Electricity balancing mechanisms in the Energy Community

April 2019

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Introduction

1. About ECRB

The Energy Community Regulatory Board (ECRB) operates based on the Energy Community Treaty. As an institution of the Energy Community[1] the ECRB advises the Energy Community Ministerial Council and the Permanent High Level Group on details of statutory, technical and regulatory rules and makes recommendations in the case of cross-border disputes between regulators.

ECRB is the independent regional voice of energy regulatory authorities in the Energy Community. ECRB's mission builds on three pillars: providing coordinated regulatory positions to energy policy debates, harmonizing regulatory rules across borders as well as sharing regulatory knowledge and experience.

2. Scope

2.1. Background

An adequate balancing mechanism reflects the real-time value of electricity and provides an incentive for all market participants to hedge their forward and short-term positions against such value. If the right incentives are in place, balancing is key to ensuring security of supply. This is also the reason why issues around balancing mechanisms remain in the focus of ECRB.

This report represents the continuation of last years Report aiming at focusing on the perspective and future planned developments rather than assessing the existing situation. Taking into account increased level of RES integration, the treatment of RES (especially generators under the incentive schemes) have also been included in the survey.

The National Regulatory Authorities (NRAs) from Contracting Parties (CP)[2] were asked to provide an outline of how they see the development of their national electricity balancing markets, considering in the first place the improvements needed in practice as well as on the regulatory framework.

All country surveys have been conducted based on the input provided by the respective NRA.

[1] The Energy Community comprises the EU and Albania (AL), Bosnia and Herzegovina (BiH), North Macedonia (MK), Georgia (GE), Kosovo*(KS), Moldova (MD), Montenegro (ME), Serbia (RS) and Ukraine (UA). Armenia, Turkey and Norway are Observer Countries. [Throughout this document the symbol * refers to the following statement: *This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Advisory Opinion on the Kosovo declaration of independence*].

[2] No feedback was provided by Moldova and Georgia.

2.2. Considerations

There are at least two important considerations to be taken into account that impact the findings of this report:

I. The level of market maturity and understanding differs among the Contracting Parties, hence the focus of the NRAs is sometimes on issues and challenges that are not necessarily linked with balancing.

II. Significant reforms and changes may create short-term unpopular effects for companies that need to adopt their business to new incentives.

3. Methodology

The present report is based on questionnaire, as detailed in the text-box 1 below, aiming at identifying:

- the issues related to balancing mechanism in each CP,
- steps and actual plans for improvements, and
- monitoring method of balancing mechanism.

Text-box 1

(i) Diagnose:

1. What is the view of the Regulator related to balancing mechanism in place in their Contracting Party, i.e. do you believe improvements are required and if so which areas (short description)?
2. How are RES treated in balancing mechanism and is there any plan to change the way they are treated?

(ii) Concrete measures:

1. Is any change planned or ongoing in the balancing mechanism to be implemented soon or in the years to come?
2. If changes are planned, do they require changes in the primary legislation?
3. If changes are planned in which secondary act they will be incorporated and which secondary acts need to be changed?
4. Is there a concrete action plan in place for these changes, i.e. timeline, step-wise implementation, etc.?
5. Are any improvements of IT infrastructure (balancing platform, measurements, etc.) foreseen soon or in the years to come and are such changes a condition for efficient implementation of balancing mechanism?

(iii) Monitoring

1. According to national legislation what is the role of the Regulator regarding the monitoring of balancing mechanism (please provide details and also if there is any regular reporting in place, any investigation, etc.)?

Diagnose, concrete measures and monitoring

ALBANIA

Energy Regulator Entity (ERE) has approved “Transitional rules for electricity balancing mechanism (Balancing Rules)”, decision No. 193, Date 24.11.2017. Improvements related to balancing mechanism are foreseen in the new “Design and implementation of the Albanian Electricity Balancing Market”, that are drafted and will be reviewed once more before approval by ERE.

Changes in the balancing mechanism are planned to be implemented in the near future by the new “Design and implementation of the Albanian Electricity Balancing Market” supported by IFC and World Bank. Improvements of IT infrastructure are foreseen as part of this project (adding balancing modules in the existing TSO DAMAS platform).

