



BOSNIA AND HERZEGOVINA

STATE ELECTRICITY
REGULATORY COMMISSION

ANNUAL REPORT 2018



Bosnia and Herzegovina

STATE ELECTRICITY REGULATORY COMMISSION

**REPORT ON ACTIVITIES
OF THE STATE ELECTRICITY REGULATORY COMMISSION
IN 2018**

Tuzla, December 2018

Report on Activities of the State Electricity Regulatory Commission follows the reporting approach of regulatory authorities in the European Union and Energy Community requirements, with some adaptations reflecting the characteristics of the regulatory framework in Bosnia and Herzegovina.

We kindly ask any user to cite the source if using data from this Report.

Content

1.	INTRODUCTION	1
2.	COMPOSITION AND ORGANISATION OF WORK OF THE COMMISSION	3
3.	KEY ACTIVITIES	7
3.1	SERC Rules and Documents.....	7
3.2	Documents Approved by SERC	11
3.3	Licensing Proceedings	16
3.4	Monitoring of Activities of Licensed Entities.....	18
3.5	Dispute Resolution.....	21
3.6	Technical Aspect of Transmission System Operation	22
3.7	Tariff Proceedings.....	26
3.8	Electricity Market	29
3.9	Energy Statistics.....	38
3.10	Other Key Activities	42
4.	ACTIVITIES IN INTERNATIONAL INSTITUTIONS	47
4.1	Energy Community	47
4.2	Energy Regulators Regional Association – ERRA.....	53
4.3	Mediterranean Energy Regulators – MEDREG.....	54
4.4	Council of European Energy Regulators – CEER	55
4.5	International Confederation of Energy Regulators – ICER.....	56
4.6	Cross-Regional Cooperation	57
5.	AUDITING REPORT	59
6.	MAIN ACTIVITIES IN 2019	61
ANNEXES		
A:	Basic Data on the Electric Power System of Bosnia and Herzegovina	65
B:	Map of the Electric Power System of Bosnia and Herzegovina	67
C:	Balance Values of the Electric Power Sector of Bosnia and Herzegovina	69
D:	Electric Power Indicators of Bosnia and Herzegovina	71
E:	Energy Community <i>Acquis</i>	73

1. INTRODUCTION

The sustainable energy sector development is an imperative task of both policy makers and regulators and accountable companies and customers at global, regional and local level. The decisions passed at national and European level are interdependent defining how to meet energy needs, at what economic price and with what environmental consequences. The changes affect the energy generation, transportation and consumption patterns and have an impact on the present and future generations. These challenges become at the same time a new potential for the sector – some new flexible relationships are made possible among service providers and users, suppliers and customers, which offer more efficient market functioning modalities. Energy transition is both a challenge and an opportunity for a new impetus to the development of the energy sector, economy and society as a whole.

The State Electricity Regulatory Commission is an independent institution of Bosnia and Herzegovina, which acts in accordance with the principles of objectivity, transparency and non-discrimination, and has jurisdiction over and responsibility for the transmission of electricity, transmission system operation and international trade in electricity, as well as generation, distribution and supply of electricity for customers in the Brčko District of Bosnia and Herzegovina.

SERC is a non-profit institution and is financed by regulatory fees, which are paid by the licensed entities.

In 2018, Bosnia and Herzegovina (BIH) made some important steps in the integration process towards the European Union. The answers and follow-up questions of the European Commission to the Questionnaire of the European Commission for the preparation of the Opinion on the BIH Application for the membership of the EU, which were prepared for Chapters Energy, Trans-European Networks and Consumer and Health Protection will enable detailed identification of further activities necessary to implement the *acquis* of the European Union on the internal market.

During 2018, the State Electricity Regulatory Commission (SERC) continued its regulatory mission in the sector creating conditions for unhindered trade in electricity and reliable electricity supply with continuous monitoring of the licensed entities. Jointly with other regulators in the region, SERC participated in the implementation of concrete measures for regional electricity market development and its integration into the EU market.

The market principles in the segment of ancillary services and power system balancing have become fully operational in BIH and set an example of a successful model in South-East Europe. Although the wholesale market has not been institutionalised yet it shows an impressive scope of trading. On the retail market, customers that switched their suppliers accounted for 14.7 % of final energy consumption. Furthermore, tens of thousands of customers changed the supply conditions by modifying contracts with their previous traditional suppliers thus choosing on the open market supply offers that suited them best.

The BIH electric power system operated steadily and without any bigger problems throughout 2018. All system users were able to operate functionally in line with the defined quality standards. A new 110 kilovolts (kV) transmission line (TL) Tomislavgrad – Kupres was connected to the transmission system as well as several new 110/x kV substations (SS). The Gornji Brišnik substation was built for the connection of the

Mesihovina wind park to the transmission network. This first wind park in Bosnia and Herzegovina with installed capacity of 50.6 MW was put into trial operation on 14 March 2018. In April 2018, the first synchronisation of generators to the power system was conducted at the small hydropower plant Dub (SHPP) with installed capacity of 9.4 MW thus starting its trial operation. The Dub SHPP is connected to the transmission network through the 110/35 kV Dub substation. In November 2018, a new substation SS 110/33 kV Jelovača was put into operation, which was constructed for the connection of the Jelovača wind park with installed capacity of 36 MW whose commencement of operation is expected at the beginning of 2019.

A record in electricity generation amounting to 17,873 gigawatt hours (GWh) was reached in the past year, which is 2,721 GWh, or 18.0 % more than generated in 2017. The very favourable year in hydrological terms with intense precipitation and inflows resulted in 6,300 GWh produced by hydropower plants, which is a 64.5 % increase. Generation by thermal power plants reached a record of 10,954 GWh, which is 35 GWh, or 3.0 % more than in the previous year. The first wind park connected to the transmission system – Mesihovina injected 103.5 GWh into the network. A significant increase in generation was registered by small-scale renewable generation (small hydropower plants, wind parks connected to the distribution system, solar and biofuel plants) amounting to 498.21 GWh, or 31.0 %. Industrial power plants produced 17.44 GWh.

Total electricity consumption amounted to 13,294 GWh or 0.5% less than in the previous year. Consumption of customers connected to the transmission system increased by 1.6 % amounting to 2,604 GWh, while consumption of customers connected to the distribution network decreased by 0.4 % amounting to 10,139 GWh.

The maximum load of the power system in the past year amounting to 1,994 MW was reported on 18 December 2018 at the 18th hour, which is less than the historic maximum of 2,207 MW reported at the same hour on 31 December 2014.

Total electricity in the transmission network amounted to 20,326 GWh, which is 12.95 % more than in 2017. Transmission losses amounted to 399 GWh, or 1.96 % of total energy in the transmission network. The trend of reducing distribution losses continued and they amounted to 950 GWh, or 9.37 % in relation to gross distribution consumption, which is the lowest level in the history of the BIH power sector.

In 2018, a total of 6.472 GWh, or 25.4 % more than in the previous year, was exported, while electricity imports amounted to 1,865 GWh, which is a decrease of even 43.9 % compared to 2017. Registered electricity transit through the BIH transmission network amounted to 2.959 GWh, which is 316 GWh, or 9.7 % less than in the previous year.

2. COMPOSITION AND ORGANISATION OF WORK OF THE COMMISSION



The State Electricity Regulatory Commission was established by the Parliamentary Assembly of Bosnia and Herzegovina by adoption of the Law on Transmission of Electric Power, Regulator and System Operator of BIH, and by appointment of the Commissioners.

The Commissioners from the Federation of Bosnia and Herzegovina are:

- Mr. Suad Zeljković, with a five-year term (from 11 June 2016), and
- Mr. Nikola Pejić, with his second five-year term (from 11 June 2016).

The Commissioner from the Republika Srpska is

- Mr. Milorad Tuševljak, with a five-year term (from 10 August 2011).

It is evident that the first five-year term of the Commissioner from the Republika Srpska expired. Having in mind that the *Law on Transmission of Electric Power, Regulator and System Operator of BIH* sets forth that the Commission operates with a full complement of the Commissioners and make decisions by a unanimous vote, and taking into consideration the existing practice, Mr. Milorad Tuševljak will perform this function until the completion of the procedure for the appointment of the Commissioner from the Republika Srpska for a new term.¹

Since the establishment of the State Electricity Regulatory Commission, the Commissioners rotate in the position of the Chairman equally on an annual basis. Until 30 June 2018, this function was performed by Mr. Nikola Pejić. Mr. Milorad Tuševljak is the current Chairman of the Commission until 30 June 2019.

In line with the Law, SERC was established as an independent institution of Bosnia and Herzegovina, with the obligation to act in accordance with the principles of objectivity, transparency and non-discrimination. These principles have been incorporated in all SERC legal documents and implemented in all procedures. This method of operation has been adjusted to the maximum extent possible to the *Policy Guidelines of the Energy Community Secretariat on the Independence of National Regulatory Authorities* from January 2015. Incorporated in rules and continuously implemented in practice, the independence of the State Electricity Regulatory Commission has been shown and demonstrated in all areas including political, legal, social and financial dimension.

¹ At the time of the creation of this Report, the procedure for the appointment of the Commissioner from the Republika Srpska is in process before the Council of Ministers of Bosnia and Herzegovina. It was preceded by a proposal put forward by the Republika Srpska Government which was then confirmed by the Republika Srpska National Assembly. The Council of Ministers of Bosnia and Herzegovina proposes the appointment of the Commissioner to the Parliamentary Assembly of Bosnia and Herzegovina.

The EU energy *acquis*, which becomes mandatory for Bosnia and Herzegovina in line with the mechanisms established under the Treaty establishing the Energy Community, especially highlights the correlation between the regulatory independence and reform implementation and introduces expanded powers and enhances regulatory independence, in particular with regard to market monitoring and imposing sanctions for anti-competitive behaviour.

Pursuant to the Law, the basic provisions on competence, organisation and method of work, financing, transparency and the protection of confidential data are regulated by the *Statute of the State Electricity Regulatory Commission* adopted in 2003, immediately after the establishment of SERC followed by amendments in 2004 and 2009. In December 2017, the *Decision on amendments to the Statute* was adopted which clearly prescribed the exclusive organisational and formal role of the Chairman of the Commission without any additional powers in presenting, representing or decision-making of SERC in relation to the other two Commissioners. Consequently, any excessive formalism has been avoided with regard to registration of any modification of data in statistical, tax and other registers.

The work of SERC is organised within four departments:

- Tariff and Market Department,
- Licensing and Technical Affairs Department,
- Legal Department,
- Financial and Administrative Department.

With the aim of performing tasks in a more efficient manner, thematic working teams are formed on a needs basis at SERC in the work of which employees from different sectors participate.

SERC follows the requirements of regulatory practice by using different methods to improve its knowledge and experience, that is, to strengthen its professional capacities. The improvement of knowledge is achieved by participation in different professional symposiums, conferences and topical seminars, in the country and abroad, and by distance e-learning, which has become dominant in practice of the Commission. In addition, systematic training aimed at continuous harmonisation of knowledge, skills and practice with the needs and expectations of the institution is provided by specialised workshops of the Energy Community Secretariat, training programs of the Energy Regulators Regional Association (ERRA) and seminars of the Directorate for European Integration aimed at the process of accession and integration of BIH into the European Union.

A particular contribution to professional training in 2018 was provided by the *United States Agency for International Development* (USAID) through its *Energy Investment Activity* (EIA) Project and *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ)



The Report on Activities of the State Electricity Regulatory Commission in 2017 was reviewed

- *at the 61st session of the House of Representatives of the Parliamentary Assembly of BiH, held on 17 May 2018, and*
- *at the 42nd session of the House of Peoples, held on 5 June 2018.*

Both Houses of the Parliamentary Assembly of Bosnia and Herzegovina adopted the Report on Activities of the State Electricity Regulatory Commission in 2017.

GmbH (German Agency for International Cooperation) through the project *Promoting Renewable Energy in Bosnia and Herzegovina*, within which several educational workshops were organised covering different thematic contents.

SERC will remain dedicated to ensuring continuous professionalism of human resources through the well-established as well as new training methods and the use of modern communication tools. The justification of this approach has been confirmed by information, communication and presentation competence of a high number of individual employees to successfully present their knowledge and experience at national and international professional gatherings.

In addition to professional training of its employees, the State Electricity Regulatory Commission also informed and shared experiences on regulatory practice with regulated companies' employees, and participated in professional training of staff of other regulatory authorities in the region. Furthermore, SERC provided quality professional information on the energy sector and its reform not only to specialists in the sector but also to the wider public, with special training organised for public media representatives.

Large volumes of different documents have been created as a result of SERC activities. The number of documents and information has been constantly increasing. SERC, as the creator, organises the keeping, evaluation, extraction and protection of the registry office material under the professional supervision of the Archive of Bosnia and Herzegovina. This cooperation enables these processes to develop in line with professional principles, experiences and recommendations and through mutual familiarisation of the two institutions.

In the reporting period, SERC used the possibility of implementing a modern method of organising records management, and in compliance with the prescribed standards and rules of the BiH Council of Minister, continued using an electronic records management system. In addition to the efficient entry and search of data as well as archiving a large number of documents in the digital form, the introduced system created the prerequisites for modern business process management and the integration with other business systems. In this process, good practice as recommended by the Office for Auditing of the Institutions of Bosnia and Herzegovina in their performance audit reports was taken into consideration.

Acknowledging the importance of free access to information as a fundamental characteristic of the transparent and accountable action by any public authority, and remaining committed to acting along these lines on a permanent basis, SERC allows the wider public to have an insight into its work and decision-making processes, going beyond the mandatory framework in

this field as stipulated by the *Law on Freedom of Access to Information in Bosnia and Herzegovina*.

SERC implements these efforts in practice by publishing all relevant information on its official website as well as in print media in a timely manner, by presenting its draft documents and notifying and inviting the public to participate in the creation thereof.

This is also confirmed by SERC action upon all submitted requests for access to information within legally prescribed deadlines. In the first and second quarter of 2018, no requests for access to information were received. In the third quarter five of these requests were processed while in the fourth quarter one request of this type was processed. No exemptions for disclosure of requested information were applied in any of the six submitted requests nor were there repeated requests by the applicants concerning the same issues, while after the provision of the requested data SERC received appreciations for its prompt and complete responses.

3. KEY ACTIVITIES

In 2018, the State Electricity Regulatory Commission held 14 regular sessions and one extraordinary session, 25 internal meetings and organised nine public hearings, of which six were of general and three of formal nature.

In the reporting period, in a transparent manner and by holding relevant public hearings in which interested members of the public were allowed to give their comment along with power sector stakeholders, the Commission conducted the activities with regard to adoption and approval of a range of documents, tariff setting, granting of licences, and carried out other activities of which the most important ones are grouped in the clusters provided below.

Transparency towards the public through consultation and communication with all interested professionals, as well as the wider public, is the fundamental orientation of the Commission, which is conducive to checking the suitability of proposed solutions before their final adoption. The practice of the mutual exchange of collected public comments in the same or similar procedures is applied by all three regulatory authorities in the energy sector of Bosnia and Herzegovina.

3.1 SERC Rules and Documents

Connection Network Codes

Harmonisation, that is, unambiguous regulation of a whole set of rules for network operation was recognised in the Third Energy Package of the EU.² In line with this, the EU Member States, with full participation of the European Network of Transmission System Operators for Electricity (ENTSO-E) and the Agency for the Cooperation of Energy Regulators (ACER) conducted a complex activity of developing codes and guidelines for operation of networks (*Network Codes*). The set of these codes in the field of electricity includes codes on market, system operation and connection:

Market Codes

- Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management (CACM),
- Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation (FCA), and
- Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (EB).

² Establishment of network codes is defined in Article 6 of Regulation (EC) 714/2009, that is, of Regulation (EC) 715/2009.

Documents under regulatory competences are reviewed and determined in regular sessions, in accordance with the authorities prescribed by the law; issues and documents of an organisational and administrative nature are reviewed and adopted in internal meetings.

With a view to soliciting comments of interested parties and members of the public on rules and regulations, or on any other document, SERC organises general public hearings. With a view to resolving technical issues during the proceedings and processing of procedural or essential issues, technical public hearings are held. With a view to establishing decisive facts, based on which SERC may resolve certain applications or disputes, formal public hearings are held.

Regular sessions and all public hearings are open to the public.

Code and innovated rules which ensure the application of the provisions of these Regulations with shorter deadlines for implementation, and to ensure the compliance of its rules with all requirements under these Regulations in the forthcoming period. In its Decision SERC called upon the Regulatory Commission for Energy in the Federation of Bosnia and Herzegovina, the Regulatory Commission for Energy of the Republika Srpska and other relevant authorities to ensure the compliance of their relevant acts with the requirements under the connection codes.

During 2018, in coordination with the ISO BIH, SERC defined the *Draft Rules on Connection Network Codes* transposing the part of the connection network codes under SERC competence which are to be implemented without delay. A general public hearing on this document will be held in the middle of January 2019. The adoption of the Rules is expected during February 2019, when it is also planned to approve a new Grid Code whereby the part of the connection network codes under ISO BIH competence will be transposed.

Rules of Ancillary and System Services and Balancing of the BIH Power System

During the past several years, aware of the importance of ancillary services and balancing of the power system, the State Electricity Regulatory Commission in cooperation with the ISO BIH and other power utilities conducted a range of activities which resulted in a new method of providing ancillary services and balancing of the BIH power system.

A Concept of Ancillary Services for the balancing of the power system of Bosnia and Herzegovina, as defined in March 2014, specified the basic solutions, illustrated a considerable number of procedures which had to be developed and strategically paved the way for further trends in completion of the existing regulatory framework for the provision of ancillary services for the power system balancing. The Concept includes solutions for energy and financial calculation of imbalances, i.e. daily schedule deviations by balance responsible parties, while with the introduction of a system service tariff the financial settlement is enabled between the ISO BIH as the balancing market operator and the market players who provide their service on that market.

A number of activities of SERC and the ISO BIH, which were described in detail in the previous Reports on Activities of the Regulatory Commission, resulted in a set of rules and decisions whereby on 1 January 2016 the market principles had been introduced in the formerly fully regulated method of providing ancillary services and balancing the BIH power system. In this manner, the functionality of open wholesale and retail electricity markets in Bosnia and Herzegovina was enhanced (please see Section 3.8).

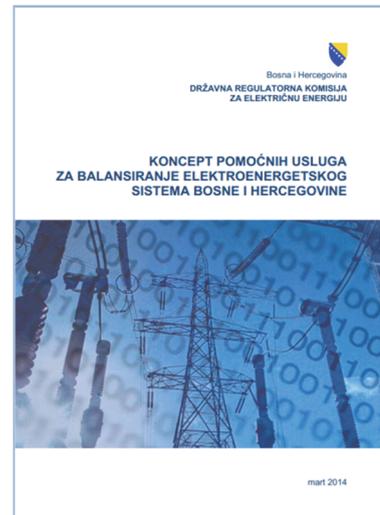
In the past three years, the electricity balancing market in BIH operated successfully and it sets an example of a successful model in South-East Europe. However, taking into consideration the early phase of implementation and dynamic nature of this market, SERC closely monitored its operation and modified the documents regulating its operation as appropriate.

