

# Electricity balancing market developments in the Energy Community

An Outlook

December 2017



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## Introduction

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### 1. About ECRB

The Energy Community Regulatory Board (ECRB) operates based on the Energy Community Treaty. As an institution of the Energy Community<sup>1</sup> 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 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 the reason why balancing remains in the focus of ECRB.

The reports produced so far contributed to understanding of the functioning of existing balancing models. Previous balancing report explored flexibility challenges, the integration of intermittent generation (wind, solar), parameters for assessing intermittency integration (price, limit), the state of play for balancing reserves (technical specifications, prices, volumes, information availability), provided a case study on the balancing market model implemented in Bosnia Herzegovina and state of play on market opening (number of consumers and producers, and produced energy outside of incumbent).

This report aims to focus on the perspective and future planned developments rather than assessing the existing situation. The National Regulatory Authorities (NRAs) from Contracting Parties (CP) were asked to provide a high-level outline of how they see the national balancing markets development, considering the improvements needed on practice as well as on the regulatory framework.

The report aims to provide a regulatory view on the topic given that such view continuously evolves together with market evolution.

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<sup>1</sup> [www.energy-community.org](http://www.energy-community.org). The Energy Community comprises the EU and Albania, Bosnia and Herzegovina, Macedonia, Kosovo\*, Moldova, Montenegro, Serbia and Ukraine. Georgia signed the Energy Community Treaty in October 2016. 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*].

## 2.2. Considerations

There are at least two important considerations to be taken into account that impact the quality of findings in 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 end consumers and consequently for politicians and NRAs.

## 3. Methodology

The present report is based on answers given by the NRAs to the questionnaire outlined in the text-box 1 below, aiming at identifying:

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

### Text-box 1

- (i) Diagnose:
  1. What should be improved in primary and secondary legislative, taking into account the country specifics?
  2. What improvements should be made in practice (regarding the measurement data delivery, procedures for supplier switch, etc.)?
- (ii) Concrete measures:
  1. Is there any action plan existing regarding the balancing issues?
  2. What is viable to be changed in 2017 and 2018, which is responsibility of regulator (bylaws, workshops, cooperation with ministry and energy companies, etc.)?
  3. What is viable to be changed in 2017 and 2018, which is out of the regulators responsibility?
- (iii) Monitoring
  1. What is the role of the regulator regarding the monitoring of balancing?

#### 4. Participation in the survey

Figure 1 and 2 below show the Contracting Parties participating on the present survey as well as the interconnectors between them.