No changes in primary legislation are required but, in term of secondary legislation, the new “Design and implementation of the Albanian Electricity Balancing Market” will replace the “Transitional rules for electricity balancing mechanism (Balancing Rules)”, decision No. 193, Date 24.11.2017. The concrete and final timeline for these changes is not yet defined.

Regarding the treatment of RES in balancing mechanism, according to the Article 22, paragraph.5 of RES Law, exclusion to all existing RES generators from balance responsibility until the year 2022, or with the creation of a balancing market.. Article 22.5 of the RES Law reads as following: “Until the creation of a balancing market, but no later than 31 December 2022, existing producers shall not be liable for the costs of imbalances incurred. These costs will be taken into account by the ERE in the electricity distribution tariff. Existing priority manufacturers will notify the production schedule to the Distribution System Operator, in accordance to the electricity market rules. There should be given clear reference to the deadline set in the Power Sector Law, as it is relevant to achieve consistency between the laws affecting the power system. On the other hand, it is important to avoid any delay in commencement of the Balancing Market (by 2022) because of the relevance of the commencement of the balancing market since the economic signal delivered by the Balancing market has not only important impact on costs to market participants but also are directly impacting on intra-day, day-ahead and longer terms markets.

In addition to issue related to commencement of the balancing responsibility, above mentioned Article 22.5 is also stating that the costs for imbalances for existing priority producers will be taken into account by the ERE in the electricity distribution tariff. A policy/regulatory decision is required as to if imbalance charges would be included in the distribution tariff and by when.

According to national primary legislation and secondary to Regulatory (ERE) is responsible for the monitoring all the procedures and reports for balancing.

BOSNIA AND HERZEGOVINA

Having in mind that balancing mechanism in Bosnia and Herzegovina is market based and quite mature, improvements are possible in facilitating more competition and reducing the impacts of price caps. State Energy Regulatory Comission (DERK) is providing support to the system operator in regional cooperation and creation of regional balancing market.

Regarding the possible changes in balancing mechanism to be implemented in the near future, the system operator started discussions with neighboring operators on joining to the Imbalance Netting Cooperation (Austria, Slovenia and Croatia).

No changes of primary legislation are foreseen but there are possible changes of secondary legislation expected, specifically Balancing Rules. The action plan related to implementation timeline for these potential changes is still to be developed.

As an important precondition for a more efficient implementation of balancing mechanism, it is foreseen establishment of IT platform for procurement of ancillary services and imbalance settlement.

Regarding to treatment of RES in balancing mechanism, all RES generators belong to the one of the Balance Responsible Parties who is fully balancing responsible towards system operator. For the time being, there is no plan to change that.

Regarding the monitoring of the balancing mechanism, the role of the DERK is to issue a license and monitor the activities of the Independent System Operator, including the efficiency of mechanisms and methods to secure a system balance between demand and supply of electricity.

KOSOVO*

Balancing Mechanism is defined in Market Rules and in that regard system balancing is carried out according to the Methodology for Calculating Imbalance and Compensation Prices prepared by TSO (KOSTT) and approved by Regulator (ERO). This methodology determines the method of calculating the energy imbalance prices of the parties in the electricity market in Kosovo* in the absence of a competitive balancing market.

Imbalance price is calculated considering Electricity Day Ahead Price published by Hungarian Power Exchange (HUPX) multiplied by coefficients, set by ERO, which varies depending if the system is short or in surplus on energy:

Coefficient when system is in surplus on energy is 0.7, and

Coefficient when system is short on energy is 1.3.

Until a liquid balancing market is established, for regional balancing, producers are obliged to provide balancing services to the transmission system operator based on the prices regulated by ERO.

Albanian TSO is in the process of establishing the power exchange and KOSTT committed to participate in the Albanian power exchange, including also in relation to exchange of balancing services. Implementation of any cross-border balancing arrangements depends on implementation of Connection Agreement between KOSTT and ENTSO-E.

KOSTT has created IT platform covering the balancing mechanism which is in operation and, depending on future market developments, will be improved.