In this context, the ISO BIH also amended the supporting documents of the Market Rules several times (*Procedures for Ancillary Services and the Rules on Daily Balancing Energy Market Operations*). Amendments to the 2018 Procedures were made in the sections referring to nomination and monitoring of secondary control quality. The innovated Rules, which are applicable as of January 2018, further encourage ancillary services providers to nominate voluntary bids for balancing energy (various types of bids were introduced, minimum time for voluntary bid engagement was shortened to 30 minutes, modifications were made within intraday activities etc.). Furthermore, the section on *Determination of Imbalance Price* was included in the Rules defining the price in case if there are no bids realised for secondary control reserve and tertiary reserve has not been activated.

With the aim of improving the functioning of the balancing market and the system of ancillary services, in June 2018 a meeting was held with all ancillary services providers. On that occasion, the need to develop a separate document was identified which would deal with the calculation of imbalances by balance responsible parties (BRP) if caused by developments on which a BRP cannot influence directly, for example in case of failures of generation facilities due to problems in the power transmission system (outage of transmission lines, transformers, etc.). In this context, the development of a study was initiated on the improvement of the balancing mechanism, i.e. balancing market and preparation of the Market Rules revision.

With the successful balancing market development, the offer of services increased significantly and the needs for ancillary services in 2019 had already been met to a significant extent through annual bids organised by the ISO BIH at the end of 2018 (electricity to cover loss in the transmission system as well as reserve capacity for upward and downward tertiary control is fully provided, while secondary control in the peak and off-peak periods is provided in full and in an amount of 78.5 % respectively). The missing volumes of secondary control reserve capacity in the off-peak period will be purchased on a monthly basis.

Price increases on the regional wholesale market reflected on the price trend on the balancing market in BIH, so an average price of energy for covering of losses in the transmission system reached at the bid for 2019 amounts to 69.52 €/MWh, which is 34.4 % higher than the same value in 2018. Unlike energy, prices of secondary and tertiary capacity decreased, so, for example,



tertiary reserve was purchased at an average price of 1.81 €/MW/h, which is 15.6 % lower than in the previous year.

3.2 Documents Approved by SERC

Indicative Generation Development Plan

An *Indicative Generation Development Plan* is developed for a ten-year period every year. The purpose of the plan is to inform the current and future users of the needs and existing projects for construction of new generation capacities. At the same time, this plan is used as one of the bases for the development of a *Long-Term Transmission Network Development Plan in Bosnia and Herzegovina*, which is also developed every year covering a ten-year period including the issue of new cross-border lines.

The main objective of the Indicative Generation Development Plan is to analyse the balance of capacity and energy in the transmission network for the following ten years. The development of this document is also in the function of fulfilling obligations towards the European Network of Transmission System Operators for Electricity (ENTSO-E).

The Independent System Operator in BIH, as all other system operators within ENTSO-E, is obligated to provide its contribution to the development of the *European Ten-Year Network Development Plan (TYNDP)*, which is prepared on a biannual basis pursuant to Regulation (EC) No 714/2009 on conditions for access to the network for cross-border exchanges in electricity.³ In this context, the ISO BIH is obligated to submit BIH power system development plans, which are based on consumption and generation including new sources, and planned reinforcements of the internal transmission network and interconnections. These activities presume and imply full coordination at the regional level with the analysis of potential congestion in the internal network and cross-border lines.

An electricity consumption forecast for the period from 2019 to 2028 was developed using the experience gained in the preparation of this type of plans, taking into consideration the existing trends as well as assessments of various international and national institutions. Furthermore, the trend in gross domestic product was an important factor while forecasting electricity consumption, for which data and projections of international financial institutions were used.

For the development of the *Indicative Generation Development Plan for the Period 2019 – 2028*, adequate input data were pro-



³ TYNDP 2018, that is, the latest *European Ten-Year Transmission Network Development Plan* was revised following public consultation and published on 19 December 2018 when it was submitted to the Agency for the Cooperation of Energy Regulators (ACER) pursuant to Regulation 714/2009.

vided, although some transmission system users do not provide data in accordance with the Grid Code provisions, primarily in the field of consumption. Furthermore, it is evident that some investors make unrealistic projections concerning the year when a facility would be put into operation, in which case the ISO BIH provides its own projection. In terms of providing information on the dynamics of connecting new generation facilities to the transmission network, the need for a more significant contribution by the relevant entity ministries and regulatory commissions was recognised.

A public hearing on the document, held in March 2018, focused on consumption forecasts, new generation facilities and balances of capacity and energy in the transmission network. The balances of capacity and energy for the following ten years indicated the necessity to construct some new generation capacities.

The State Electricity Regulatory Commission adopted a *Decision on approval of the Indicative Generation Development Plan for the Period 2019 – 2028* in May 2018.

Long-Term Transmission Network Development Plan

The development of a Long-Term Development Plan ensures that obligations towards the European Network of Transmission System Operators for Electricity (ENTSO-E) concerning contributions to the development of the European Ten-Year Network Development Plan are met more adequately.

Pursuant to applicable legal provisions, a long-term transmission network development plan is developed on an annual basis and covers the forthcoming ten-year period. The Long-Term Plan for the forthcoming ten-year period should be submitted to SERC for approval by the end of October. The relevance of the Long-Term Plan is reflected in the fact that based on this plan Elektroprenos BIH prepares its annual investment plan and submits it to SERC for approval by the end of November for the following year.

At the beginning of November 2017, Elektroprenos BIH submitted to the ISO BIH the *Long-Term Transmission Network Development Plan for the Period 2018 – 2027* for review and revision. Having received an ISO BIH Report on review of the Plan, at the end of 2017 Elektroprenos BIH submitted to the ISO BIH a revised Long-Term Plan which was approved by the ISO BIH Steering Committee on 9 February 2018.

The *Long-Term Transmission Network Development Plan for the Period 2018 – 2027* was submitted to SERC for approval in the middle of February 2018, with a delay of several months. This planning document defines the required reinforcements of the existing transmission network facilities and construction of the new ones to ensure timely commencement of activities with regard to designing, constructing and putting into operation of infrastructure necessary for the continuous supply and system stability. The transmission network planned in this manner pro-



vides the same conditions for the users already connected and those to be connected to the transmission network. It implies uniform conditions related to the condition of the transmission network in terms of lifespan and refurbishment of equipment, construction of new facilities and operational readiness of facilities used for the transmission of electricity.

The required funds to implement the investments planned in the period from 2018 to 2027 amount to € 347.10 million. An amount of € 98.76 million was earmarked for construction of new facilities, including an amount of € 88.27 million for new substations and transmission lines and € 10.48 million for new interconnectors. An amount of € 241.33 million is required for reconstruction, i.e., improvements and necessary extensions, of which an amount of € 78,83 million is required for reconstruction and extension of substations, for reconstruction of transmission lines an amount of € 64.66 million is needed, while for replacement of the SCADA system (supervisory control and data acquisition), refurbishment of telecommunication equipment and installation of shunt reactors to improve voltage regulation in the power system an amount of € 4.09 million, € 18.41 million and € 7 million is required respectively.

After completing the analyses, in March 2018 SERC passed a *Decision on approval of the Long-Term Transmission Network Development Plan for the Period 2018 – 2027*. On that occasion, a Conclusion was adopted comprising SERC observations and views stemming from the review of the Long-Term Plan as well as regulator's requirements towards the ISO BIH and Elektrorenos BIH as the regulated companies.

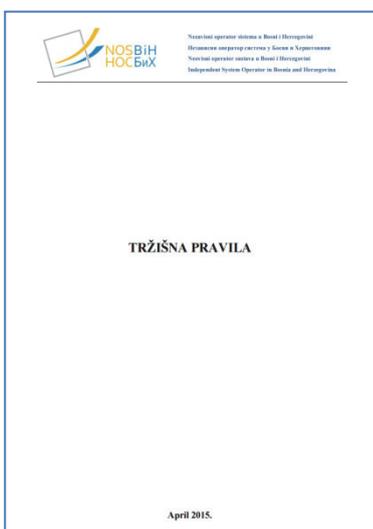
Market and Grid Codes

The State Electricity Regulatory Commission closely monitored the implementation of the Market and Grid Codes in 2017.

The *Market Code* regulates relationships between the ISO BIH and licensed players on the electricity market. The purpose of the Code is to create conditions for safe operation of the BIH power system, including efficient procurement of ancillary services and provision of system service, balancing of the BIH system at the lowest possible costs, and efficient functioning and further development of the wholesale and retail electricity markets in Bosnia and Herzegovina.

The Market Code is an exceptionally demanding technical document which includes the basic concept of market design, legal and regulatory framework for market design, technical preconditions for market functioning and provides a number of procedures regulating technical and commercial relationships among market players.

The applicable Market Code was approved by SERC in May 2015 with the effective application commencing as of 1 January 2016.



The *Grid Code* is one of the key documents for functioning of the power system and electricity market in Bosnia and Herzegovina. It regulates the method of planning and developing the transmission system, connection requirements (procedures, contracts, criteria), the method of operational planning (demand forecast, network constraints management) and operational activities (dispatching, procedures, communications), measures in unexpected situations (consumption control, operational restoration of the system after total or partial breakdown), metering code in the power system and other necessary technical measures for quality and reliable transmission system operation.

The purpose of the Grid Code is to define elements relevant for secure and reliable functioning of the BIH power system, enable development, maintenance and operation of the transmission network in compliance with the applicable rules and existing European practice.

The new Grid Code, approved in September 2018, represents a quality step forward in structural and normative terms, additionally defines the preparation of planning documentation and connection procedures and takes over to a significant extent the standards as defined by the European network codes including innovated scopes of voltage levels for normal and contingency operation.

Rules for Allocation of Cross-Border Transmission Capacities

The Coordinated Auction Office in South East Europe (SEE CAO) with the seat in Podgorica was formally established on 27 March 2014 commencing its operational activities on 27 November 2014 when annual auctions on the borders BIH – Montenegro and BIH – Croatia were organised.

During 2018, SEE CAO organised its activities in line with auction rules for capacity allocation as approved by separate decisions of competent national regulators in the region, including the State Electricity Regulatory Commission. These rules include:

- Harmonised Allocation Rules for long-term transmission rights pursuant to Article 51 of Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation,
- Specific annex for the bidding zone borders serviced by the Coordinated Auction Office in South East Europe (CAO SEE) to the Harmonised Allocation Rules for long-term transmission rights,
- Rules for explicit daily capacity allocation on the bidding zone borders serviced by SEE CAO,
- Participation Agreement between the Coordinated Auction Office in South East Europe d.o.o. Podgorica (Allocation Platform) and the Registered Participant,



- Financial conditions for participation in procedures organised by the Allocation Platform pursuant to the Participation Agreement,
- SEE CAO Nomination Rules, and
- SEE CAO Information System Rules.

On several occasions at national and international gatherings, SERC expressed its support to the successful operation of SEE CAO and also expressed its expectation that the geographic scope would include operators from all countries of South East Europe in the near future.

As Serbia does not participate in activities of this Office, there is still a need to regulate rules for allocation of cross-border capacities on the joint border between BIH and Serbia on an annual, monthly and daily basis. Consequently, on 18 December 2018, at the request of the Independent System Operator in Bosnia and Herzegovina, SERC approved:

- *Rules for annual and monthly auctions for allocation of transmission capacities on the border between control areas of EMS AD Beograd (EMS) and the and the Independent System Operator in Bosnia and Herzegovina (ISO BIH), and*
- *Rules for daily auctions for allocation of transmission capacities on the border between control areas of EMS AD Beograd (EMS) and the Independent System Operator in Bosnia and Herzegovina (ISO BIH).*

As SEE CAO does not cover intraday allocation of cross-border transmission capacities, at the request of the ISO BIH the following documents were also approved by same SERC decision:

- *Rules for intraday allocation of transmission capacities on the border between control areas of the Independent System Operator in Bosnia and Herzegovina (ISO BIH) and EMS AD Beograd (EMS),*
- *Rules for intraday allocation of transmission capacities on the border between control areas of the Independent System Operator in Bosnia and Herzegovina (ISO BIH) and the Montenegrin Electric Transmission System AD (CGES), and*
- *Rules for intraday allocation of transmission capacities on the border between control areas of the Croatian Transmission System Operator (HOPS) and the Independent System Operator in Bosnia and Herzegovina (ISO BIH).*

Also in 2019, the allocation of transmission capacities on the border with Serbia through annual and monthly auctions will be conducted by Elektromreža Srbije (EMS) while daily and intraday auctions will be conducted by the ISO BIH. Intraday auctions on the borders with Croatia and Montenegro will be conducted by HOPS and the ISO BIH respectively.

Cross-Border Tertiary Regulation

In 2017, the ISO BIH initiated the activities with the neighbouring system operators on the establishment of a model enabling the cross-border exchange of tertiary control energy. After a virtual cross-border line was registered in this context, the ISO BIH submitted to SERC for approval the *Contract on mutual delivery of cross-border tertiary control energy for the provision of system services from abroad for the electric power systems of Bosnia and Herzegovina and Serbia*. The State Electricity Regulatory Commission approved this Contract on 11 October 2017.

At the beginning of 2018, the *Contract on mutual delivery of cross-border tertiary control energy for the provision of system services from abroad for the electric power systems of Bosnia and Herzegovina and Montenegro* was prepared, which was approved by SERC on 13 March 2018.

The subject of the Contract is the provision of assistance in the form of mutual delivery of cross-border tertiary control energy in order to enhance secure and reliable operation of the neighbouring power systems. In this manner, the cross-border exchange of one of the products on the balancing market, which was formerly known as ‘emergency exchange’, has been formalised. A virtual transmission line registered in the SCADA systems of the two operators for simulation of exchange is used for calculation of transactions, which is in line with *the ENTSO-E Continental Europe Operation Handbook*. For energy exchange in physical terms, the remaining available cross-border capacity will be used after the completion of intraday capacity allocation. A part of the obligations of Bosnia and Herzegovina regarding the measures under the *Road Map for the implementation of Western Balkans 6 Initiative* (the so-called *WB6 Initiative*) pertaining to cross-border exchange of balancing services is fulfilled through the implementation of these contracts.

3.3 Licensing Proceedings

In 2018, SERC granted six licences for various activities, while at the time of creating this Report, it was intensively working on the application filed by Ezpada d.o.o. Mostar for renewal of the licence for the international electricity trading activity.

Due to the expiration of the term of the previously issued license for the international electricity trading activity, the proceedings were conducted and five-year term licenses were renewed to the following entities:

- Erdal d.o.o. Sarajevo (May 2018),
- Energy Financing Team d.o.o. Bileća (May 2018), and
- G-Petrol d.o.o. Sarajevo (August 2018).

Temporary two-year licences for performance of the international electricity trading activity were granted to the following entities:

- Vitol Adriatik d.o.o. Sarajevo (March 2018),
- Aluminijski Trade d.o.o. Mostar (May 2018), and
- LE Trading BH d.o.o. Banja Luka (August 2018).

All the licences for the international electricity trading activity issued after January 2016 are used pursuant to the *Standard licence conditions for performance of the international electricity trading activity*. By the adoption of these conditions as a standard set of rules on the rights and obligations of the licensee known beforehand (the acceptance of which is confirmed by submitting a written statement to that effect already with the licence application), SERC further simplified and expedited the procedure for granting this type of licence, which is most common in practice. This also considerably reduced the number of documents which circulated so far both within SERC and in communication with the applicant and interested third parties due to formal and procedural reasons.

In February 2018, decisions on an extension of use of the licence were adopted due to the change of the licensees' names (Prvo plinarsko društvo d.o.o. Sarajevo and HEP-Trade d.o.o. Mostar changed the name into Erdal d.o.o. Sarajevo and HEP Energija d.o.o. Mostar, respectively). After notification of change of the address by the Independent System operator in Bosnia and Herzegovina, Sarajevo, a decision on an extension of use of the licence at the newly registered address was adopted for this licensee (November 2018).

At the request of the licensee, in February 2018, a decision on revocation of the licence was adopted for Proenergy d.o.o. Mostar.

In addition to the Companies already mentioned in this Report as the licensees for the international electricity trading activity, in the previous period the same status was also registered for the following entities: Comsar Energy Trading d.o.o. Banja Luka, Axpo d.o.o. Sarajevo, Petrol BH Oil Company d.o.o. Sarajevo, Interenergo d.o.o. Sarajevo, Danske Commodities BH d.o.o. Sarajevo, GEN-I d.o.o. Sarajevo, Alpiq Energija BH d.o.o. Sarajevo, HSE BH Energetsko preduzeće d.o.o. Sarajevo, EFT-Rudnik i Termoelektrana Stanari (*EFT-Coalmine and TPP Stanari*) d.o.o. Stanari, MH Elektroprivreda Republike Srpske – Parent Company, a.d. Trebinje, JP Elektroprivreda Hrvatske zajednice Herceg Bosne d.d. Mostar, and JP Elektroprivreda Bosne i Hercegovine d.d. Sarajevo. So, at the end of 2018, a total of 20 entities are holders of international electricity trading licences.

The Independent System Operator in Bosnia and Herzegovina Sarajevo and Elektroprenos BIH a.d. Banja Luka are holders of

the licence for performance of the activity of independent system operator and the licence for the electricity transmission activity respectively. The Public Utility Komunalno Brčko d.o.o. Brčko holds the licence for electricity distribution in the Brčko District of BIH and the licence for electricity trading and supply in territory of BIH.

Every year, including this one, comparing the previous year's status Elektroprenos BIH updated and reported changes in overviews of the facilities used by the Company for performance of the electricity transmission activity as well as overviews of the transmission lines which are not owned by the Transmission Company and are not in the function of electricity transmission, on which SERC reached relevant conclusions in April 2018. In the same month a Conclusion on update of annexes to the Licence Conditions for the electricity distribution activity was adopted, that is, overviews of facilities used for this activity.

3.4 Monitoring of Activities of Licensed Entities

As part of its regular activities, throughout the year the State Electricity Regulatory Commission monitors operations of the licensed entities and their compliance with the licence conditions. Monitoring is performed through analysis of regular and special reports submitted by all licensed entities as well as by announced or unannounced visits to licensees. Licensees submit annual, semi-annual, monthly and daily reports on individual activities of a financial, technical and organisational nature. In addition, licensees' reports on contingency events in the system are available.

Visits of SERC experts to the regulated entities enable a direct insight into their documents and activities, which is of great relevance in particular when analysing the financial position of an entity from the aspect of application of approved tariffs.

In October and November 2018, the following regulated entities were visited:

- Independent System Operator in Bosnia and Herzegovina,
- Elektroprenos Bosne i Hercegovine, and
- JP Komunalno Brčko.

After a visit in the function of regulatory monitoring, SERC reminded the ISO BIH that the financial dimension of a regulated company's operation is of particular interest, highlighting that full and timely information sharing with the relevant regulator is primarily in the interest of the regulated entities and that the failure to distribute relevant information may have a significant impact on decisions passed by SERC in the tariff proceedings.

The obligation to comply with deadlines for review and submission of a Long-term transmission network development plan was highlighted (until the end of October in the current year for the



upcoming ten-year period), and it was concluded that there was a delay in submitting a revised proposal for maximum integration capacity of intermittent renewables in the transmission network.