Figure 1 Included CP's in the investigation<sup>2</sup>

<sup>2</sup> Used tool to create map: <https://mapchart.net/europe.html>

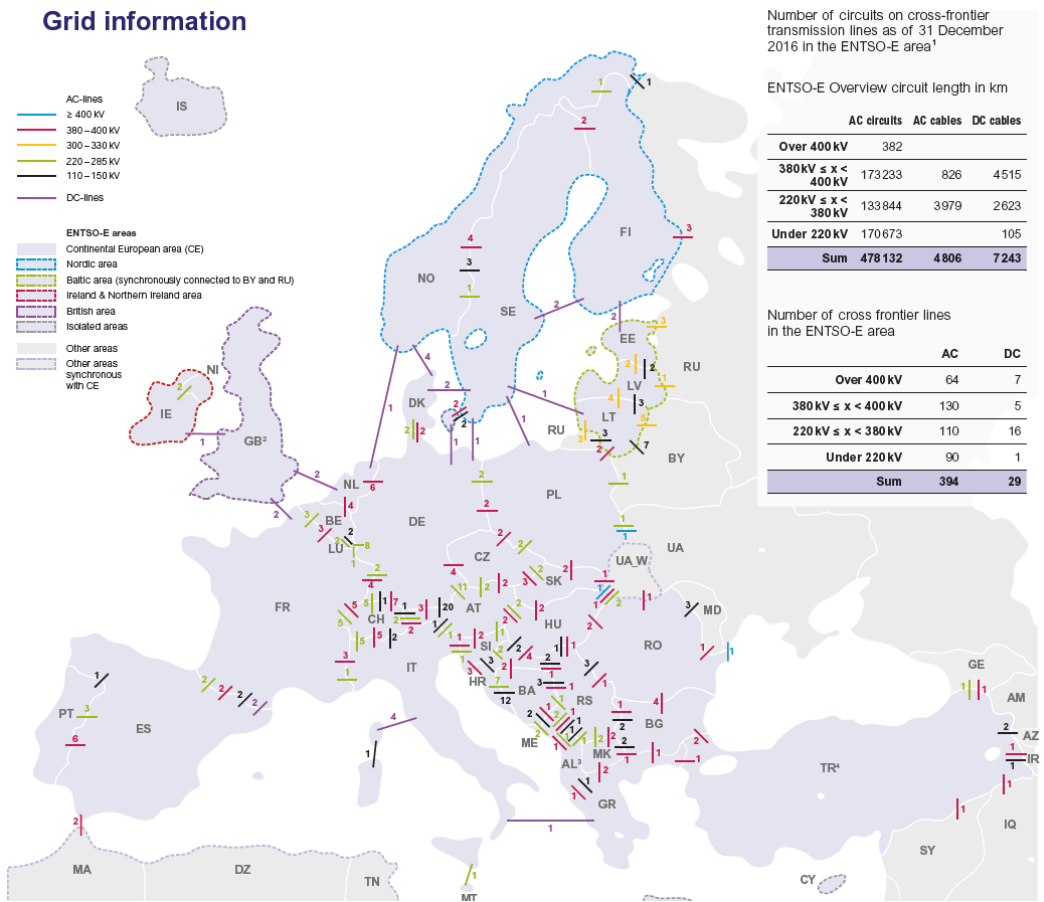


Figure 2 grid information<sup>3</sup>

<sup>3</sup> Source: ENTSO-E, “Statistical factsheet 2016”, provisional values as of 4 May 2017.

## Diagnose, concrete measures and monitoring

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### ALBANIA

Albania transposed the provisions of the 3<sup>rd</sup> package into national legislation. However, for implementation, a complete set of secondary legislation is needed. Recent activities regarding balancing are focused on two projects:

- (1) Transitional Balancing Mechanism: with the assistance provided under the Western Balkans 6 initiative, the associated rules of which are in the approval process with NRA; and
- (2) Design and Implementation of the Albanian Electricity Balancing Market: with the assistance provided by International Finance Corporation (IFC), which is currently in the development phase.

A lot of improvements are needed in practice, in particular on IT and meter-reading, in order to operationalize a market-based balancing mechanism.

The action plan regarding balancing is part of the new Market Model and “Design and Implementation of the Albanian Electricity Balancing Market”.

Regarding the monitoring of balancing mechanism, the role of NRA is foreseen in the Energy Law (43/2015). The Law defines that the regulator’s responsibility is to approve the procedures and to monitor procurement of energy for covering the balancing and ancillary services required for operating the system through competitive non-discriminatory and transparent procedures.

### ARMENIA

The implementation of market-based balancing mechanisms is not yet anticipated. The establishment of a fully competitive market in Armenia would be more realistic in case of the creation of a common regional market. Meanwhile, in accordance with the action plan of liberalization of the electricity market in Armenia, approved by the Protocol Decree of the Government of Armenia of July 27, 2017, it is envisaged that Ministry of Energy Infrastructures and Natural Resources, in cooperation with the NRA, shall develop a new Law on Energy, based on the best international practices taking also into consideration the electricity market model which is currently being implemented.

The network rules for the electricity system have been approved by the NRA and entered into force from July 1, 2017. The rules stipulate the main system services, such as: frequency and mutual cross-flow regulation, balancing, voltage regulation and electricity system restoration in the cases of total or partial electricity fading. The list of utilities which can render system services was established and those are qualified producers, except guaranteed producers, transmission companies, distribution companies and eligible customers. Nevertheless, up to

July 1, 2019 the necessary expenses for system services will be included in the electricity tariffs. After the deadline the NRA will set separate fees for each service.