Regarding the treatment of RES in balancing mechanism, allocation of the costs of settlement of RES generator imbalances is governed by ERO's *"Rule on support scheme for renewable energy sources generators".*
For generators under the support scheme, it is specified that 25% of the costs of imbalances of RES generators will be borne by them, with the remainder of the cost being charged to a Renewable Energy Fund set up to fund by feed-in tariffs, therefore socialised.

Article 11, Paragraph 1, Sub-Paragraph 1.2 of the Rule on support scheme for renewable energy sources generators says:

1. *RES Generating Facilities admitted to the Support Scheme shall:*

   1.2 *be liable for 25% of their total imbalance costs, except for the RES Generators under 500 kW;*

Article 13 Funding of the RES Support Scheme, Paragraph 2, Sub-Paragraph 2.2 of the Rule on support scheme for renewable energy sources generators says:

2. *The Renewable Energy Fund finances the costs associated with:*

   2.2 The compensation for the imbalance costs to reflect the provisions in Article 11 paragraph 1.2 of this Rule

For generators under the regulated framework it is specified that all costs of imbalances will be borne by the generator.

Article 15 Rights and Obligations of RES Generating Facilities under the Regulated Framework, Paragraph 1, Sub-Paragraph 1.2 of the Rule on support scheme for renewable energy sources generators says:

1. *RES Generating Facilities not admitted to the support scheme who choose to sell their electricity output under a Regulated Framework shall:*

   1.2 be liable for all of their imbalance costs except RES Generating Facilities with an installed capacity lower than 500 kW;

According to National legislation in force, ERO is responsible for monitoring of the operation of the market for electricity, ensuring efficient functioning of the market, and to identify any remedial actions that are required, but there are no specific provisions regarding the monitoring of balancing mechanism.

Balancing Mechanism has started in April 2017 and first three months was operating as Dry Run, whereas the financial settlement started from 1st June 2017.

ERO, in cooperation with KOSTT, was monitoring the responsible parties of the mechanism identifying weaknesses of the final settlement. During this monitoring phase, ERO identified some minor problems, mainly in energy nomination, which were rectified after many meetings and clarifications between ERO and responsible parties.

NORTH MACEDONIA

The main change in legislation related to balancing is the change made in Energy Law. The new Energy Law foresees exclusion of Balancing Rules from Market Rules. Energy Regulatory Commission in North Macedonia (ERC) has a crucial role in process of improving the methodology for imbalance calculation. TSO is preparing New Balancing Rules, so improvement in calculation of imbalances is expected. Proper nomination and realization driven by optimized production and consumption will lead to reduction of the costs of imbalance. New Balancing Rules is planned to be implemented in 2019.

It is foreseen that improvements in IT infrastructure will be implemented in the next 3 years' period.

Regarding the RES treatment in the balancing mechanism, according to the Energy Law, Electricity Market Operator is balancing responsible party for all incentivized RES generators,

The ERC is completely responsible for monitoring of balancing mechanism, taking in consideration that in accordance with existing primary legislation the ERC adopts the Electricity Market Rules, including the rules for operation of balancing mechanism.

MONTENEGRO

Market based balancing has been introduced by primary and secondary legislation in Montenegro. The new Energy Law has been adopted in January 2016 and is in compliance with the 3rd Energy Package. The Energy Law foresees additional bylaws which would make implementation of market-based balancing mechanisms possible. All respective bylaws were updated, including the Market Rules. The Amendment to the Market Rules, dated 14 July 2017, abolished the zones of tolerance whereby significantly improving the balancing mechanism in terms of elimination of surplus funds.

The Balancing Market Rules envisage a trading platform, as the central platform for trading of balancing services, which will be operated by the TSO. Montenegrin TSO, CGES, is planning to procure such platform and it is foreseen to be fully operational in the summer of 2019.

Cross-border electricity exchange of Tertiary Reserve is currently functioning between Montenegro, Serbia and Bosnia and Herzegovina. In 2019 it is expected that North Macedonia will join this initiative and Albania is interested in similar cooperation.

Regarding the imbalance netting, the cooperation between CGES, EMS and MEPSO is planned to start in 2019. Furthermore, CGES started with activities on becoming an Observer in regional initiative IGCC (*International Grid Control Cooperation*).