The ISO BIH was instructed to monitor voltage quality pursuant to EN 50160 and IEC 60038 standards, with the greater stress laid on the need to maintain maximum voltage values in the high-voltage network in accordance with the values as defined by the new Grid Code, i.e., to undertake the relevant activities to resolve the multiannual problem of high voltage levels. Furthermore, it was emphasised that it was necessary for the ISO BIH to develop a statistical overview of events resulting in zero-voltage busbars at the substations of Elektroprenos BIH with a proposal for possible measures for improvement, with the aim of reducing the number of zero-voltage conditions as it had become evident that the number of these events had been increasing year over year.

It was emphasised that it was necessary to report timely and fully on international activities of the ISO BIH including activities within the Security Coordination Centre (SCC), the Coordinated Auction Office in South East Europe (SEE CAO), the European Network of Transmission System Operators for Electricity (ENTSO-E) and the current status and implementation of the agreement at the level of the SHB Control Block (Slovenia – Croatia – BIH).

With a view to increasing transparency, including information sharing and quality interaction among market players, it was stressed that it was important to publish rules, regulations, forms and other documents in a timely manner and update power indices and other information on the ISO BIH website both in the languages officially used in BIH and English.



As part of regulatory monitoring, SERC pointed out in particular the obligations of *Elektroprenos BIH* with regard to the development of Long-Term Transmission Network Development Plan for a ten-year period and the development and adoption of an Annual Investment Plan. On that occasion, SERC expressed its concerns over significant delays in submitting these documents as it hinders the implementation of necessary investments and endangers the reliable system operation and the quality of electricity supply. An attitude of indifference on the part of the Company is of particular concern due to complete lack of information sharing with SERC on the reasons for the failure to meet these obligations or to initiate the activities in this respect.

SERC has been pointing out for years that the voltage levels in the BIH power system are very often above the prescribed limits. The State Electricity Regulatory Commission concluded that the Company was aware of the necessity to resolve this problem but concrete steps in this regard were still missing. In that respect SERC stressed the necessity to synchronise activities with the neighbouring system operators and an active engagement under the Western Balkan Investment Framework (WBIF) in order to

bring voltage levels in the transmission network to technically acceptable scopes in the near future.

Elektroprenos BIH was instructed to inform SERC of all relevant issues pertaining to the course and outcomes of legal disputes before court in a timely manner and in full. Namely, Elektroprenos BIH is one of the parties in several financially relevant judicial processes, which in case of a negative outcome for the Company may put its business operation in jeopardy and have negative consequences for the operation of the whole power sector.

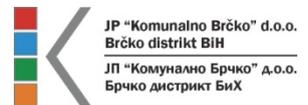
The regulated company was requested to provide complete information on the ownership right over the IT and telecommunications equipment, and the servitude right of some companies over the assets of Elektroprenos BIH as well as to submit additional information on planned investments in the IT and telecommunications equipment.

After a visit paid to JP Komunalno Brčko in the function of regulatory monitoring, SERC reiterated the necessity of developing the legal framework in the Brčko District BIH, i.e., passing a new electricity law in accordance with the Third Energy Package as well as laws on renewable energy sources and efficient cogeneration and energy efficiency. The failure to pass the mentioned laws obstructs qualitative and timely efforts regarding all changes occurring in the energy sector in the District area.

SERC called on JP Komunalno Brčko to create temporary solutions using the applicable legislation pending the adoption of a new legal framework in order to enable connection of new generation facilities to the network thus contributing to increased security of supply in addition to the development of renewable energy sources.

SERC reminded JP Komunalno Brčko of the necessity to resolve the issues of ownership relationships over the fixed assets in the function of electricity distribution and supply, which are registered as fixed assets of the Government of Brčko District BIH, with JP Komunalno Brčko having a servitude right. SERC reiterated the necessity of meeting the obligation pertaining to full unbundling of accounts for the distribution and supply activities as well of these activities and other non-energy activities (water production and distribution, landscaping and maintenance of public areas and collection, transport and disposal of waste materials).

Komunalno Brčko was asked to inform SERC of all distribution network modifications at the time of their occurrence, in addition to a request to update the annex to the electricity distribution licence which is to be submitted after the year ends. Furthermore, it was requested to submit all records and decisions of the relevant inspection authorities.



As there is a quality database of continuity of supply indices, Komunalno Brčko was asked to develop an overview of these indices during the five previous years (in tables and graphs), as well as an overview of data on planned and unplanned interruptions. Furthermore, it was requested to submit the indices pertaining to commercial quality of supply in the territory of Brčko District BIH.

3.5 Dispute Resolution

Dispute resolution among transmission system users falls under SERC authorities and powers. This is the reason why Prevent BH, d.o.o. Sarajevo addressed SERC in May 2018 asking for concrete steps to be undertaken on resolving its request for status of a customer directly connected to the transmission network, i.e., ‘a customer connected to 110 kV’ for its facilities located in Topuzovo polje in the Municipality of Visoko. The dispute occurred due to non-action by Elektroprenos BIH upon the previous requests of Prevent BH for this status.

Having assessed that there was sufficient evidence based on which the factual situation may be established properly and fully, SERC resolved the dispute using the shortened procedure in compliance with the prescribed rules undertaking all procedural legal actions within the proceedings which include the possibility for the parties to the dispute and the public to oppose this decision of SERC.

The SERC decision ordering Elektroprenos BIH to conclude a contract with Prevent BH on the use of the transmission network and undertake other necessary actions regulating technical, legal and economic conditions for the requested status was passed on 26 July 2018. While considering the evidence provided by Prevent BH and resolving the given dispute, SERC established that basically there were no disputable facts among the parties as Elektroprenos BIH also did not challenge the submitted request and the relevance of provided proofs or question the possibility of Prevent BH to acquire the status of a customer at 110 kV. Therefore, in light of the concrete factual circumstances established in the proceedings, SERC acted in accordance with its regulatory obligations to ensure fair and non-discriminatory access to the transmission network and the protection and non-discriminatory treatment of consumers.

The mentioned SERC decision is *ex lege* final and enforceable but it does not preclude the right of any party to the dispute to initiate proceedings before the relevant court. However, none of the parties to the proceedings challenged the decision before the Court of Bosnia and Herzegovina within the deadline prescribed by law, and the SERC decision was fully implemented as in the location of Topuzovo Polje as of 1 October 2018 Prevent BH has been using customer status as requested in the proceedings.

3.6 Technical Aspect of Transmission System Operation

The BIH electric power system operation was stable and without any bigger problems. All system users were able to operate functionally in line with the defined quality standards. The planned works as well as those additionally requested in the transmission network were completed in the function of the current and investment maintenance.

A maximum load of the electric power system amounting to 1,994 MW was recorded on 18 December 2018 at the 18th hour, while maximum daily electricity consumption of 40,634 MWh was achieved on 27 February 2018. A minimum load of 805 MW was recorded on 2 May 2018 at the 4th hour, while minimum daily electricity consumption of 24,576 MWh was achieved on 1 May 2018. Maximum and minimum loads in 2018 and over the past ten years are presented in Figures 1 and 2 respectively.

Unintended deviations from declared exchange schedules in the SHB Control Block in 2018 amounted to 49 GWh in total at hours at which an electricity deficit was registered in the BIH control area, and 36 GWh at hours at which an electricity sur-

Figure 1. Maximum and minimum monthly load in 2018 (MW)

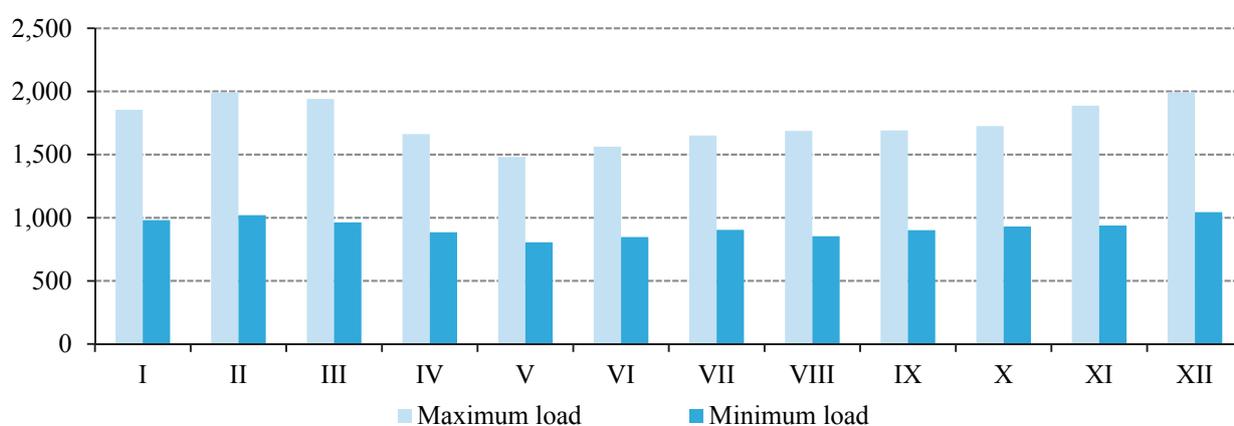
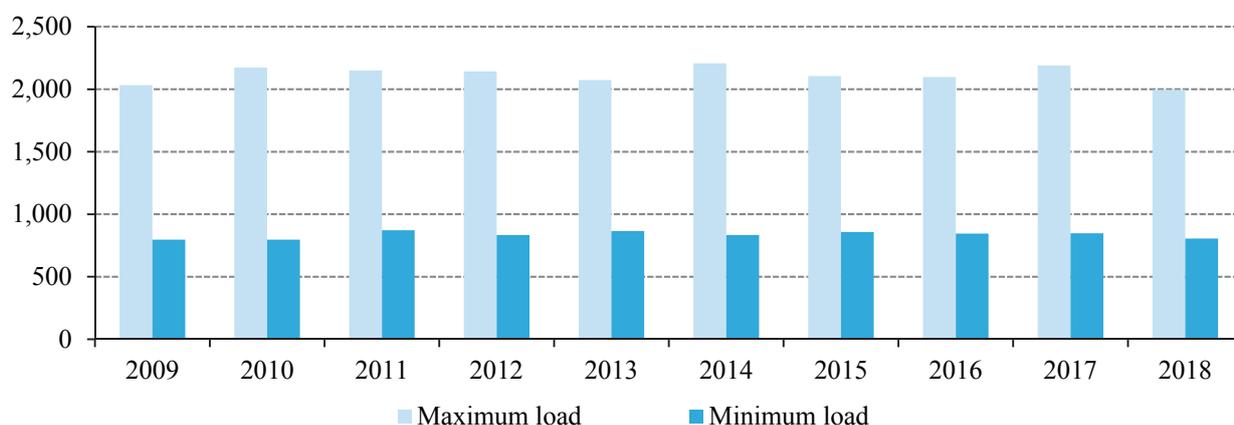


Figure 2. Maximum and minimum annual load in the period from 2009 to 2018 (MW)



plus was registered. Monthly deviations of the BIH power system towards the SHB Control Block in 2018 are presented in Figure 3. A maximum hourly electricity deficit (downward deviation) was recorded in March amounting to 190 MWh/h, while a maximum surplus (upward deviation) was recorded in August amounting to 199 MWh/h.

Total electricity in the transmission network amounted to 20,326 GWh, which is 12.95 % more than in 2017. Transmission losses amounted to 399 GWh, or 1.96 % of total energy in the transmission system. The trend of reducing distribution losses continued and they amounted to 950 GWh or 9.37 % in relation to gross distribution consumption, which was the lowest level recorded in the history of the BIH electric power sector. Percentage of transmission and distribution losses is presented in Figure 4.

In 2018 PHP Čapljina withdrew 137.4 GWh from the transmission system, while total production of this power plant amounted to 437.5 GWh.

Data on energy not supplied (ENS) due to unplanned interruptions (ENS_{unpl}), as well as energy not supplied due to planned interruptions (ENS_{pl}) in the BIH power system over the past five

Figure 3. Monthly deviations of BIH power system towards SHB Control Block in 2018 (MWh)

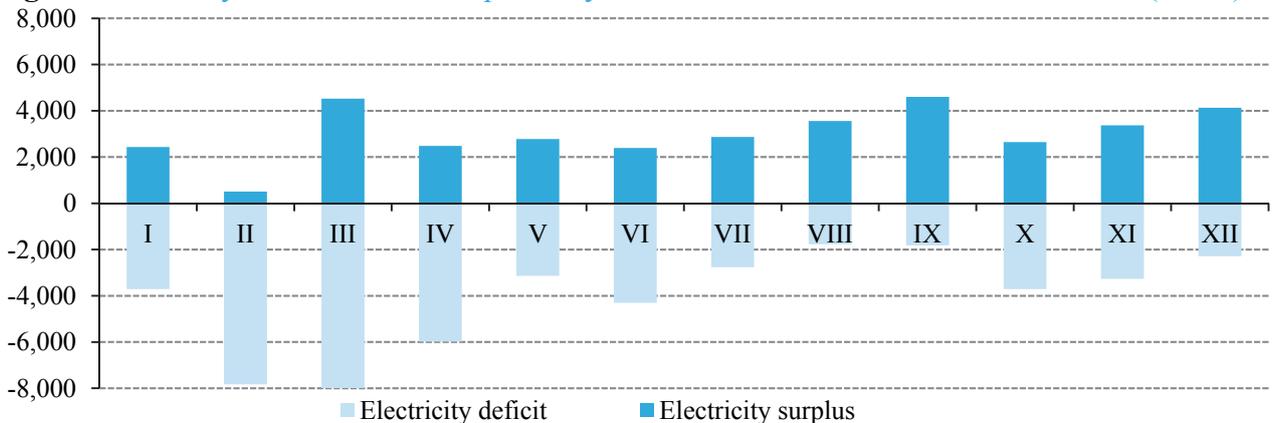


Figure 4. Transmission and distribution losses

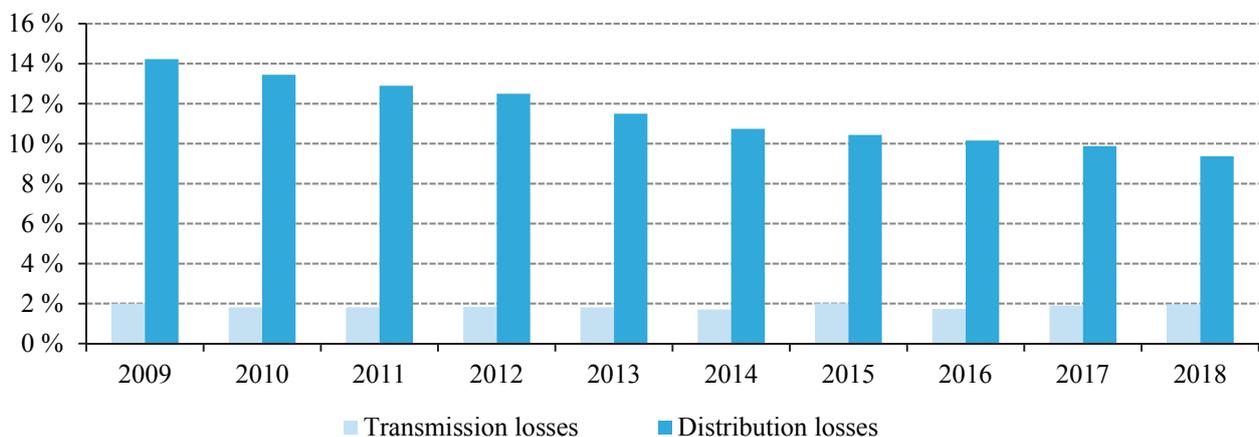


Table 1. Energy not supplied due to interruptions in the transmission network

	2014		2015		2016		2017		2018	
	MWh	min	MWh	min	MWh	min	MWh	min	MWh	min
ENS _{unpl}	420.75	35,458	467.22	21,017	528.46	15,975	1,362.35	16,594	1,181.83	13,661
ENS _{pl}	1,328.79	25,646	1,244.37	58,363	287.16	25,032	1,633.75	24,817	1,377.39	24,297
Total	1,749.54	61,104	1,711.59	79,380	815.62	41,007	2,996.10	41,411	2,559.22	37,958

Table 2. Average interruption time in the transmission network by month (min)

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
AIT ₂₀₁₄	4.0226	0.9460	7.6195	7.8256	1.4890	21.1840	4.1355	5.0214	14.1595	5.8988	7.6719	2.8193
AIT ₂₀₁₅	0.3656	1.4387	9.7107	8.5098	12.3043	11.2509	5.9257	6.2781	6.6186	9.7405	5.1279	2.1100
AIT ₂₀₁₆	0.3549	1.0903	0.1659	0.0799	0.9460	4.6876	13.4773	5.6841	5.9238	0.8767	1.8523	2.3055
AIT ₂₀₁₇	5.3071	2.7625	3.0089	11.4069	4.2718	10.4772	9.7140	4.2352	8.5023	15.9486	3.2145	4.8497
AIT ₂₀₁₈	0.2046	9.5267	3.2354	1.7183	2.2664	6.3035	3.0782	5.2013	3.3805	0.1153	3.1875	0.2781

years are provided in Table 1. Total energy not supplied, after an increasing trend in the past couple of years, decreased significantly in 2018.

Table 2 contains data on continuity of supply, that is, the average interruption time (AIT) in the high-voltage transmission network.

In 2018, several contracts on construction, reconstruction and rehabilitation of transmission facilities were implemented. At the beginning of March 2018, a new substation SS110/x kV Gornji Brišnik was put into operation, which was connected to the transmission system with the entry/exit system to the Posušje – Tomislavgrad 110kV transmission line, thus forming two new transmission lines, TL 110 kV Posušje – Gornji Brišnik and TL 110 kV Gornji Brišnik – Tomislavgrad. This substation was build for the connection of the Mesihovina wind park to the transmission network. This first wind park in Bosnia and Herzegovina with installed capacity of 50.6 MW (22×2.3 MW) was put into trial operation on 14 March 2018.

In April 2018, the first synchronisation of generators to the power system was conducted at the small hydropower plant Dub (SHPP) with installed capacity of 9.4 MW, thus starting its trial operation. The Dub SHPP is connected to the transmission network through the 110/35 kV Dub substation.

In September 2018, the transmission line 110 kV Tomislavgrad – Kupres was put into trial operation.

In November 2018, a new substation SS 110/33 kV Jelovača was put into operation, which was constructed for the connection of the Jelovača wind park with installed capacity of 36 MW

(18×2 MW), whose commencement of operation is expected at the beginning of 2019. This substation was also connected with the entry/exit system to the 110 kV transmission line Tomislavgrad – Prozor/Rama, thus forming two new transmission lines TL 110 kV Tomislavgrad – Jelovača and TL 110 kV Jelovača – Prozor/Rama.

The secondary control services in 2018 were provided by JP Elektroprivreda Bosne i Hercegovine d.d. Sarajevo, MH Elektroprivreda Republike Srpske, a.d. Trebinje and JP Elektroprivreda Hrvatske zajednice Herceg Bosne d.d. Mostar. During the year, tertiary control was activated 161 times, of which 100 times as upward tertiary control and 61 times as downward tertiary control, of which 37 times in April 2018. However, the nominated tertiary control volumes were often insufficient.

In 2018, 622 outages were registered in the transmission system, of which 55, 265 and 259 at 400 kV, 220 kV and 110 kV voltage level respectively, and 19 failures of 400/220 kV, 400 MVA transformers, five failures of 400/110 kV, 300 MVA transformers and 19 failures of 220/110 kV, 150 MVA transformers were registered.