Regarding the wholesale electricity market, temporary trading rules have been approved by the NRA's resolution N344-N of August 9, 2017, which entered into force from October 1, 2017. According to the rules, the company, owner of distribution license, renders a balancing service through which the electricity purchased by eligible consumer from alternative suppliers shall be balanced. Eligible consumers, in addition to other agreements, shall sign an agreement with the distribution company on balance service.

According to trading rules, the electricity cross-border trading is enabled between Armenia and Iran and between Armenia and Georgia.

Based on the procedure adopted by NRA's Resolution of June 14, 2017, monitoring shall be carried out for the purpose of controlling the compliance with the Law on Energy, the legal acts of the NRA of the Republic of Armenia, the License Terms, and also to evaluate the credibility of the reports and information provided to the NRA, as well as the factors (expenses, investments, procurements and etc.) affecting the tariffs. No separate procedure and mechanisms are foreseen for conducting monitoring of concrete balancing cases.

## **BOSNIA AND HERZEGOVINA**

Bosnia and Herzegovina is a pioneer in the Energy Community in implementing market based ancillary service procurement and balancing mechanism. With three existing incumbent generating utilities, the basic precondition for market-based competing mechanism is in place. Regarding the unintended deviations towards the neighbouring regulation areas, the energy compensation approach has been replaced with financial remuneration based on market based prices.

There are still some improvements needed such as abolishing the price cap principle for some balancing products and amending the Value Added Tax (VAT) Law necessary to harmonize taxation on cross-border exchange of balancing services.

Regarding the monitoring of the balancing mechanism, the role of the NRA 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.

## **GEORGIA**

The new electricity law, that is planned to be adopted, will be in compliance with the 3<sup>rd</sup> energy package requirements. The existing primary legislation is not fully compliant. After adopting the new electricity law, electricity market rules must be amended and balancing and imbalance settlement rules must be adopted; currently such rules do not exist in Georgia.



Balancing and imbalance settlement rules must be adopted and the imbalance settlement period (ISP) must be changed from 1 month to 1 hour or even shorter, given the 15 minutes target ruled in the EU Balancing Guidelines. Balancing rules will have to establish principles and procedures of balancing market operation. Ancillary services and balancing products (such as different types of reserves and their activation timeframe) are now defined by the grid code but practical utilization and a market mechanism is missing. Generators provide balancing energy and frequency regulation for free and, since there is no imbalance responsibility on at least hourly granularity, there is no incentive for market participants to keep their actual delivery/consumption in line with schedules.

In the existing legislative, there is no action plan foreseen regarding balancing but it is expected that new Electricity Law, that has to be adopted by the end of 2018, will contain such provisions.

The Market Monitoring Rules, including the Balancing and Imbalance Settlement Rules are to be adopted and accompanied with various workshops and trainings that will be conducted for all stakeholders of the sector.

In 2017 and 2018 it is expected that national action plan will be adopted, the new draft law on electricity will be prepared, balancing rules will be developed, balancing market IT technologies will be developed and start operation in test mode.

The NRA is authorized to conduct electricity market monitoring according to the Electricity and Natural Gas law of Georgia, but no monitoring mechanisms, procedures, indicators and rules are in place. The NRA receives annual and quarterly reports from transmission licensees, distribution licensees and generators

#### **KOSOVO\*<sup>4</sup>**

The regulatory framework regarding the balancing mechanism is in place and implementation started on 1st June 2017. Currently it is in the early stage of operation and potential weaknesses will be identified and addressed through improvements of the regulatory framework.

No action plan regarding balancing issues is existing at this moment but will be prepared in near future. Closer cooperation with Albania is foreseen as the first stage of regional cooperation. The NRA is planning to organize workshops for all relevant stakeholders.