Regulatory Energy Agency of Montenegro (REGAGEN) is actively supporting national working groups in charge of transposition of 3rd legislative package in national bylaws and is giving full assistance in implementation of so-called WB6 soft-measures regarding the cross-border balancing.

Action plan for eventual changes related to balancing does not exist. Modification of primary and secondary legislation in this respect will be coordinated with activities related to adaptation of respective EU legislation to be approved by Ministerial Council.

According to Energy Law, REGAGEN is obliged to monitor entire electricity sector, as well the balancing mechanisms that are in place. Monitoring is based upon the Annual Monitoring Plan.

SERBIA

There is market-based Balancing mechanism in place in Serbia, defined properly within the Market Rules and according to the Energy Law. . The Serbian TSO (EMS AD) intention to be fully operationally incorporated within the European Imbalance Netting project (single balancing platform for Imbalance Netting – IGCC) will be reviewed by the Energy Agency of the Republic of Serbia and if necessary associated amendments of the Grid Code and Market Rules will be triggered.

There is a plan to make changes in the Market (Balancing) Rules in order to adapt them for introducing European Balancing Platforms in accordance with Guidelines on Electricity Balancing (GLEB).

Regarding the improvements of IT infrastructure, Serbian TSO (EMS AD) has finalized the implementation of the new Market Management System (MMS - the System for Electricity Market Management) in December 2017. All EU standards in the area of the Balancing, Scheduling, BRP Settlement have been implemented within this new system, and the module for the key market data collection from these processes has been additionally implemented, which has been used for data delivery to the EMFIP (Transparency) platform.

During 2019, the Serbian TSO (EMS AD) will upgrade the MMS System in the domain of the Imbalance Netting Process (part of the changes will be related to the EMS AD role as the operator of the SMM, while the other part will be related to the changes which are necessary for the integration within the pan-European EU platform for the Imbalance Netting – IGCC Platform).

Related to the RES treatment, Renewable Energy Sources in Serbia are under the feed-in tariff regime so there are no conditions for them to participate in the Balancing Electricity Market at the moment. RES treatment related to the Balancing Responsibility is defined in the Energy Law.

According to the Energy Law, the Agency is in charge to take the monitoring function over the correct Market (Balancing) Rules implementation and realization and detect any market participant deviation. In line with the Balancing Monitoring function, the Agency is requesting the licensed market participants (generation, consumption, supply) and the TSO to provide regularly data to the Agency as defined within the Information Code Monitoring tables and publishes them in the Annual Report.

UKRAINE

It is expected that balancing mechanism foreseen in the Electricity Market Law (2017) and Market Rules (adopted by NEURC in March, 2018) will start to apply from the 1st of July, 2019.

Electricity Market Law and Market Rules provide establishing two separate market segments putting the balancing mechanism into functioning – ancillary services market (reserves, voltage control, black start) and balancing market (balancing energy).

Ancillary services will be procured by the TSO on the basis of auction and/or on contractual basis (if there is in place a deficit or dominant position of ancillary service provider for certain type of ancillary services). If the amount of the proposed ancillary service is smaller than the TSO's needs in this service, or if the ancillary service is provided by ancillary service providers whose share on the market of these services exceeds the threshold established by the Regulator, the latter may impose the obligation on the ancillary service provider to provide this ancillary service at the price calculated using the methodology approved by the Regulator.

Producers shall provide balancing services, while consumers are also entitled to provide balancing services in accordance with the procedure determined by the Market Rules. Balancing energy shall be sold / bought by the balancing service providers based on marginal pricing or "pay as bid" principle (if this balancing energy is used by the TSO to manage system constrains).

All market participants shall be financially responsible for their imbalances. Market participants may unite into balancing groups on a voluntary contractual basis, provided that they comply with the standard requirements to balancing groups prescribed in the Market Rules.

The Electricity Market Law provides the "testing period" during a half year before the comprehensive launching of all market segments.

The implementation of new TSO's IT infrastructure for the ancillary services and balancing markets, settlements and commercial metering is stipulated by the Electricity Market Law. On the 19th of July, 2018 the Ukrainian TSO (SE "NPC Ukrenergo") signed a contract for procurement of software for the balancing and ancillary services markets with an integrated solution to the settlements system. The tendering procedures for purchasing software for commercial metering are ongoing for the moment.