In the past year, 63 failures of thermal power blocks and 33 failures of hydro generators were registered. Missing energy in the system was compensated through the activation of tertiary control.

Similar to the previous years, in 2018 voltage levels in the power system often exceeded the values prescribed by the Grid Code, in particular in the 400 kV and 220 kV network. The highest voltage levels in the 400 kV network were registered at SS Trebinje in May and October when measured voltage levels reached 441.75 kV. In May, the highest voltage level in the 220 kV network was measured at the Prijedor 2 substation (253.92 kV) while in the same month the highest voltage level in the 110 kV network was measured at the Sarajevo 10 substation (125.47 kV).

The main reason for occurrence and duration of high voltage levels was under-loaded 400 kV transmission lines during low demand periods which generate large volumes of reactive power. The occurrence of high voltage levels is a regional problem and, consequently, solutions to this problem are sought at regional level.

The quality of the power system operation is monitored by analysing the Transmission Company's data on technical aspects of the transmission system operation, which, in addition to the indices of continuity of customer supply ENS and AIT, are also presented by the SAIFI and SAIDI indices.

The SAIFI and SAIDI indices are obtained by monitoring the number and duration of interruptions in the Transmission Com-

The SAIFI index (System Average Interruption Frequency Index) indicates the average number of interruptions per customer during a year

The SAIDI index (System Average Interruption Duration Index) indicates the average interruption duration for each customer in minutes per year

Table 3. SAIFI and SAIDI for the transmission network

	2014	2015	2016	2017	2018
Planned interruptions	0.72	0.65	0.55	0.92	0.76
SAIFI Unplanned interruptions	0.80	0.90	0.97	0.81	0.69
<i>Total</i>	1.52	1.56	1.52	1.73	1.45
Planned interruptions (min/customer)	143.84	108.53	92.92	114.66	94.68
SAIDI Unplanned interruptions (min/customer)	277.15	76.00	68.61	48.55	53.31
<i>Total(min/customer)</i>	421.01	184.52	161.53	163.21	147.99

Table 4. SAIFI and SAIDI for the transmission network including outages of middle voltage feeders caused by interruptions in the distribution network

	2014	2015	2016	2017	2018
Planned interruptions	3.99	4.12	3.53	3.93	3.33
SAIFI Unplanned interruptions	7.61	7.76	5.78	7.01	4.96
<i>Total</i>	11.60	11.88	9.31	10.94	8.29
Planned interruptions (min/customer)	671.60	365.77	399.12	324.97	255.11
SAIDI Unplanned interruptions (min/customer)	678.42	532.99	371.99	465.81	314.55
<i>Total (min/customer)</i>	1,350.02	898.76	771.18	790.78	569.66

pany's facilities resulting in supply interruptions for customers directly connected to the transmission network and/or supply interruptions in middle voltage feeders exceeding three minutes.

Tables 3 and 4 show the SAIFI and SAIDI indices for the past five years. Table 3 includes only interruptions caused by events in the network under the responsibility of Elektroprenos BIH, while Table 4 also includes interruptions in middle voltage feeders in the Transmission Company's substations caused by disturbances in the distribution network which are significantly less favourable, taking into consideration outspread connections and length of the distribution network which is in practice more prone to different types of failures.

The basic data on the BIH electric power system and the map of the system are provided in Annexes A and B respectively.

3.7 Tariff Proceedings

Tariffs for Electricity Transmission Services

In November 2017, *Elektroprenos Bosne i Hercegovine* filed the application for modification of the electricity transmission tariffs in which the Company presented requests for revenues and expenditures as well as costs that the Company plans to charge for its services. The average tariff for electricity transmission amounting to 5.163 €/MWh was requested in the application, which would be a 13.6 % increase.

Tariffs are set pursuant to the criteria laid down in the *Law on Transmission of Electric Power, Regulator and System Operator of Bosnia and Herzegovina* and *Tariff Pricing Methodology for services of electricity transmission, operation of ISO and ancillary services*. In tariff setting proceedings, to the maximum extent possible SERC adheres to the basic principles prescribing that tariffs will be fair and reasonable, non-discriminatory, established on objective criteria, based on justified costs and determined in a transparent manner.

A formal public hearing at which facts in the tariff proceedings were determined was held on 18 December 2018. With the electricity market development in BIH, market players' interest in participating directly in tariff proceedings in the capacity of intervener also increased. In addition to the regulated company, five more entities with intervener status granted by SERC actively participate in these proceedings, which enables them to directly participate in the proceedings before the regulatory authority.

A final decision in this proceeding had not been adopted, so in 2018 the SERC Decision effective as of 1 May 2017 was applicable. Consequently, the part of the transmission network charge pertaining to energy remains 2.955 €/MWh while the part of the transmission network charge pertaining to capacity amounts to 0.75 €/kW (an average transmission network charge amounts to 4.545 €/MWh).

Elektroprenos BIH did not file a new application for modification of the electricity transmission tariffs by the end of 2018.

Tariffs for Operation of Independent System Operator; Tariffs for System and Ancillary Services

On 22 November 2017, at its own initiative the State Electricity Regulatory Commission launched the tariff proceedings for setting of tariffs for ISO operation and the tariffs for system and ancillary services. Consequently, the ISO BIH submitted the necessary documentation which included an analytical overview of all achieved, estimated and planned revenues and expenditures for 2017 and 2018, according to which the tariff for operation of independent system operator would remain 0.303 €/MWh.

SERC decided upon this tariff application also pursuant to the criteria and principles applied in the previous tariff proceedings. A formal public hearing, at which facts in the tariff proceedings were determined, was held on 17 January 2018 in which the participation of five entities with intervener status was allowed.

Based on the analyses of costs and expenditures of the applicant and other relevant available documentation, on 18 April 2018, SERC passed a decision finalising the tariff proceedings.

According to this decision, the tariff for operation of the independent system operator was reduced by 12 % and set to an amount of 0.266 €/MWh which was to be paid by customers for active power withdrawn from the transmission network in the period from 1 May to 30 November 2018. Furthermore, the Decision specifies that as of 1 December 2018 the tariff for operation of the independent system operator amounting to 0.020 €/MWh will be paid by generators for energy injected into the transmission system, while customers will pay the tariff amounting to 0.240 €/MWh for energy withdrawn from the transmission network.

With this solution the so-called G component is introduced in the tariff for operation of the independent system operator, which is in compliance with Article 15 of the *Tariff Pricing Methodology for services of electricity transmission, operation of ISO and ancillary services*, under which the part of the revenue requirement pertaining to network charges paid by generators may amount up to 10 % of the revenue requirement of the regulated company.

At the same session, the *Decision on extension of the Decision on tariffs for system and ancillary services* was adopted according to which the tariff for system service remained at the level of 1.629 €/MWh applicable as of 1 July 2017. With this the tariff proceedings launched at the SERC initiative were finalised.

Pursuant to the legal obligation to submit for review the application for revenues and expenditures in the following year as well as costs that the Company plans to include in its tariffs, the ISO BIH filed this application in October 2018, in which it presented and reasoned planned revenues, expenditures and costs in 2019. The revenue requirement for 2019 amounting to € 4,937,717 was requested, while the requested tariffs for ISO operation to be paid by customers and generators amounted to 0.359 €/MWh and 0.04 €/MWh respectively. The proposed tariff for system service amounted to 3.308 €/MWh.

A formal public hearing in these tariff proceedings was held on 11 December 2018 in which the participation of six entities with intervener status was allowed. On that occasion, the regulated company further justified its planned revenues and expenditures for 2019, making some adjustments to its request under which the tariff to be paid by customers, the tariff to be paid by generators and the tariff for system service would amount to 0.369 €/MWh, 0.032 €/MWh and 3.063 €/MWh respectively.

At the end of December 2018, the *Presiding Officer's Report* was distributed to the regulated company and all interveners for their comments. The tariff proceedings for setting of tariffs for ISO operation and the tariffs for system and ancillary services will be continued in 2019.

3.8 Electricity Market

A record in electricity generation was reached in Bosnia and Herzegovina in 2018 amounting to 17,873 GWh, which is 2,721 GWh or 18.0 % more in comparison to the previous year. The exceptionally favourable hydrological conditions had the largest influence on the increase in generation, with intense precipitation and inflows, especially in the first half of the year. As the hydrological conditions in 2017 were extremely poor, generation by hydropower plants increased 64.4 % or 2,469 GWh with generation amounting to 6,300 GWh. Generation by thermal power plants made a new record in 2018 as well, reaching 10,954 GWh or 0.3 % more than in the previous year.

In March 2018, the Mesihovina wind park with installed capacity of 50.6 MW was put into operation, which is the first facility of this kind connected to the transmission system. In the first year of its operation, this wind farm injected 103.5 GWh into the network. Small-scale renewable generation amounted to 498.21 GWh, or 31.0 % more in comparison to 2017. A dominant share in this category is still held by small hydro power plants (469.39 GWh or 94.2 %), while solar power plants, biomass and biogas power plants and wind power plants connected to the distribution system

Figure 5. Break-down of electricity generation in BIH over the last ten years (GWh)

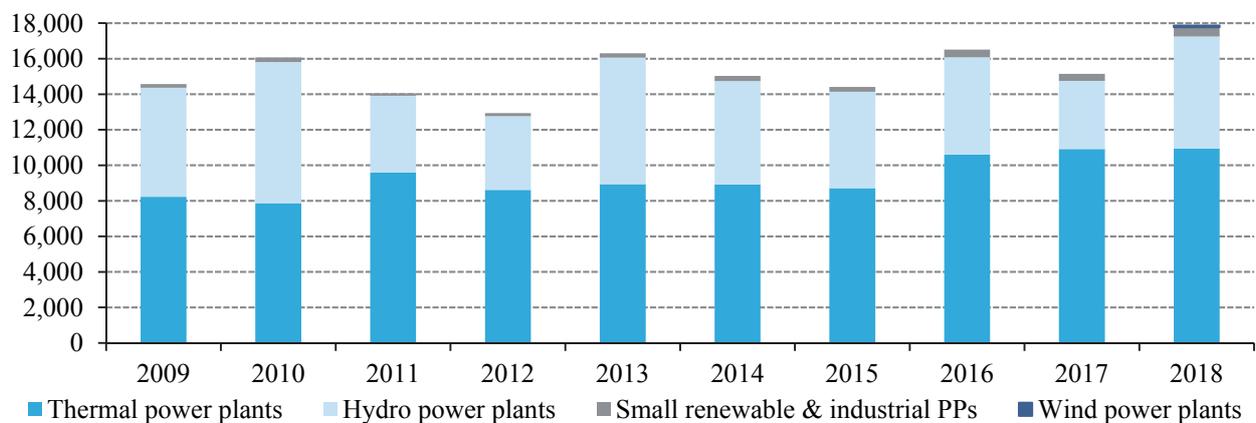
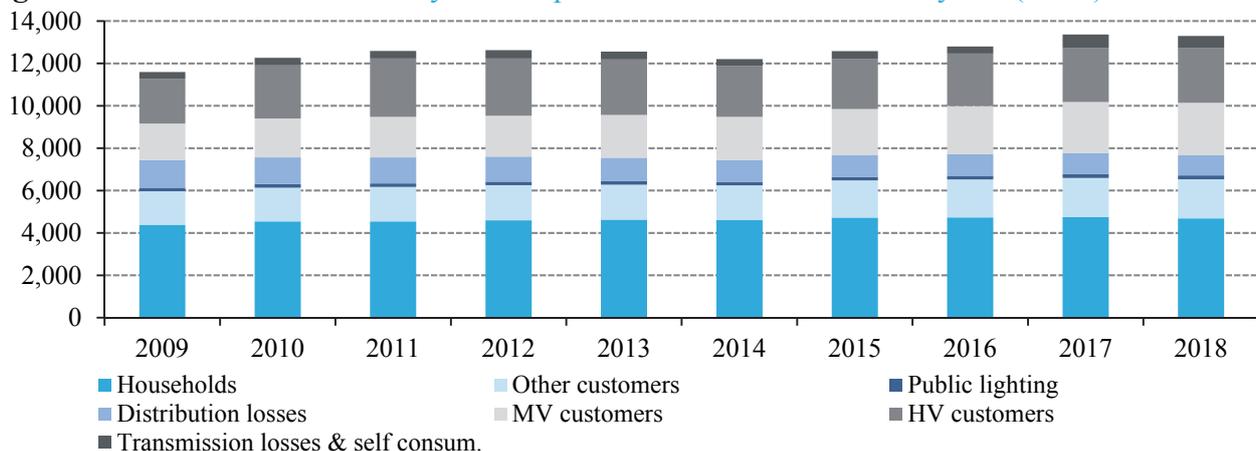


Figure 6. Break-down of electricity consumption in BIH over the last ten years (GWh)



produced 20.65 GWh (4.1 %), 8.15 GWh (1.6 %) and 0.02 GWh respectively. Independent producers have a significant share in small-scale renewable generation, whose facilities produced 384.17 GWh (77.1 %), while the remaining share was produced by power plants owned by the public utilities. Industrial power plants produced 17.4 GWh. A break-down of generation over the last ten years is provided in Figure 5 while a break-down of consumption in BIH is provided in Figure 6.

Total electricity consumption in BIH in 2018 amounted to 13,294 GWh, or 0.5 % less than in the previous year. Consumption of customers connected to the transmission network increased (HV customers) by 1.6 % amounting to 2,604 GWh, while consumption of customers connected to the distribution network decreased by 0.4 % amounting to 10,139 GWh. Analysed by the end customer categories connected to the distribution system, the highest increase in consumption was noted among the customers connected to the 35 kV voltage level (3.3 %), followed by customers connected to 10 kV (0.5 %), public lighting (1.5 %) and the customers falling under the category other consumers, i.e. commercial customers connected to 0.4 kV (0.5 %). Consumption by households decreased by 1.5 %.

Figure 7. Energy withdrawn from the transmission network in BIH – monthly data (GWh)

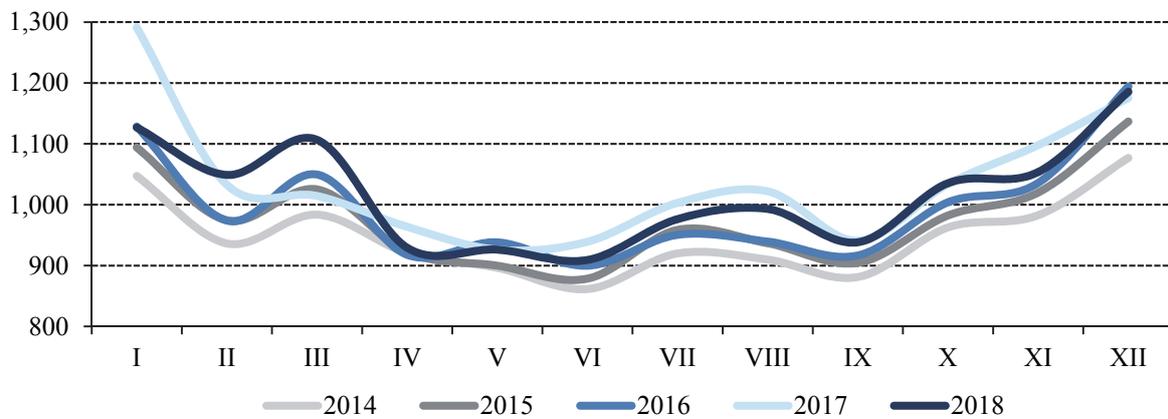


Figure 8. Energy withdrawn from the transmission network in 2018 per supplier (GWh)

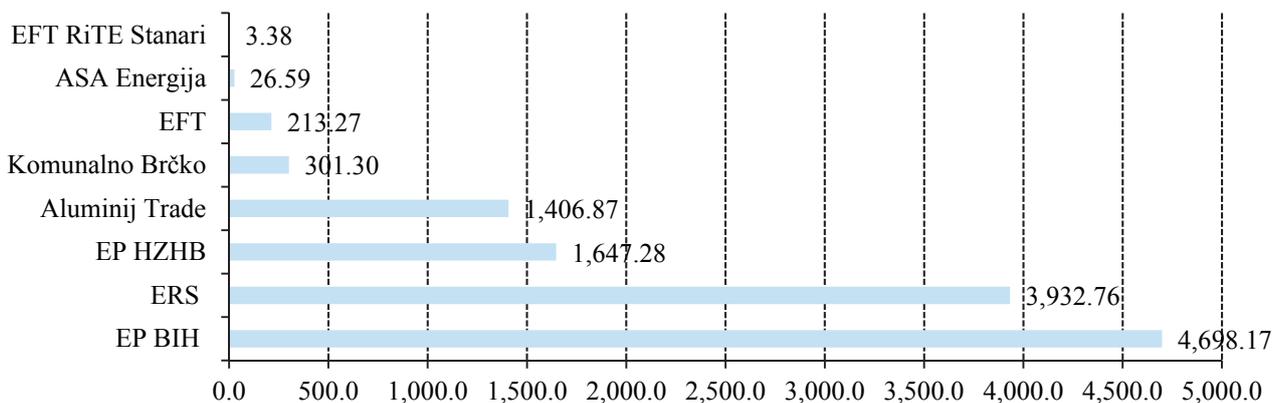
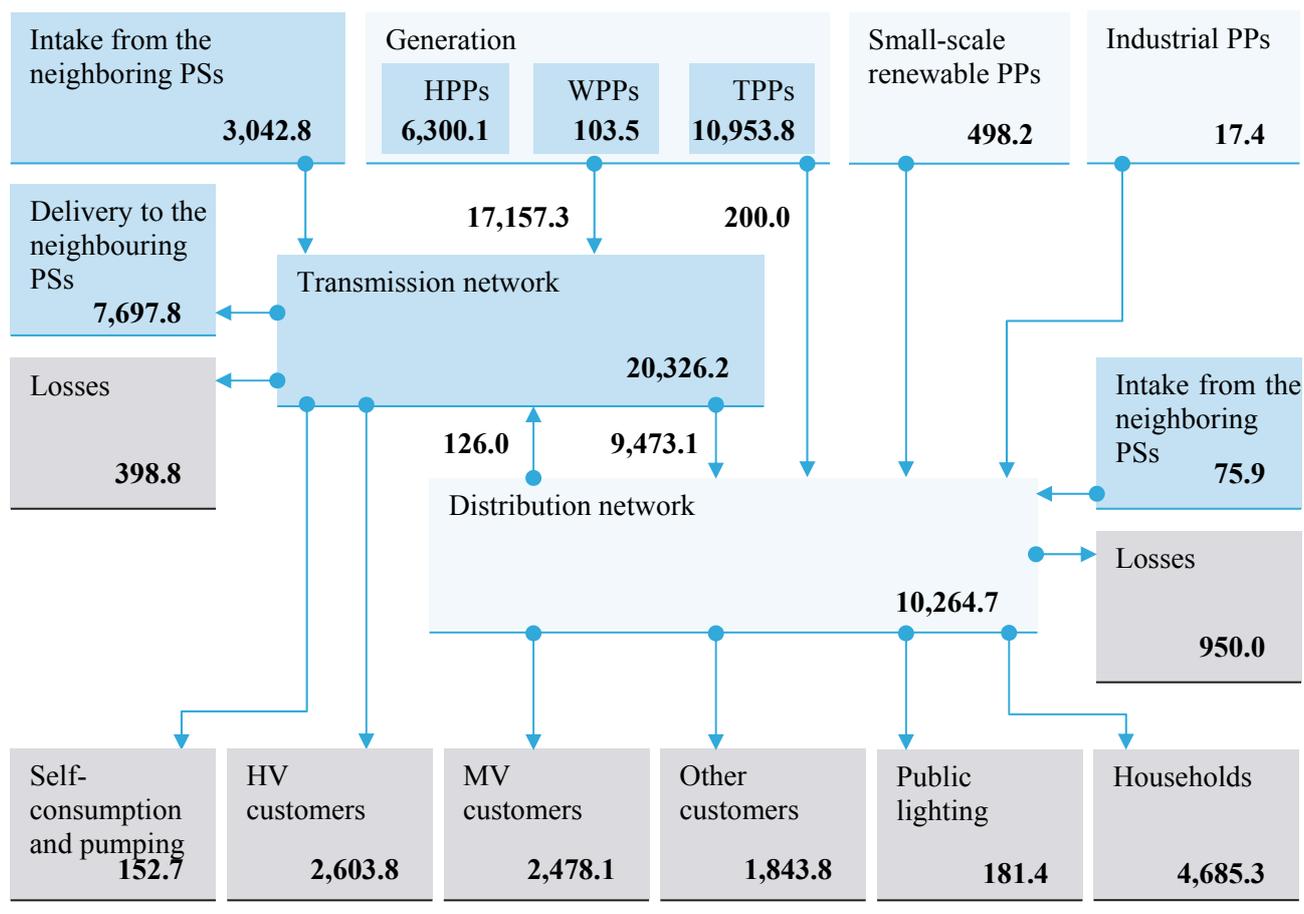


Figure 9. Balance volumes realised in 2018 (GWh)



A total of 12,230 GWh of electricity was withdrawn from the transmission system, which is a 1.7 % decrease in comparison to 2017. This is mostly the consequence of reduced operation of PHP Čapljina in pumping mode of operation (137 GWh in 2018 in comparison to 266 GWh in 2017). Data on energy withdrawn from the transmission system by months and suppliers are presented in Figures 7 and 8 respectively.