National legislation empowers the NRA to monitor the electricity market, including the balancing mechanism. Namely, Article 16 of Law on the Energy Regulator defines: “The Regulator shall be responsible for monitoring of the operation of the markets for electricity, thermal energy and natural gas, to ensure efficient functioning of those markets, and to identify any remedial action that is required... “. This article includes monitoring of interconnectors, mechanism for congestion, market opening, balancing etc.

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<sup>4</sup> Throughout this document, 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.

## **FYR OF MACEDONIA**

Existing primary and secondary legislation related to energy issues allows for implementation of market-based balancing mechanism. In October 2016 the Energy Regulatory Agency of Macedonia (ERC) adopted amendments to the Electricity Market Code, which included a completely new balancing mechanism on national and cross-border level.

Currently, no action plan regarding balancing mechanism is in place but it is recognized as a need for fulfilment of technical criteria, which were adopted by ERC in September 2017, by the TSO, DSO and biggest generator.

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

## **MONTENEGRO**

The new Electricity Law has been adopted in January 2016 and is in compliance with the 3rd Energy Package. The Energy Law foresees, besides the existing bylaws, additional bylaws which would make implementation of market-based balancing mechanisms possible. All existing bylaws were updated, including the Market Rules, taking into account the requests of new Energy Law. The Balancing Market Rules envisage a trading platform, as the central spot for trading of balancing services, which will be operated by the TSO. Cross-border balancing mechanism is in use on the Montenegro-Serbia border ruled by the Agreement of Cross-border Tertiary Energy Exchange (PTRE).

The set of so-called market and metering bylaws were adopted<sup>5</sup> but there is still missing software tool which would provide data for full scale balancing mechanism. The Montenegrin Energy Law does not foresee any action plan.

According to Energy Law, the NRA is obliged to monitor the entire electricity sector, including the balancing mechanisms that are in place. Monitoring is based on the Annual Monitoring Plan.

As the main shortcoming, lack of liquidity on a national level has been identified but, as a remedy, actions related to regional cooperation are foreseen.

## **MOLDOVA**

No feedback has been received from Moldavia.

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<sup>5</sup> Market Rules, Metering Rules, Rules for supplier switch, Decision on setting the customer profiles, etc.

## SERBIA

The national market-based balancing mechanism and balancing responsibility concept are in force since January 2013 in line with provisions of primary/secondary legislation (Energy Law/Market Code). Based on this legislation, cross-border balancing mechanisms are also possible and a simple cross-border balancing mechanism is introduced on one border. There is cross-border tertiary energy exchange at the border Serbia-Montenegro; a contract for emergency exchange of balancing energy was signed with the transmission system operator of Bosnia and Herzegovina, whereas a model for cross-border exchange of balancing energy with the Hungarian transmission system operator is under discussion.

Improvements of the legislative framework is needed in order to introduce more complex balancing arrangements on regional and European level according to the EU Electricity Balancing Guideline.

There is a plan to update primary legislation, i.e. Energy Law, in order to exempt Renewable Energy Source generators from balancing responsibility, aiming at introducing such responsibility gradually in the course of 12 years.

Improvements are needed related to metering data acquisition and processing of market data on distribution level, as well as introducing IT systems for supplier switching.

There is no national action plan regarding the balancing issues. Primary legislation envisages annual regular actions regarding further liberalization of ancillary services market. The NRA and energy companies define actions in this field through their regular planning processes each year.

The Serbian TSO (EMS) is actively taking part in ENTSO-E working group's Market Committee on Ancillary Services together with other EU TSOs and cooperating on early implementation of the EU Electricity Balancing Guideline and the pilot regional project International Grid Control Cooperation (IGCC)<sup>6</sup>. Besides that, EMS is participating in the work of the Manually Activated Reserves Initiative (MARI)<sup>7</sup> implementation group aiming at early implementation of the EU Electricity Balancing Guidelines. EMS is performing these activities in coordination with the NRA in order to provide that the regulatory framework in Serbia (including the Grid Code, Market Rules, reports on further need for the regulation of prices for balancing reserve, etc.) is timely adapted to meet the requirements of the EU Electricity Balancing Guideline.