Regarding the RES treatment in balancing mechanism, Electricity Market Law foresees the requirements for RES producers under the green (feed-in) tariff support scheme to sell all energy they produce to the Guaranteed Buyer (state entity which shall be established specifically for the purpose of RES support scheme) at the green tariffs set to them. The

Guaranteed Buyer shall act as balance responsible party on behalf of RES producers towards the TSO. The Electricity Market Law provides for transition period to introduce gradually the balance responsibility for different types of RES producers. From 2021, RES producers under the green tariff will be obliged to bear a share of 10% of imbalance costs they produced. It is foreseen that the share is going to increase every following year by 10% so in 2030, RES producers will be fully responsible for their imbalances.

Depending on the primary energy source, imbalances will be treated differently for RES producers under green tariff.

From 31 December of the year in which all RES producers reach the share of 5 and more percent in the annual energy balance of Ukraine, the reimbursement of imbalance settlement cost to the Guaranteed Buyer by RES producer using wind energy shall be made in case of imbalances by more than 10%; by RES producer using solar energy – in case of imbalances by more than 5%; by RES producer using hydro power (only micro-, mini- and small hydro power plants) – in case of imbalances by more than 5%.

Confirmation that all RES producers have reached in the annual energy balance of Ukraine the share in the amount of 5 and more percent shall be made by the central executive authority authorized by the Cabinet of Ministers of Ukraine that implements state policy in the area of efficient use of fuel and energy resources, energy saving, renewable energy sources and alternative fuels.
In mentioned conditions RES producers under the green tariff do not have the opportunity to participate in the market by themselves.
The TSO has the right to issue dispatch instructions to decrease load for RES producers under the green tariff only if all available offers (bids) from other balancing service providers for the decrease of their load have been accepted by the TSO, with the exception of cases of issuing such instructions under system constraints which are the result of force majeure circumstances.

The cost of electricity not produced by RES producer under the green tariff, as a result of fulfilling the dispatch instruction of the TSO shall be reimbursed to this RES producer at the green tariff set to him, except in cases when such instruction was issued due to system constraints caused by force majeure circumstances.

Regarding the monitoring of balancing mechanism, in accordance with the Electricity Market Law, the powers of the regulator are to:

- monitor functioning of the electricity market and all its segments (including ancillary services market and balancing market);
- monitor the prices in organized market segments including balancing market;
- monitor investing in generation capacities in relation to security of supply (in particular generation which is expected to ensure reserves or other ancillary services);
- monitor fulfilling by market participants their functions and obligations in accordance with the Law, Market Rules, Transmission Network Code and other legislative acts regulating the functioning of the electricity market;

- monitor the degree of transparency of market participant's activities, including performance by market participants (except consumers) of their obligations concerning disclosure/promulgation of information.

Conclusions

In almost all CPs, the legislative set-up regarding the balancing is in place with some potential improvements needed, however the main question is *when* fully competitive market-based balancing mechanism will start functioning. In most cases there is only a single ancillary service provider so an incentive mechanism for TSOs combined with a monitoring regime by NRAs is needed to ensure that TSOs operate the balancing mechanism as efficient as possible.

The focus of balancing related activities for the majority of Contracting Parties is on implementing a market-based mechanism and subsequently cross-border exchange of balancing reserves and balancing energy, for which standardization of rules and procedures is needed to ensure early implementation of regional balancing mechanisms under development at EU level in line with requirements from Guidelines on Electricity Balancing (GLEB).

Potential changes on primary and secondary are foreseen as part of early implementation and implementation of provision related to GLEB.

Finally, a significant development and improvement of IT infrastructure as a prerequisite for efficient operation of market-based balancing mechanism is needed. TSOs, in particular those from Western Balkans, should continue to cooperate under the Western Balkans Six initiative for developing the framework for regional balancing mechanism following the EU experience.

As an outcome of this report, it is proposed to continuously conduct survey related to implementation plans for all Contracting Parties until market-based national and regional balancing mechanisms and cooperation is in place.