The difference between total generation and total consumption in BIH, that is, the balance surplus in 2018 amounted to 4,579 GWh, which is 2,794 GWh more than in the previous year. A descriptive overview of electric power balance volumes realised in 2018 is provided in Figure 9. The balance volumes and electric power indicators of BIH are provided in Annexes C and D respectively.

Regional Electricity Market

On the electricity market in South East Europe, which is of direct interest to electric power entities in BIH, a downward trend in wholesale electricity prices was present for several years. In 2017 this trend was discontinued while in 2018 electricity prices increased significantly. The main reason for this change was an electricity deficit in the region which ranged from 3 to 4 GW on

Table 5. Electricity prices at power exchanges (€/MWh)

<i>PX indices</i>	<i>Average price</i>	<i>Maximum price</i>	<i>Minimum price</i>
Phelix	44.45	80.33	-25.30
EXAA	42.74	86.48	-30.10
SIPX	51.11	89.05	-7.30
HUPXDAM	50.93	87.29	6.57
OPCOM	46.42	87.29	3.01
SEEPEX	51.42	84.64	8.07
CROPEX	53.17	92.78	-1.18

Phelix – European Energy Exchange (EEX) index for Germany

EXAA – European Energy Exchange (EEX) index for Austria

SIPX – Slovenian Power Exchange index

HUPXDAM – Day-ahead index of Hungarian Power Exchange (HUPX)

OPCOM – Romanian Power Exchange index

SEEPEX – Serbian Power Exchange index

CROPEX – Croatian Power Exchange index

an hourly basis throughout the whole year. According to the indices of the Hungarian power exchange (HUPX), wholesale electricity prices were below 40 €/MWh for most of 2016, in 2017 they ranged between 45 and 55 €/MWh while in December 2018 an average price on the day-ahead market amounted to 65 €/MWh. At the same time, prices of electricity supply in 2019 and 2020 also increased reaching the level of 62 €/MWh in December 2018 for supplies in 2019. Table 5 provides an overview of electricity prices on the power exchanges of relevance for the region of South East Europe.

Electricity Market in BIH

In 2018, total electricity consumption in BIH amounted to 13.294 GWh or 0.5 % less than in the previous year. Customers connected to the transmission system withdrew 2,604 GWh or 1.6 % more, while customers connected to the distribution system withdrew 10,139 GWh or 0.4 % less than in the previous year. Of this amount 9,189 GWh pertain to the withdrawal by end customers and 950 GWh to losses in the distribution network. Total sale to end customers amounted to 11,792 GWh which is 57 GWh, or 0.5 % higher.

The number of electricity customers in BIH continues to grow – during the year it increased by 11,470 thus reaching 1,553,438 at the end of the year (Table 6). The number of household customers increased (by 12,516), while in some categories it decreased significantly (other consumers, public lighting).

The competent regulatory commissions do not set tariff rates for those consumption categories which cannot be regulated any

Table 6. Number of electricity customers in BIH

Supplier	110 kV	35 kV	10 kV	Other consumers	Households	Public lighting	Total
Elektroprivreda BIH	4	64	883	64,252	695,079	4,460	764,742
Elektroprivreda RS	5	37	1,038	33,778	523,489	862	559,209
Elektroprivreda HZHB	3		218	14,908	177,062	1,692	193,883
Komunalno Brčko		1	52	3,786	31,301	434	35,574
Other suppliers	3		21	7			31
Total	15	102	2,212	116,731	1,426,931	7,448	1,553,439

longer pursuant to the adopted and applicable legislation on market opening. Already with the expiry of 2014, regulation of supply tariffs for all customers was abolished except for households and customers belonging to the category of ‘other consumers’ (small customers, that is, commercial customers at 0.4 kV), while practice of regulating tariffs for distribution services was kept. Since 1 January 2015, all customers in BIH have the possibility to choose their suppliers on the market. Customers that do not chose their supplier on the market may be supplied by public suppliers at public supply prices, while households and small customers may be supplied within the universal service at regulated prices.

In 2018, the option of being supplied within the universal service was used by all households in BIH and most of the customers belonging to the category of ‘other consumers’ (small customers, that is, commercial customers connected to 0.4 kV). An average electricity price for these customers amounted to 77.614 €/MWh and it was slightly higher than in 2017 when it amounted to 77.205 €/MWh. An average price for households amounted to 72.603 €/MWh which is a 0.6% increase, while an average price for customers belonging to the category of ‘other consumers’ was 90.448 €/MWh or 0.2 % higher in comparison to 2017.

It is obvious also from these data that the Regulatory Commissions work on the gradual elimination of inherited cross-subsidies among some categories of electricity customers, which is done in accordance with best international regulatory practice in order to avoid so-called ‘tariff shocks.’ The evident trend of reducing the ratio of the average prices between small commercial customers and households in the past several years in BIH is clearly visible in Figure 10. According to the 2018 data, cross-subsidies between commercial customers and households amount to 24.6 % on average, with the lowest values recorded among the customers supplied by Komunalno Brčko, while the highest values were recorded among the customers supplied by Elektroprivreda BIH. There is an obvious need for further reduction of cross-subsidies through additional measures of the Regulatory Commissions and efficient functioning of the electricity market, thus complying with the basic regulatory principle of reflecting real costs in price

Figure 10. Average electricity prices by customer category, excluding VAT (€/kWh)

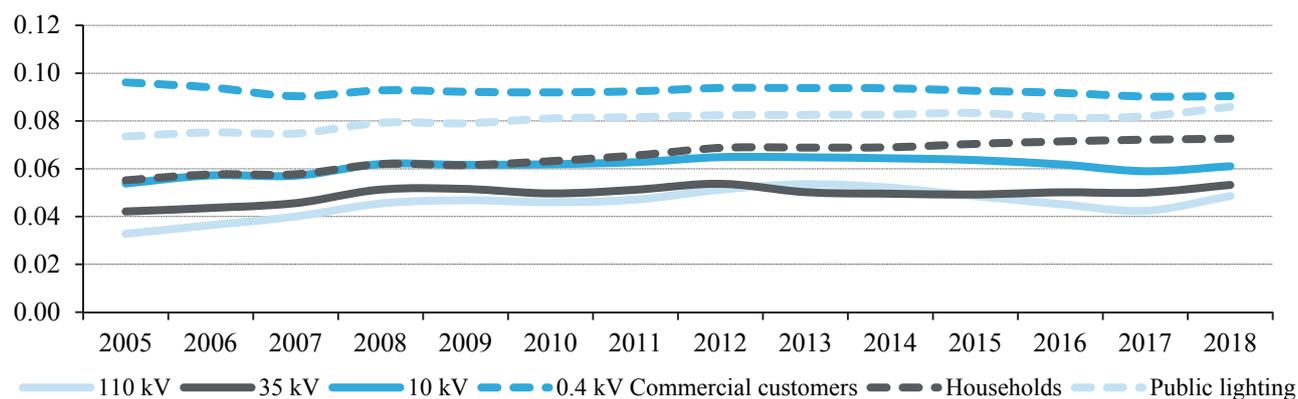
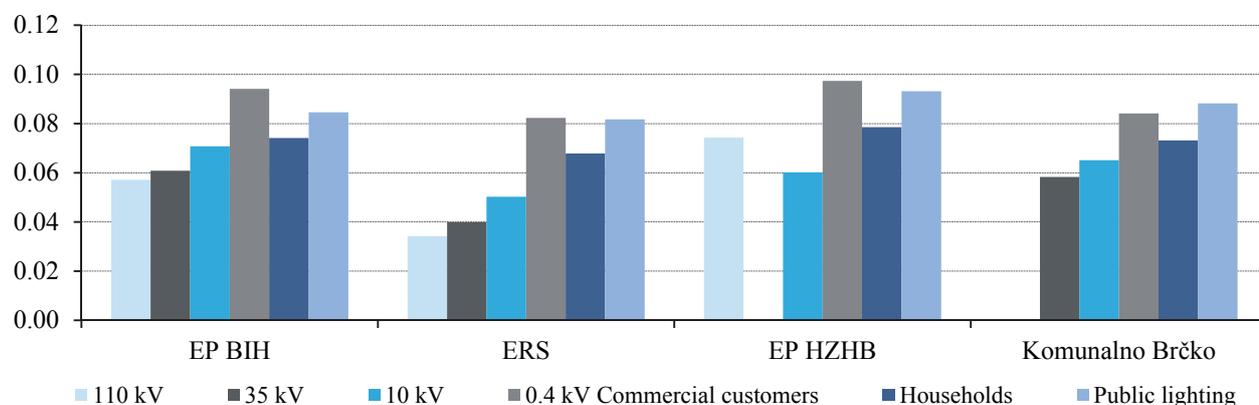


Figure 11. Average electricity prices by public utility, excluding VAT (€/kWh)



formation. This would facilitate market competition also in supply of households, i.e., open up possibilities for suppliers on the market to offer more favourable prices and become competitive in this market segment as well.

Trends of average selling electricity prices for end customers in BIH are presented in Figure 10, while Figure 11 gives an overview of average electricity prices per public suppliers and customer category in 2018.

As of 1 January 2016, on the retail market the first cases of supplier switching were registered among the customers connected to the distribution system since when their number varies on a monthly basis. In 2018, the largest number of customers was supplied by their traditional suppliers (the so-called ‘incumbents’). In addition to the incumbents four more suppliers were active on the retail market: HEP Energija d.o.o. Mostar, Petrol BH Oil Company d.o.o. Sarajevo, ASA Energija d.o.o. Sarajevo and ICT d.o.o. Široki Brijeg (which in the previous periods conducted its business operations under the name Proenergy). They delivered 89.03 GWh and 1.93 GWh to customers at 10 kV and customers falling under the category other consumers respectively. Furthermore, in the transmission system amounts of 1,406.87 GWh and

213.27 GWh were registered which Aluminij Trade d.o.o. Mostar (Al Trade) and Energy Financing Team d.o.o. Bileća sold to Aluminij d.d. Mostar and Company BSI d.o.o. Jajce respectively, as well as an amount of 26.59 GWh which ASA Energija d.o.o. Sarajevo sold to Željezara Ilijaš (Steel Plant Ilijaš) d.d. Ilijaš i Prevent CEE d.o.o. Sarajevo. To sum up these purchases, in 2018 a total of 1,737.69 GWh was delivered to customers that switched suppliers or 14.7 % of total energy withdrawn by end customers in BIH. Furthermore, tens of thousands of customers changed the conditions of supply by modifying the contract with their previous traditional suppliers, thus choosing on the open market the supply offer that suited them best. A total of 6,527.22 GWh was delivered to the customers supplied within the universal service (55.4 % of total consumption by end customers), while 5,265.27GWh (44.6 %) was delivered to the customers for whom prices are not regulated.

Trading on the wholesale market in BIH, which is based on bilateral sales contracts between suppliers, is significantly more dynamic. Although this market has not been institutionalised yet, the result of numerous bilateral contracts is impressive – in 2018, a total of 20 licensed entities were active and traded 7,395,467 MWh (Figure 12). This means that an 11.4 % decrease in the physical scope of trading transactions was registered after a multiannual increase in trading transactions. However, taking into consideration a significant price growth on the wholesale market, it is estimated that a total financial scope of transactions increased in comparison to the previous year.

In addition to the wholesale and retail markets, in Bosnia and Herzegovina the balancing market operated by the Independent System Operator in BIH is also functional. Essentially, it is a monopsony market, where on the demand side there is only one entity – ISO BIH, while on the supply side there are mostly generators providing ancillary services (capacity and energy for second-

Figure 12. Overview of trading on the wholesale market in BIH in 2018 (MWh)

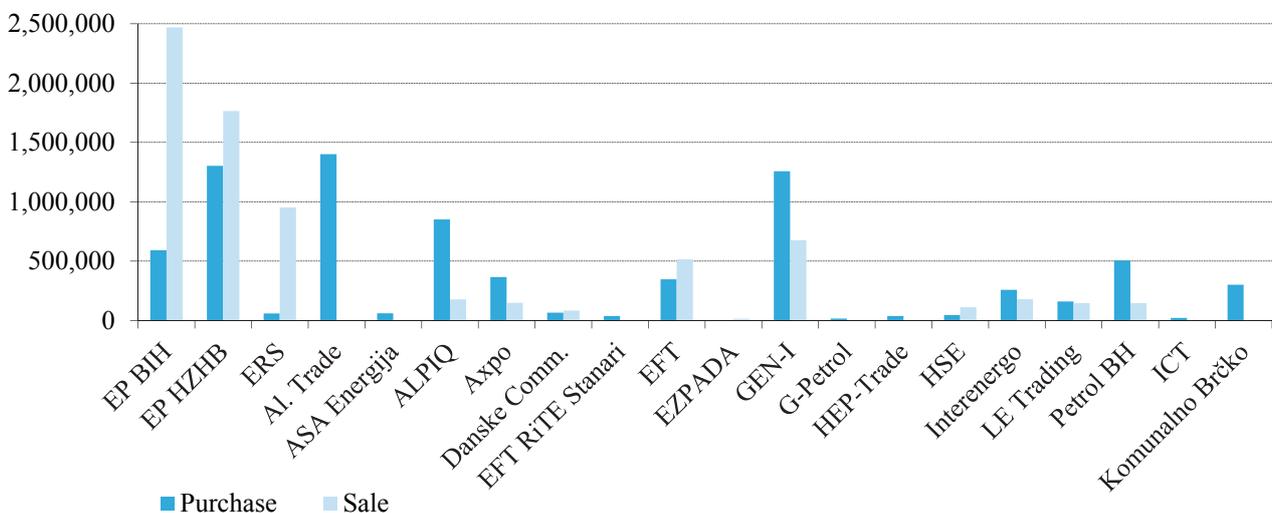


Table 7. Volumes of purchased ancillary services

<i>Ancillary service</i>	<i>2017 (€)</i>	<i>2018 (€)</i>	<i>Difference (%)</i>
Secondary control – capacity	4.766.304	5.737.769	20,4
Tertiary control – capacity	5.195.314	2.943.911	-43,3
‘Upward’ balancing energy	3.978.588	3.227.452	-18,9
‘Downward’ balancing energy	-735.613	-1.664.455	126,3
Losses in the transmission system & compensations	13.483.593	20.957.942	55,4
Total	26.688.188	31.202.618	16,9

ary and tertiary control and energy for covering losses in the transmission system). The calculation of deviations (imbalances) of balance responsible parties from the daily schedule is also conducted on the balancing market in terms of energy and prices. Imbalance prices are determined based on prices of balancing energy on an hourly basis. All transactions between suppliers on one side and the ISO BIH on the other are conducted based on the market principles through annual and monthly tenders while prices of the balancing energy are formed through offers of secondary and tertiary control by suppliers on a day-ahead hourly basis.

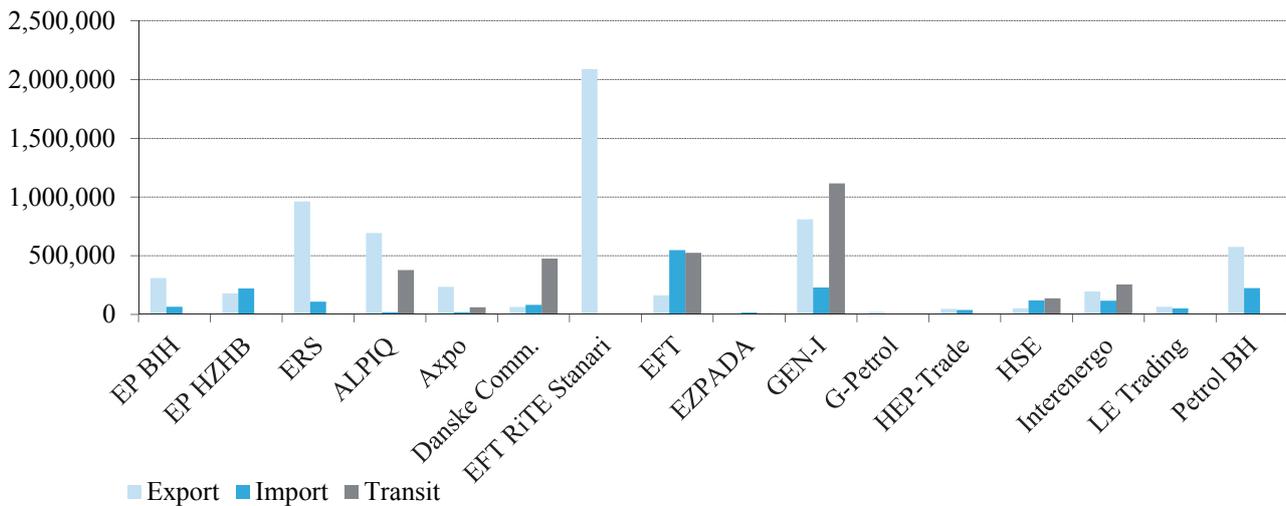
The total value of ancillary services purchased on the balancing market in 2018 exceeds € 31.19 million of which approximately 2/3 pertain to the purchase of energy to cover losses in the transmission system. The increase in wholesale electricity prices caused the significant increase in this cost in 2018 as presented by the breakdown provided in Table 7.