A special implementation plan, beside regular annual plans, is not envisaged.

Regarding the activities that are within regulator's remit, cooperation with the Ministry and energy companies regarding adaptation of market-related EU Network Codes and Guidelines for their implementation in Energy Community, their transposition into Serbian legislation and

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<sup>6</sup> The IGCC is a regional project operating the imbalance netting process which currently involves 11 TSOs from 8 countries. These are the TSOs from AT (APG), BE (Elia), CH (Swissgrid), CZ (CEPS), DE (50Hertz, Amprion, TenneT DE, TransnetBW), DK (Energinet.dk), FR (RTE), NL (TenneT NL).

<sup>7</sup> Cooperation by 19 TSOs to design, implement and operate a platform for exchange of balancing energy from Frequency Restoration Reserves with manual activation (mFRR platform)

implementation and participation in the activities of the Commission for Monitoring Market Code implementation, are foreseen.

Based on the Energy Law (Art 56 and 57) the NRA is, among other issues, entitled to monitor the balancing mechanism, including methodologies, prices and codes related to this field. In addition, the NRA prescribed, within the Information Code, the obligation for collection of all data from system operators and market participants related to balancing, in order to execute its monitoring role.

## **UKRAINE**

On April 13, 2017, the "Law On Electricity Market of Ukraine" was adopted, which transposes the provisions of the Third Energy Package. The Law came into force on June 11, 2017.

Subsequently, market rules, which amongst others, define the procedure of market participant's registration, procedure and requirements for ensuring fulfilment of obligations in accordance with agreements with the purpose of administering electricity imbalances, balancing rules, rules of ancillary services market functioning, settlements procedure in the balancing market and the ancillary services market, invoicing (billing) procedure, etc., are expected to be approved as part of secondary legislation. The market rules have to be approved by the regulator within 9 months from the day the "Law on electricity market of Ukraine" enters into force. Currently, the development of the Market Rules continues.

In addition to the adoption of the market rules, the commercial metering code must be approved within nine months from the day the "Law on electricity market of Ukraine" entered into force.

During 2017 and 2018 the main parts of secondary legislation for the implementation of the "Law on electricity market of Ukraine" are expected to be adopted.

The TSO will perform new functions and obligations, including ensuring the organization of the functioning of the balancing electricity market, and also will perform the functions of the Settlements Administrator and Commercial Metering Administrator.

Finally, in accordance with article 6 of the "Law on electricity market of Ukraine", the powers of the regulator include monitoring of the functioning of the electricity market and all its segments, monitoring prices in organized market segments including on the balancing electricity market and monitoring of fulfilment by electricity market participants of their functions and obligations in accordance with the law and other legislative acts regulating the functioning of the electricity market.

## Conclusions

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In almost all CP's, the legislative set-up regarding the balancing is in place with some potential improvements needed, however the main issue is when the market-based balancing mechanism will start functioning. In most cases there is only a single ancillary service provider and a single service user on national level.

The focus of balancing related activities for the majority of Contracting Parties seems to be 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. Optimisation of resources on regional basis is only possible under a competitive regional market. An incentive mechanism for TSOs, together with the monitoring regime for NRAs, is needed to ensure that TSOs have the right incentives to operate the balancing mechanism as efficiently as possible.

TSOs should work on regional level on the technical prerequisites necessary for balancing reserves and balancing energy exchange. 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. Voluntary work by EU TSOs on different regional balancing projects is a good example of cooperation that could be applied by the Contracting Parties.

## Proposal for next steps

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As an outcome of this report, it is proposed:

- 1) to continuously conduct survey related to implementation plans for all Contracting Parties to the extent that adequate balancing mechanisms are not in place yet.
- 2) to do further analysis of the imbalance price formation in the CPs.