum price for activated upward/downward energy at each settlement period.

The information published in monthly reports are:

- The total amount of activated aFRR balancing energy,
- The total amount of activated mFRR balancing energy,
- Activated crossborder balancing energy,
- The total cost of aFRR energy and average price,
- The total cost of mFRR energy and average price,
- Average imbalance price for shortage/surplus of energy,
- max/min imbalance price for shortage/surplus of energy.

NOSBiH also creates an annual report on ancillary services and the balancing market operations containing the following information:

- required, contracted and delivered aFRR capacity,
- the price of contracted capacity and total cost of delivered aFRR capacity,
- required, contracted and delivered mFRR capacity,
- the price for contracted capacity and the total cost of delivered mFRR capacity,
- activated balancing energy, balancing cost and realized average price,
- activated crossborder balancing energy,
- average imbalance price for shortage/surplus of energy.

VI – FINAL PROVISION

Article 14 Entry into force

This Rulebook shall enter into force on the eight day following its publication on the notice board at NOSBiH headquarters and shall also be published on NOSBiH website.

Number:

General Director

Date:

Milodrag Košarac, PhD