At the same time, by the provision of system service to suppliers withdrawing energy from the transmission system and the calculation of deviations from the daily schedule by balance responsible parties, the ISO BIH collected a total of € 25.89 million of which € 19.92 million and € 5.96 million were collected for the system service tariff and imbalances respectively. Furthermore, exports and imports of cross-border balancing services were registered amounting to € 0.33 million and € 0.11 million respectively.

Cross-Border Trade

Good connections of the BIH system with the neighbouring electric power systems enable a high level of electricity exchange with the neighbouring countries. In 2018, a total of 6,472 GWh was exported or 25.4 % more than in the previous year. A total of 16 entities exported electricity, among which EFT – Rudnik i Termoelektrana Stanari with 2,090 GWh was the leader in terms of the export scope, followed by MH Elektroprivreda Republike Srpske, GEN-I, Alpiq Energija BH, Petrol BH Oil Company with 963 GWh, 810 GWh, 693 MWh and 575 GWh respectively (Figure 13).

Figure 13. Overview of cross-border transactions by entities in 2018 (MWh)



Electricity imports amounted to 1,865 GWh, which is a decrease as high as 43.9 % compared to the previous year. Among the 15 entities importing to BIH, the highest imports were achieved by Energy Financing Team (548 GWh), GEN-I (230 GWh), Petrol BH Oil Company (224 GWh), Elektroprivreda Hrvatske zajednice Herceg Bosne (222 GWh) and HSE BH Energetsko preduzeće (119 GWh), Figure 13.

The largest scope of electricity trading is traditionally achieved with Croatia followed by Serbia and Montenegro (Table 8).

In 2018, registered electricity transits through the BIH transmission system amounted to 2,959 GWh, which is a decrease of 316 GWh or 9.7 % in comparison to 2017. Transit flows are of special importance because they are used as the basic element to calculate revenues within the *Inter-TSO Compensation Mechanism* (ITC mechanism), which was described in more detail in earlier SERC Reports on Activities. Total revenues achieved by BIH on this basis in the first nine months of 2018 amounted to € 579,106, which is significantly less than the revenues achieved in the same period last year as a consequence of a remarkable increase in electricity exports. According to the ITC mechanism calculation rules, increased transit flows increase revenues, while increased import and export flows reduce revenues.

Table 8. Cross-border trade per border, including registered transits (GWh)

Country	Exports	Imports
Croatia	5,160.7	1,211.1
Serbia	3,116.2	2,337.1
Montenegro	1,154.1	1,268.2
Total	9,431.0	4,823.8

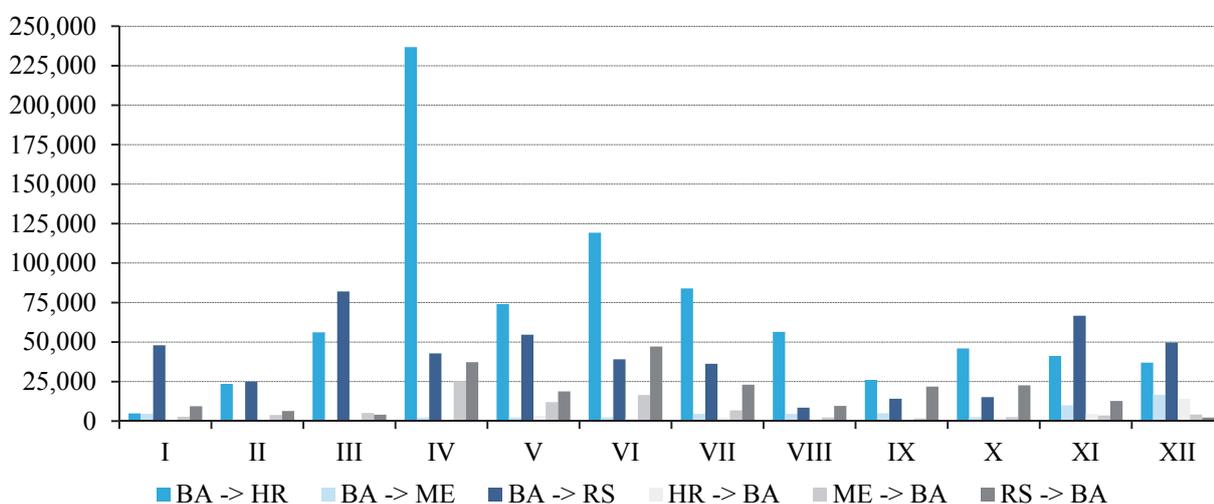
Table 9. Revenues achieved from annual auctions

Year	Revenue (€)
2013	1,041,054
2014	1,485,638
2015	558,187
2016	486,765
2017	1,033,461
2018	599,097
2019	1,372,254

In 2018 as well, cross-border capacity allocation through auctions was organised by the *Coordinated Auction Office in South East Europe* (SEE CAO) on the BIH borders with Montenegro and Croatia while on the BIH border with Serbia joint auctions of the two operators were organised (Please see Section 3.2). The total revenue of BIH on the basis of cross-border transmission capacity annual auctions for 2019 amounts to € 1,372,254. As in the previous period, the highest price was reached on the border with Croatia in the direction from BIH to Croatia amounting to 2.28 €/MW, with more than 2/3 of revenues on the annual auction being collected in this direction.

Revenues of Bosnia and Herzegovina achieved to date on the basis of auctions for allocation of cross-border transmission capacities on an annual basis are provided in Table 9 while Figure 14 provides an overview of revenues based on monthly auctions per border and direction. The user of all revenues from auctions for allocation of the right to use cross-border capacities as well as revenues achieved by the application of the *Inter-TSO Compensation Mechanism* (ITC mechanism) is Elektroprenos BIH.

Figure 14. Revenues based on monthly auctions, per border and direction (€)

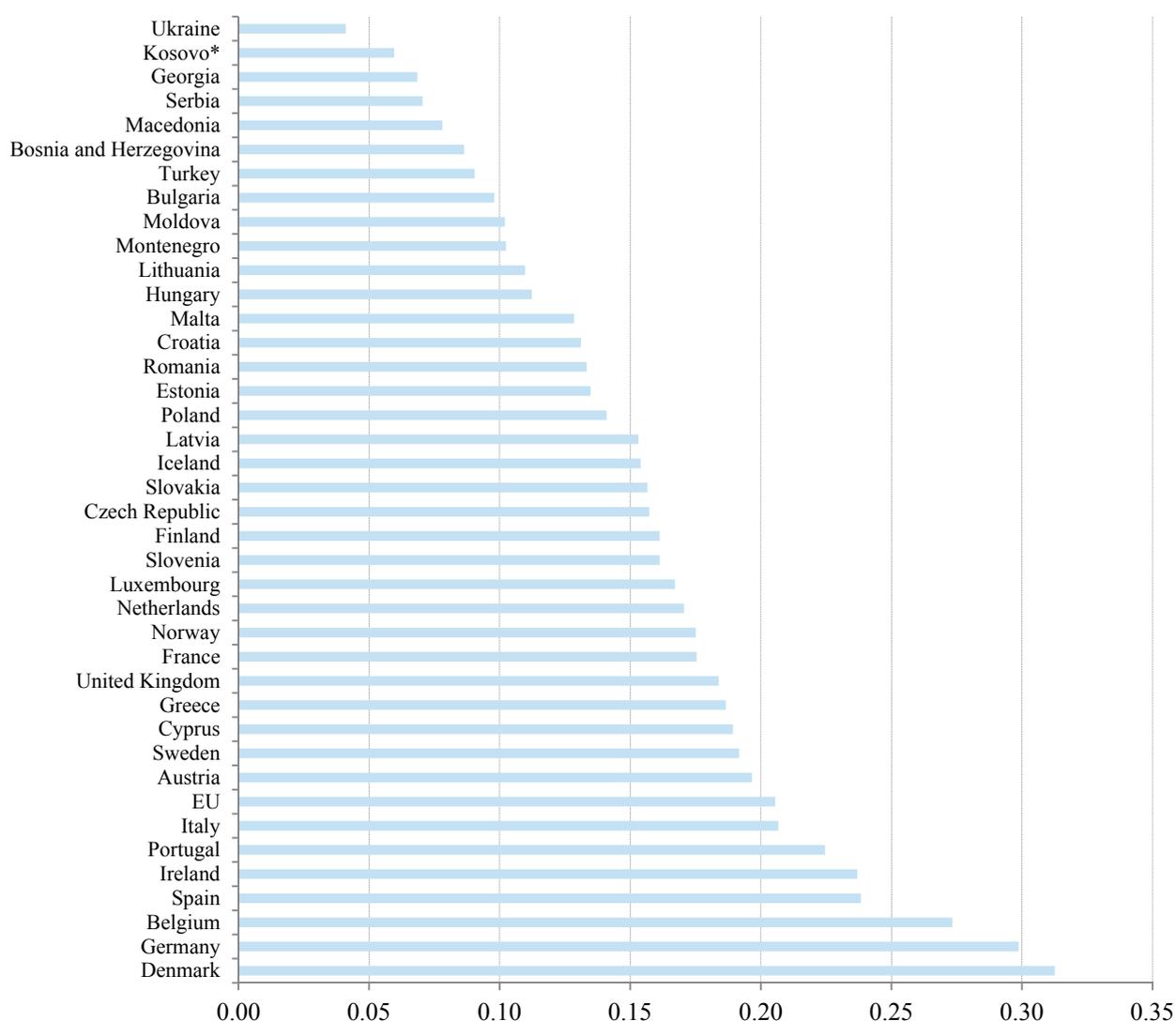


3.9 Energy Statistics



Aware of the relevance of objective presentation of data on energy volumes and electricity prices, in 2018 SERC continued to pay particular attention to enhancing its performance in the segment of energy statistics. The key partner in the exchange of energy volumes and data is the Agency for Statistics of Bosnia and Herzegovina with which SERC has been cooperating for several years, in particular with regard to fulfilling the reporting requirement for international bodies in line with prescribed methodologies and reporting dynamics. The cooperation between the two institutions contributes to energy statistics development and harmonisation of the BIH official system of statistics with statistics of the EU countries in all fields, in particular in the field of energy statistics.

Figure 15. Electricity prices expressed in €/kWh for households (annual consumption from 2.500 to 5.000 kWh) in the first half of 2018, using Eurostat methodology



Note: All taxes and levies included

* This designation is without prejudice to positions on status, and in line with the United Nations Security Council Resolution 1244 and the international Court of Justice.

Figure 16. A geographic overview of electricity prices for households (in €/kWh) in the first half of 2018, using Eurostat methodology

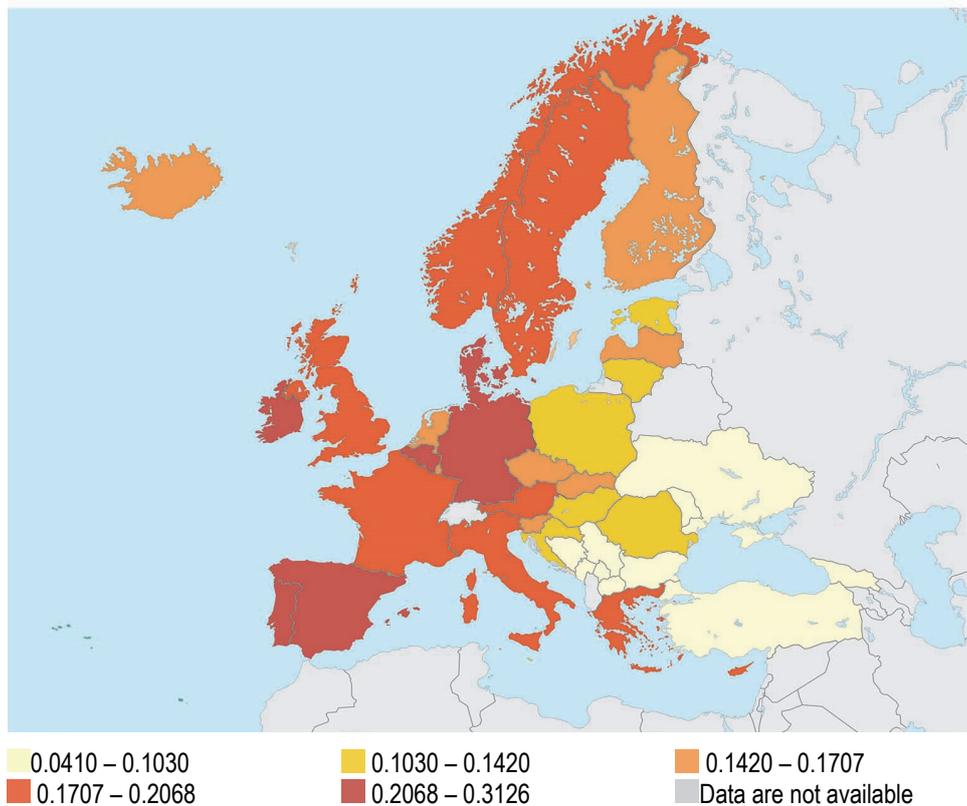
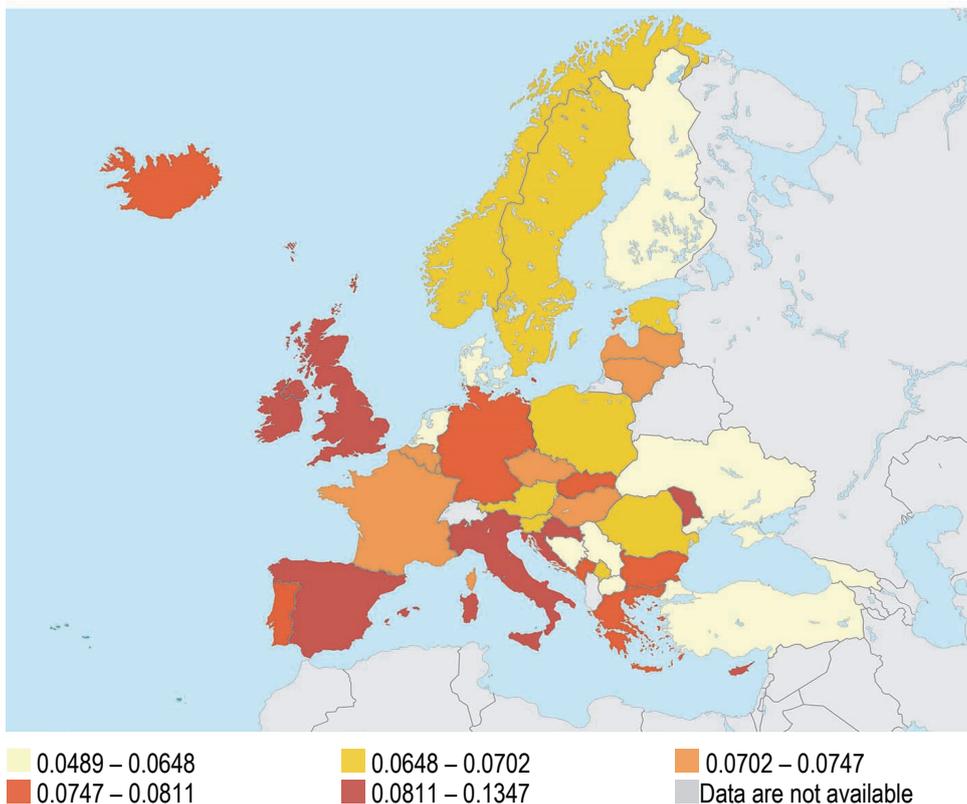


Figure 17. A geographic overview of electricity prices for industrial customers (in €/kWh) in the first half of 2018, using Eurostat methodology





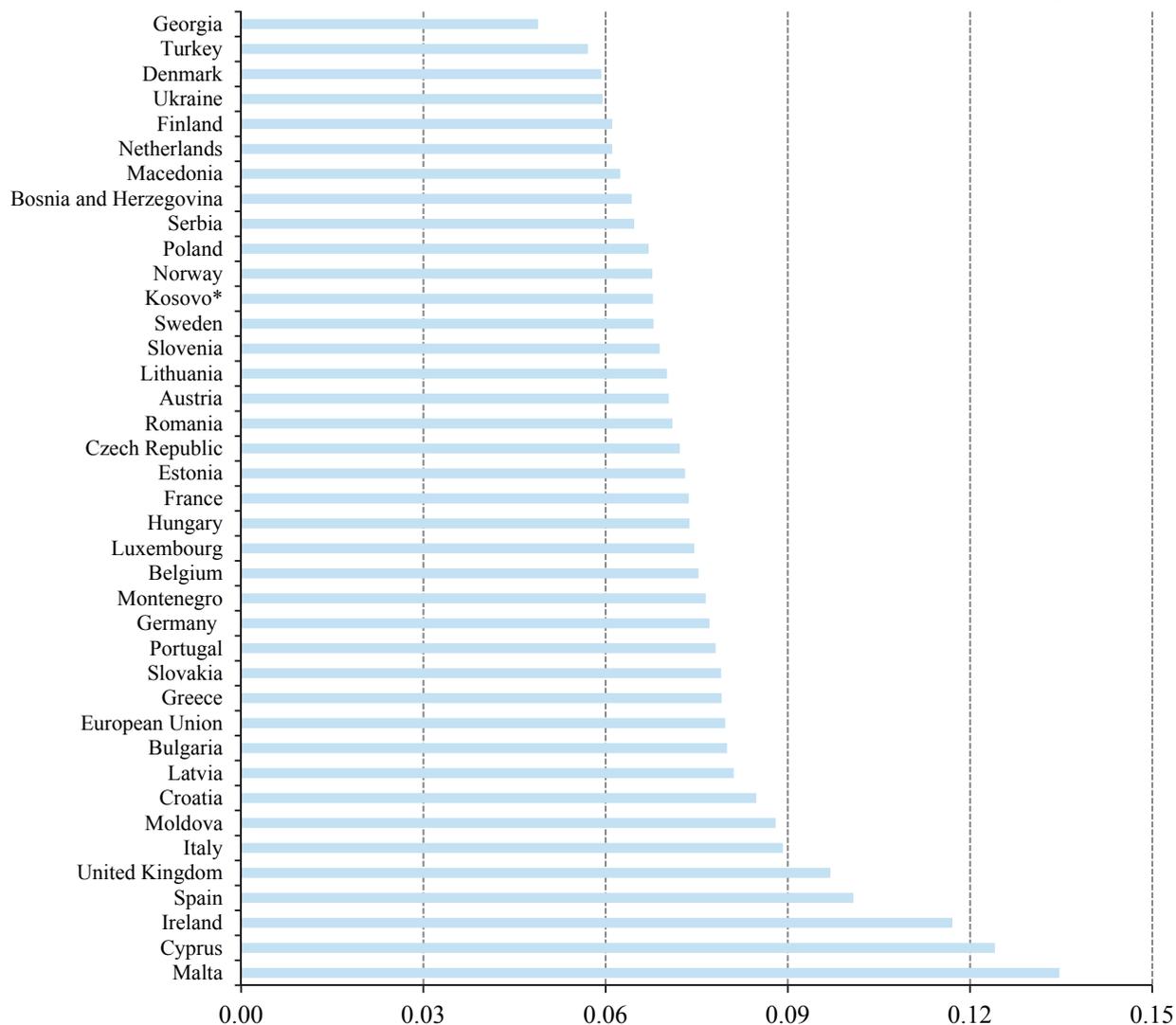
Eurostat is the statistical office of the European Union situated in Luxembourg. Its task is to provide the European Union with statistics at European level that enable comparisons between countries and regions.

The results of cooperation between the two institutions are recognisable in Eurostat’s reports, which include data on electricity prices in Bosnia and Herzegovina since 2011, thus enabling their comparison with the EU countries and some countries that are in the EU accession process (Figures 15 – 18).

In addition to analysing data on the BIH electric power sector, SERC continuously collects and analyses data on regional markets, including data on the power exchanges seated in Leipzig, Budapest, Bucharest, Ljubljana, Belgrade and Zagreb (Table 5).

Based on a systematic approach to numerous electric power indicators, SERC provided quality answers to a number of inquiries by national and international institutions also in 2018 by presenting statistical data on the electric power sector of Bosnia and Herzegovina.

Figure 18. Electricity prices expressed in €/kWh for industrial customers (annual consumption from 500 to 2.000 MWh) in the first half of 2018, using Eurostat methodology



Note: All taxes and levies excluded

3.10 Other Key Activities

In 2018 as well, the State Electricity Regulatory Commission exchanged data with a number of state institutions including the Council of Ministers of Bosnia and Herzegovina, Ministry of Foreign Trade and Economic Relations, Directorate for European Integrations of the BIH Council of Ministers, Competition Council of BIH and BIH Agency for Statistics⁴, and prepared different types of information they needed. SERC gave a particular contribution to activities of the Stabilisation and Accession Committee and a Subcommittee on Transportation, Environment, Energy and Regional Development and to the preparation of answers to the Questionnaire of the European Commission for the preparation of the Opinion on the BIH Application for the membership of the EU. This pertains in particular to the questions from Chapter 15: Energy, Chapter 21: Trans-European Networks and Chapter 28: Consumer and Health Protection and some issues falling under Economic Criteria.

In line with its legal powers to act in the area of Brčko District BIH as a regulatory authority, through its activities SERC also cooperates with the Brčko District Government.

Since their establishment, the State Regulatory Commission and Entity Commissions – the Regulatory Commission for Energy in the Federation of BIH (FERK) and the Regulatory Commission for Energy of Republika Srpska (RERS) cooperate and harmonise their activities.

SERC provided its full contribution to the implementation of numerous activities and development of various documents in the energy sector, including the development of the *Framework Energy Strategy of Bosnia and Herzegovina until 2035*, which was adopted by the BIH Council of Ministers on 29 August 2018, support to the implementation of technical assistance for the establishment of an institutional framework for organised day-ahead market and the development of other documents for the implementation of the measures agreed under the *Road Map for Implementation of 'Western Balkans 6 Initiative'* (so-called *WB6 Initiative*). Under these activities SERC remained proactive in the reform and development of the BIH power sector.

Acting as a national regulator in representing the interests of Bosnia and Herzegovina, SERC participated in several regional projects in 2018. In this context, under the WB6 Initiative, SERC took part in the technical assistance projects *Day-Ahead Market Integration in the Western Balkans 6* and *Cross-Border Balancing*. Furthermore, SERC participated in several regional projects organised by USAID and NARUC: *South East Europe*

⁴ The State Electricity Regulatory Commission signed Memoranda of Understanding with the BIH Agency for Statistics and Competition Council of BIH on 19 April 2011 and 28 May 2014 respectively.

Ten-Year Transmission Network Development Plan Project, Price Comparison Tools and Customer Communications, Effective Regulation of Cybersecurity, and as an observer in the project *Gas Market Design and Natural Gas Transmission Grid Codes*. In addition, SERC took part in the implementation of the regional project *Electricity Market Integration* organised by USAID and USEA, the regional project *Balkans Digital Highway* organised by the World Bank with the aim of optimising the use of infrastructure available to the transmission companies in the region, and the development of the *Regional Strategy for Sustainable Hydropower in the Western Balkans* organised by the European Commission.

Energy Investment Activity



During 2018, the activities of the United States Agency for International Development (USAID) were conducted under the project *Energy Investment Activity* (EIA). The Project, with the planned duration from September 2014 to September 2019, is focused on cooperation with and support to all key stakeholders in the energy sector in Bosnia and Herzegovina in the accession process and integration into the European Union (ministries, regulators, companies etc.). The USAID EIA Project is organised through the following components:

- Addressing impediments to investment in the energy sector,
- Retail market development in BIH,
- Achieving energy savings in BIH, using regulatory incentives through financial mechanisms - energy efficiency obligation schemes,
- Use of biomass for cogeneration,
- Emission reductions from large combustion plants, and
- Public outreach, including the development of the electricity price comparison tool.

Representatives of the State Regulatory Commission follow activities organised under the Project and participate in the implementation of some components, in particular those relating to the regulatory activities. In 2018 SERC expressed particular interest and directly participated in the implementation of activities in the field of sector investments, integration of renewables, energy efficiency, business processes of distribution system operators and data exchange in the sector as well as public relations and the development of the electricity price comparison tool.

After the successful organisation of the Energy Summit in BIH in the previous three years whereby a new model of dialogue was established on topical issues in the energy sector, the EIA Project jointly with the German Agency for International Cooperation (GIZ) organised in April 2018 the Fourth Energy Summit in BIH.

switching. Furthermore, the application provides an overview of the current electricity prices and available electricity suppliers as well as tips on energy savings and other educational and useful tips.

Promoting Renewable Energy in BIH

At the beginning of 2016, *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH* (German Agency for International Cooperation) launched the project *Promoting Renewable Energy in BIH* with a view to creating preconditions to increase the use of renewable energy.

The key partners in the project implementation, which will last until the end of 2019, are the respective national and entity ministries and regulators and operators for renewable energy, that is, incentive schemes.

The project provides technical assistance in the field of general improvement of the framework conditions for heat and electricity generation using renewable energy sources (RES), focusing on the use of bioenergy and improvement of technologies for small hydropower plants (up to 10 MW).

The concept of the project defines different areas of intervention, including strategic, legal and regulatory framework, administrative procedures and incentive schemes, innovative technology, capacity building and the development of specific tools. The project is conceived through four areas of intervention:

- General framework conditions for renewable energy sector,
- The development of the bioenergy sector and innovative technologies,
- Improvement of the sector of small hydropower plants,
- Incentive schemes and modes of financing for renewable energy projects.

The long-term nature of the project contributes to further sustainable development of renewable energy sources and necessary diversification of energy sources, thus increasing the national energy security.

The project is conceived so as to ensure full coordination with activities under the *Biomass Energy for Employment and Energy Security Project* of the United Nations Development Program (UNDP) and USAID's *Energy Investment Activity Project*.

The *Final Report for Reform of the Renewable Energy Support Scheme System in Bosnia and Herzegovina (Phase A)* was published in September 2018, and it was prepared by an interdepartmental Working Group, consisting of representatives of all key legislative and regulatory authorities in the energy sector in BIH, in particular with regards to RE support schemes. This

document presents an analysis of RE support schemes in Bosnia and Herzegovina, i.e., its Entities, and outlines a concept for reform of the renewable energy support scheme system which will be elaborated in detail in phase B, foreseen for the period from October 2018 until September 2019.

Ongoing and Resolved Court Disputes

All five court rulings of the Court of Bosnia and Herzegovina confirmed the lawfulness of the SERC decisions that were disputed before court by the legal persons whose applications were decided upon after the completion of the tariff proceedings. In the period from 2009 to 2016, as well as in 2018, there were no new applications for revision of any decision from the SERC regulatory practice by any person that has standing to commence an action.

The administrative dispute before the Court of Bosnia and Herzegovina initiated by Elektroprivreda Hrvatske zajednice Herceg Bosne in 2017 is still in progress contesting the SERC Decision adopted on 26 January 2017 ordering Elektroprivreda HZHB to pay the fixed part of the fee for connection of HPP Mostarsko Blato to the transmission network.⁵ Firmly convinced in the validity of its position presented in these proceedings, SERC had undertaken all procedural actions to deny the allegations made in the lawsuit. The request of Elektroprivreda HZHB to postpone the enforcement of the SERC Decision was rejected by the Decision of the Court of Bosnia and Herzegovina of 4 April 2017, while no ruling in this case was made by the time this Report was finalised.

Due to lack of cooperation with the KTG d.o.o. Zenica Company, a former holder of the international electricity trading licence, with regard to their obligation to pay the regulatory fee, having undertaken all steps in the civil litigation in which the debts of this formerly licensed entity had been confirmed, in accordance with the court ruling in these proceedings SERC initiated the enforcement procedure before the competent court. As the defendant has no money in the account, SERC as the party seeking enforcement was put on the waiting list in accordance with legal priorities for the execution of enforceable orders for payment.

⁵ The dispute settlement procedure was described in the SERC Report on Activities in 2017.

4. ACTIVITIES IN INTERNATIONAL INSTITUTIONS

4.1 Energy Community



The *Treaty establishing the Energy Community*, which was signed in Athens on 25 October 2005, and came into effect on 1 July 2006, provides for the creation of the biggest internal market in the world for electricity and gas, with effective participation of the European Union on one side, and the following nine Contracting Parties: Albania, Bosnia and Herzegovina, Georgia, Kosovo*, Macedonia, Moldova, Montenegro, Serbia and Ukraine.⁶

In accordance with the expression of interest, the following countries participate in the work of the Energy Community bodies: Austria, Bulgaria, the Czech Republic, Croatia, Cyprus, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, the Netherlands, Poland, Romania, Slovakia, Slovenia, Sweden and the United Kingdom. These twenty countries have the status of Participants and directly participate in the work of the Energy Community bodies; in the voting procedure their positions are expressed by votes of the European Commission.

Armenia, Norway and Turkey have observer status in the Energy Community. In 2016, Belarus filed an application for acquiring observer status.

The main goals of the Energy Community are the creation of a stable and single regulatory framework and market space that ensures reliable energy supply and attracts investments in the electricity and gas sectors. In addition, it assumes the development of alternative sources of gas supply and improvement of the environment, with the implementation of energy efficiency and the utilisation of renewable sources.

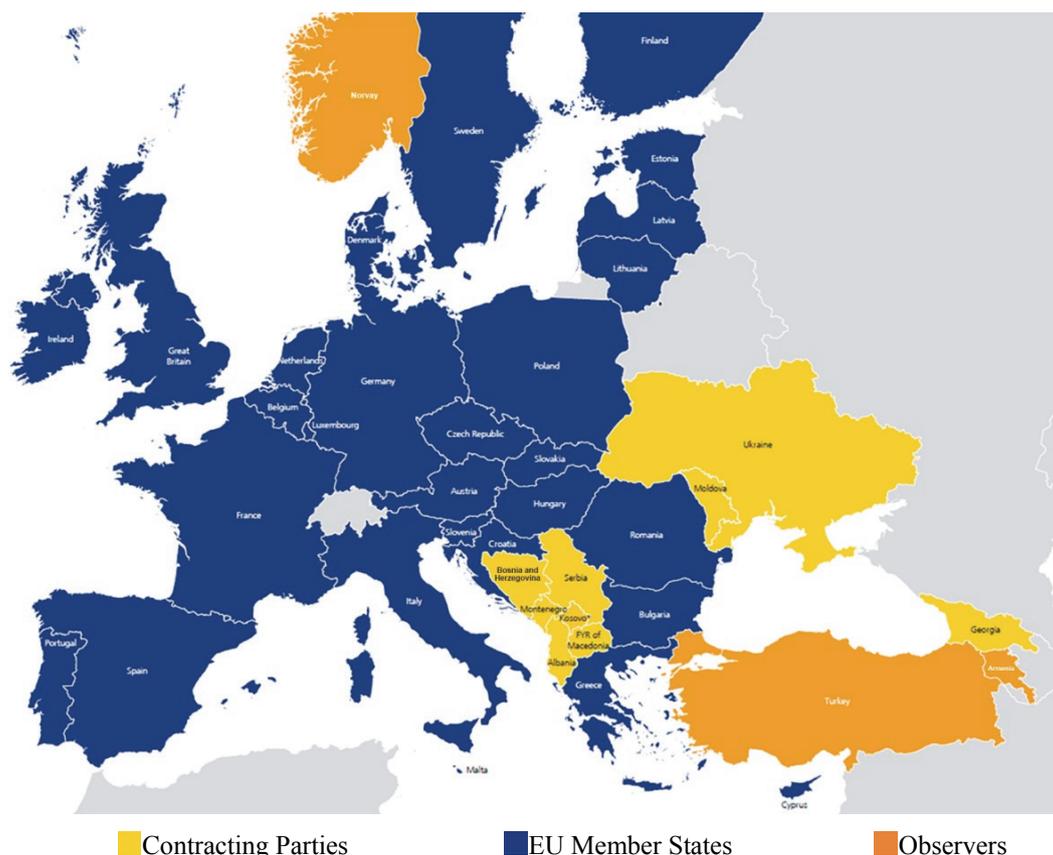
By signing the Treaty, the Contracting Parties from the region are obligated to establish a common electricity and gas market that will operate in accordance with the standards of the EU energy market into which it will integrate. It is to be achieved by gradual transposition of the EU *acquis*, which means the implementation of the relevant EU directives and regulations pertaining to electricity, gas, security of supply, environment, competition, renewable energy sources, energy efficiency, oil, statistics and infrastructure (ANX E).

The Treaty establishing the Energy Community is valid until July 2026.

⁶ The list shows the Contracting Parties on 31 December 2017. Moldova, Ukraine and Georgia have Contracting Party status as of 1 May 2010, 1 February 2011 and 1 July 2017 respectively.

When the Treaty entered into force, Bulgaria and Romania were also the Contracting Parties which joined the European Union on 1 January 2007 as well as Croatia which is an EU Member State as of 1 July 2013.

Figure 19. Geographic scope of the Energy Community



To ensure an adequate process of establishing and functioning of the Energy Community, the Treaty established a Ministerial Council, Permanent High Level Group, Regulatory Board, Electricity Forum (Athens Forum), Gas Forum, Oil Forum and the Secretariat.

The Ministerial Council, as the highest body of the Energy Community, ensures the achievement of goals that are determined by the Treaty establishing the Energy Community. The Ministerial Council consists of one representative of each Contracting Party and two representatives of the European Union.

The Permanent High Level Group (PHLG) brings together senior officials from each Contracting Party and two representatives of the European Community, ensuring continuity of and follow-up to Ministerial Council's meetings, implementing agreed activities and deciding on implementing measures in certain cases.

The Energy Community Regulatory Board (ECRB), seated in Athens, is composed of representatives of the regional national regulatory bodies, while the European Union is represented by the European Commission, with the assistance of one regulator of each EU participants and one representative of the Agency for the Cooperation of Energy Regulators (ACER). The ECRB considers the issues of regulatory cooperation and may become a body issuing regional regulatory decisions and serving as a dispute resolution institution. The Regulatory Board has a key role in expanded market operation. According to the opinion of the European Commi-

ssion, this supranational body may become a role model for other parts of the world.

Energy Community Fora, dedicated to electricity, gas and oil, bring together all interested stakeholders, including representatives of governments, regulators, industry, customers, international financial institutions etc.

The Energy Community Secretariat, seated in Vienna, represents the key administrative actor and, together with the European Commission, ensures the necessary coordination and supports the work of other institutions. The Secretariat is responsible for reviewing the proper implementation by the Contracting Parties of their obligations under the Treaty, and it submits yearly progress reports to the Ministerial Council. To this extent, the Secretariat acts as a *'guardian'* of the Treaty establishing the Energy Community, while the European Commission plays a general coordinator role.

In the past period, the Energy Community has grown into a mature organisation, which provides a solid institutional framework for cooperation, mutual support and exchange of experiences and, therefore, serves as a model for regional cooperation on energy matters.

Through the efficient operation of the *Dispute Resolution and Negotiation Centre*, which was established in 2016, implementing measures and dispute settlement rules were improved thus enhancing the implementation of the legal framework and reduction of investment risks. Furthermore, the establishment of a *Parliamentary Plenum* strengthened the role of national parliaments with parallel increase in transparency in the Energy Community institutions.

In 2018, the activities on the legal framework development were continued in the Energy Community, in particular on the development and implementation of national laws pertaining to energy markets, renewable sources, energy efficiency and environment. A particular attention was paid to cooperation with representatives of civil society and business undertakings.

The significant support to the energy market development is provided by the measures adopted in the framework of the 'Berlin process', i.e. the initiative of six Western Balkans countries (WB6 initiative) which includes Albania, Bosnia and Herzegovina, Kosovo*, Macedonia, Montenegro and Serbia. In the area of electricity, they primarily refer to removal of shortcomings in primary and secondary legislation, development of organised wholesale and balancing markets, market allocation of cross-border capacities, deregulation of prices, unbundling of commercial activities from those characterised by natural monopoly and strengthening the regulatory independence. Within this process, representatives of transmission system operators, power exchanges, regulatory authorities and ministries signed a *Memorandum of Understanding* in Vienna on 27 April 2016 which set out general principles of cooperation as well as concrete actions to develop the regional electricity market.





Following the summits held in Berlin, Vienna, Paris and Trieste the Fifth Western Balkans Summit was held in London on 10 July 2018 in London. Before the Summit, on 4 July 2018 Great Britain and Austria hosted a meeting of Western Balkans economy ministers under the Berlin Process. The topic of discussion was energy transition with the focus on environmental protection and hydropower potentials in transition and reduction of the dependency on energy imports. The goal of the Berlin Process is to strengthen cooperation between the Western Balkans countries and their accession to the European Union. Cooperation programs in various sectors focusing on regional transport and energy infrastructure and reforms, emphasised that well-connected and functioning infrastructure networks drive economic growth, provide business opportunities, attract investments and generate jobs.

The Energy Community Ministerial Council, which informally met in the period from 22 to 24 June 2018, held a meeting on 29 November 2018. On that occasion, a *List of projects of regional significance* was adopted, the implementation of which enhances regional energy market integration, strengthens security of supply, increases energy efficiency and the use of renewable energy sources. It was agreed to continue negotiations on amendments to the Treaty establishing the Energy Community with a view to integrating the markets of the Energy Community Contracting Parties and EU Member States.

On this occasion, ministries of energy and environmental protection were brought together, which reflects strong commitment of the Energy Community to the use of renewable or ‘green’ energy in the energy transition. The ministerial Council adopted *the General Policy Guidelines on 2030 Energy and Climate Targets* which recognise the need to establish targets on energy efficiency, renewable energy sources and greenhouse gas emission reduction. The targets should be in line with the EU targets, represent an equal ambition for the Contracting Parties and take into account relevant socio-economic differences, technological developments and commitments under the *Paris Agreement on Climate Change*.

Furthermore, it was agreed to include into the *acquis* in 2019 the new Governance Regulation, the revised Energy Efficiency Directive as well as the revised Renewable Energy Directive⁷ setting renewable energy targets for the Contracting Parties until 2030. At the same meeting, Regulation (EU) 2017/1369 setting a framework for energy labelling and repealing Directive 2010/30/EU and Regulation (EU) 1227/2011 on wholesale energy market integrity and transparency (REMIT) were incorporated into the *acquis* by the Ministerial Council decisions.

⁷ Regulation (EU) 2018/1999, Directive (EU) 2018/844 and Directive (EU) 2018/2001

The Permanent High Level Group (PHLG) decisions of 12 January 2018 incorporated into the *acquis* three regulations on network codes in the electricity sector and one in the gas sector and amended Annex I to the Regulation (EU) 715/2009. On 28 November 2018, PHLG incorporated into the *acquis* two more regulations in the gas sector.

Announcing its presidency of the Energy Community as of 1 January 2019 and presenting the priorities in 2019, Moldova announced finalising multiannual discussions on amendments to the Treaty establishing the Energy Community which would ensure that the Energy Community can fulfil its objectives and live up to the requirements of a single energy market. Moldova will also put emphasis on ensuring a more consistent policy on sustainable energy production and consumption. A key priority for 2019 is the adoption of the 2030 targets for renewable energy, energy efficiency and greenhouse gas emissions reduction in the Energy Community through transposition of the recent European Union energy package allowing for competitiveness in the clean energy transition (*Clean Energy for All Europeans*) in the Energy Community Contracting Parties as well.

Bosnia and Herzegovina and the Energy Community

By active participation in the Energy Community, Bosnia and Herzegovina confirms its commitment to the energy sector reforms, energy market liberalisation and harmonisation of its policies with those of EU Member States.

It is obvious that in Bosnia and Herzegovina additional efforts should be made at different administrative levels to transpose and implement the Energy Community *acquis*. The deadlines for the fulfilment of numerous obligations of BIH have already expired, with a relatively short period of time left for the remaining obligations (ANX E).

This is also indicated by the six infringement cases initiated by the Energy Community Secretariat as well as two decisions of the Energy Community Ministerial Council adopted on 29 November 2018. On that occasion, Case ECS-1/14 was closed with the conclusion that BIH did not meet its obligations as it failed to transpose and implement Directive 2006/32/EC on energy end-use efficiency and energy services but it was stressed that Bosnia and Herzegovina is obligated to implement these activities without further delay and the Secretariat is invited to initiate the procedure under Article 92 of the Treaty if Bosnia and Herzegovina fails to act accordingly.

Pursuant to the second decision Case ECS-3/18 was closed pertaining to the failure to transpose Regulation (EU) 347/2013 on guidelines for trans-European energy infrastructure and notify the Secretariat of transposition measures accordingly. On this occasion as well, the Secretariat stressed the obligation to implement these activities without further delay and invited the Se-

cretariat to initiate the procedure under Article 92 of the Treaty establishing the Energy Community if Bosnia and Herzegovina fails to act accordingly by 1 July 2019.

Furthermore, the Secretariat registered Case ECS-10/18 acting upon a complaint of non-governmental organisations on the Decision of the BIH State Aid Council, which finds that the state aid provided to the beneficiary JP Elektroprivreda BIH in the form of the guarantee for a loan of € 614 million for the construction of TPP Tuzla Block 7 project does not constitute state aid for the purpose of the Law on State Aid. It is the preliminary understanding of the Secretariat that it is not compliant with the Energy Community competition *acquis* and constitutes the violation of provisions of Articles 18 and 19 of the Treaty establishing the Energy Community. This case will be dealt with under the Energy Community infringement procedures.

SERC Activities in the Energy Community Bodies

The work of the State Electricity Regulatory Commission in the Energy Community was carried out with the necessary cooperation of the Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina, through support and contribution to the implementation of different projects supporting the Energy Community development, and in particular, through proactive involvement in surveys which were planned and implemented by different groups with the wider thematic spectrum bringing together energy regulators from the region and the European Union.

SERC activities in the Energy Community continue to focus on the Energy Community Regulatory Board (ECRB), which was established on 11 December 2006 in Athens. Since then SERC actively participates in its activities, representing the interests of BIH. The chairmanship of the ECRB Customers and Retail Markets Working Group since 2007 contributes to the affirmation of BIH.

In 2018, during which the Regulatory Board held three meetings, it gave a significant contribution to the creation of Energy Community policies in the field of regulatory initiatives in promoting network investments, treating interconnections between the Energy Community Contracting Parties and European Community Member States and enhancing regulatory independence. In the past year, the ECRB continued the joint activities with the Agency for the Cooperation of Energy Regulators (ACER), the Council of European Energy Regulators (CEER) and the Mediterranean Energy Regulators (MEDREG).

The ECRB organises a considerable part of its activities through several working groups (Electricity Working Group, Gas Working Group and Customers and Retail Markets Working Group), with the support of the relevant Energy Community Secretariat Section.





4.2 Energy Regulators Regional Association – ERRA

The Energy Regulators Regional Association (ERRA) is an organisation composed of independent energy regulatory bodies from Europe, Asia, Africa and America. Amendments to the ERRA Constitution made in 2015 removed barriers for joining of regulators from new regions and allowed active participation of all members. ERRA members come from 39 countries of which 33 are full members while ten are associate members (Figure 20).

The goals of ERRA are the improvement of energy regulation in the member countries, facilitating the development of independent and stable energy regulators, improvement of cooperation among regulators, exchange of information, research and experience among the members, better access to information on world-wide experience on regulation of energy activities.

The State Electricity Regulatory Commission is a full ERRA member as of 19 May 2004. At the General Assembly meeting held in May 2010, the two entity regulatory commissions, the Regulatory Commission for Energy in the Federation of BiH and the Regulatory Commission for Energy of Republika Srpska, became ERRA associate members.

SERC representatives actively participate in the work of the General Assembly and Investment Conference. Commitment of the representatives of the State Electricity Regulatory Commission was observed also in the work of standing committees and working groups with a particular emphasis on the Customers and Retail Markets Working Group, the Standing Tariff/Pricing

Figure 20. ERRA membership



Committee and the Standing Licensing/Competition Committee. The BIH chairmanship of the latter Committee since 2010 contributes to the affirmation of BIH in ERRA.

In addition to active participation in the ERRA bodies, the State Electricity Regulatory Commission fulfils its role as a member of this regional Association by providing relevant information on the power sector and regulatory practice in Bosnia and Herzegovina.

The historical evolution of topics of interest to the members is evident within the ERRA institutions. The widely present restructuring of the energy sector and markets was the reason for choosing competition-oriented sustainable solutions as the topic in focus of regulatory authorities' interest and activities.

4.3 Mediterranean Energy Regulators – MEDREG

The Mediterranean Energy Regulators (MEDREG) was established in 2007 in order to facilitate cooperation among the energy regulators from the countries of Northern, Southern and Eastern shores of the Mediterranean basin. The Association gathers regulatory authorities from Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Italy, Israel, Jordan, Lebanon, Libya, Malta, Mauritania, Montenegro, Morocco, the Palestinian Authority, Portugal, Slovenia, Spain, Tunisia and Turkey (Figure 21).

The main objective of the Association is the promotion of clear, stable and harmonised legal and regulatory frameworks in the Mediterranean region with the aim of facilitating investments in energy infrastructures and supporting market integration. Towards



Figure 21. Geographic scope of MEDREG



*Mrs. GüleŖŖan DemirbaŖ,
MEDREG President:
“Our organisation will continue to play a major role in the Mediterranean in enhancing regulatory stability and in contributing to socio-economic prosperity in the region by supporting the establishment of secure, sustainable and competitive Mediterranean energy markets.”
From the statement given on
29 November 2018, Istanbul*



this goal, MEDREG promotes a permanent exchange of know-how, data collection and diffusion of expertise through comprehensive studies, recommendation reports and specialised training sessions in the field of energy regulation. The Association is also dedicated to consumer protection focusing on access to information and awareness-raising regarding changes in the sector.

Its organisation is structured around the General Assembly, the Secretariat seated in Milan and five working groups: (1) on Institutional Issues, (2) on Electricity, (3) on Gas (4) on Environment, Renewable Energy Sources and Energy Efficiency and (5) on Customer Issues. MEDREG carries out its activities through an effective internal and external cooperation process with the objective to implement the conditions for the establishment of a Mediterranean Energy Community.

SERC representatives directly participate in the work of the General Assembly, while the contribution to the activities of Working Groups is provided by the use of various communication tools and provision of required information and comments on draft documents.

4.4 Council of European Energy Regulators – CEER

The Council of European Energy Regulators (CEER) is a non-profitable association of independent statutory bodies responsible for energy regulation at national level. CEER brings together 37 national regulatory authorities (29 full members and eight observers) from European Union Member States, European Free Trade Association (EFTA) and EU accession countries including Contracting Parties of the Energy Community Treaty.

The Council of European Energy Regulators is at the forefront of efforts to foster competitive energy markets and empower consumers. Working collectively through CEER, national regulatory authorities develop forward thinking proposals at EU level, spreading best practice and delivering solutions back within NRAs.

In late 2015, the Council of European Energy Regulators opened its doors to the Energy Community Contracting Parties. The State Electricity Regulatory Commission has observer status in CEER as of 1 January 2017. As Observers, SERC staff participates in activities of the CEER General Assembly and CEER's working groups. Furthermore, the State Electricity Regulatory Commission has access to the CEER successful and established regulatory network and cooperation tools, and the possibility of a deep understanding of European Union energy policies and practices. In this regards, participation in the Council of European Energy Regulators is also helpful on the path of Bosnia and Herzegovina towards EU membership, and the full obligations this will entail in terms of implementation of the *acquis* in the field of energy.

4.5 International Confederation of Energy Regulators – ICER

The International Confederation of Energy Regulators (ICER), established in October 2009, is a voluntary framework for cooperation between energy regulators from around the globe. ICER’s aim is to improve public and policy-maker awareness and understanding of energy regulation and its role in addressing a wide spectrum of socio-economic, environmental and market issues.

Over 250 regulatory authorities on six continents are included in the ICER’s membership through 11 regional regulatory associations and two national energy regulatory authorities (Figure 22). SERC participates in and follows the activities of ICER through ERRA, MEDREG and CEER.

ICER’s work is focused around several key areas, in line with the topics defined during each World Forum on Energy Regulation (WFER), the leading international conference on energy regulation, held once every three years. The seventh World Forum on Energy Regulation held in March 2018 in Cancun, Mexico focused on disruptive innovations which are currently transforming the fundamentals of the energy value chain worldwide. Furthermore, the most relevant current regulatory issues including empowered consumers, dynamic markets and sustainable infrastructure were addressed. The Forum promoted the advancement of women in energy by streamlining gender perspective in all of its activities which is the continuation of activities launched in October 2013 in



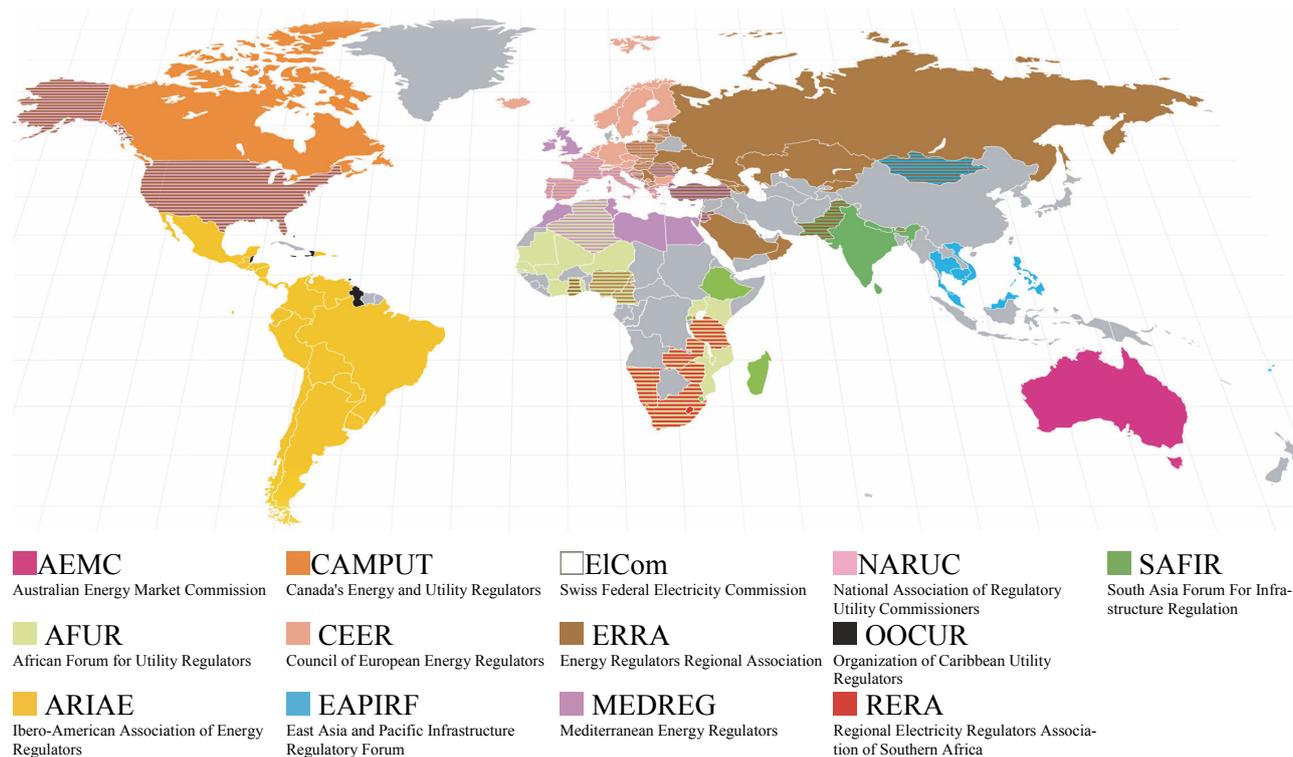
Mr. Daniel Schmerler, ICER President:

“At this critical time in energy regulation, ICER provides us with an important forum to come together, share best practices and identify solutions to the most pressing regulatory challenges of our time.”

From the statement given on 26 March 2018, Cancun



Figure 22. ICER Members





ICER's *Women in Energy* initiative. The upcoming Eighth World Forum on Energy Regulation will be held in Lima, Peru, in March 2021.

In 2013, ICER launched its Chronicle as a means to further promote ICER goals of enhanced exchange of regulatory research and expertise. Since then a SERC employee has been engaged as a member of the Editorial Board of this professional magazine. The ICER Chronicle is a publication issued twice a year in electronic format, gathering articles on regulatory topics.

SERC actively participates in ICER's activities and provides support in different ways, including the provision of responses regarding different activities and surveys, thus enabling an insight into and the exchange of practice in the area of relevance to regulatory activities.

4.6 Cross-Regional Cooperation

Various forms of cooperation between regional energy regulators associations exist for a certain period of time through organisation of joint training events, workshops and relevant working group meetings. While some associations share various member regulators, they operate in regions that substantially differ in their degree of integration, meaning that common challenges are often met with different means. At the same time some common memberships of the associations promote convergence of goals and principles. This is the reason why cooperation of these associations in terms of exchanging experiences and regulatory practices becomes more important.

Mr. Garrett Blaney, CEER President: "The arrangement is a logical next step forward for our organisations for greater pan-European integration."

Mr. Giorgi Pangani, ECRB President: "It reaffirms the values that we all share and puts our cooperation on a firmer basis."

Mrs. Güleşan Demirbaş, MEDREG President: "We are moving from individual initiatives for cooperation to an integrated approach."

On the occasion of the signing of the Cooperation Arrangement, Vienna, 12 December 2018

Recognising the relevance of these forms of cooperation and the commitment to foster a compatible and transparent energy regulation by promoting best practices and exchanging experiences, the Council of European Energy Regulatory (CEER), the Energy Community Regulatory Board (ECRB) and the Association of Mediterranean Energy Regulators (MEDREG) signed a Cooperation Arrangement on 12 December 2018 in Vienna. This document will strengthen regulatory cooperation between energy regulators of the European Union, the Mediterranean, South East Europe and Black Sea regions, with a particular focus on the following fields:

- exchanging best practices in the field of energy market regulation,
- promoting capacity building, joint events and training on regulatory topics,
- strengthening existing bilateral and trilateral cooperation mechanisms, and
- developing joint reports where beneficial for all three organisations.

The State Electricity Regulatory Commission is a member of both ECRB and MEDREG and has observer status at CEER. This position of SERC will further strengthen its professional capacities in terms of gaining more knowledge and exchanging experience and regulatory practice. Furthermore, it will give more opportunities to continue the successful engagement of SERC experts in providing professional training for the staff of other regulators through organisation of joint training events in which SERC representative had a noticeable role.

5. AUDITING REPORT

Pursuant to the *Law on Transmission of Electric Power, Regulator and System Operator of BIH*, SERC is funded from its own revenues. The basic revenue of SERC in 2018 was the regulatory fee paid by holders of licences for performance of the activity of electricity transmission, independent system operator, international electricity trading and supply of customers with electricity and electricity distribution in the Brčko District BIH. The regulatory fee is determined so as to cover SERC's costs, while the obligations to pay the regulatory fee in the forthcoming period are reduced by an excess of revenues over expenditures.

In addition to efforts to attain the mentioned own funding, SERC financial dealings also include the following activities:

- incurrence and settlement of financial obligations for the needs as defined in the approved Financial Plan,
- short-term planning and cash flow management,
- regular monitoring of the Financial Plan implementation in the current year,
- an analysis and estimate of future cash flows as the basis for development of a new financial plan,
- preparation of the financial plan for the following year,
- internal financial reporting as the basis for adoption of the relevant business decisions,
- financial reporting to external bodies, authorised institutions and the public.

The final outcome of the aforementioned activities and adopted decisions are financial reports presenting business results at the end of a business year. Financial reports are audited every year in order to have an independent and impartial audit of the stated business results as well as to check the compliance of these procedures with the applicable regulations.

The audit of SERC financial reports for the previous year was performed in the first quarter of 2018 by the Auditing, Accounting and Consulting Company REVIK d.o.o. Sarajevo with which a contract was concluded through a competitive request for quotations.

While performing an audit pursuant to the International Standards on Auditing, the auditors collected evidence on amounts and other data as published in the financial reports to be confident beyond doubt that they did not include any relevant material mistakes. In addition to determining the objectivity of the financial reports as a whole, the performed audit included concurrent evaluation of accounting policies applied and relevant estimates of the SERC management.

“In our opinion, the annual financial reports show realistically and objectively the financial standing of SERC on 31 December 2017, its business results and cash flow for the year which ended at that point, in accordance with the Law on Accounting and Auditing of the Federation BIH and the International Financial Reporting Standards (IFRS).”

REVIK,
Sarajevo, 6 April 2018



Based on the collected data, the independent auditor gave a positive assessment of SERC financial reports for 2017. It is the opinion of the independent auditor that the presentation of financial reports, recognising and measuring of transactions and business events, objectively and realistically present the state of assets, liabilities, capital and financial results of business performance.

With the mentioned opinion, SERC maintained the highest audit opinion for compliance of its financial reports with the international accounting standards and legal regulations, which SERC was given in the previous periods by external auditors, including the opinions by the Office for Auditing of the Institutions of Bosnia and Herzegovina.

No irregularities were found through *ex-post* controls of financial transactions. This confirmed the efficiency of the established financial management and internal control system enabling the prevention or identification of possible mistakes in order to protect the property from loss caused by negligence or poor management.

With the aim of further enhancing the system of financial management and control, in the previous period SERC signed an *Internal Audit Agreement* with the Internal Audit Unit of the BIH Ministry of Foreign Trade and Economic Relations. Through internal audit consulting activities in line with the principles and standards implemented by the institutions of Bosnia and Herzegovina, SERC expects objective and professional assistance in facilitating the organisation of business activities based on risk management. The aim of using internal auditing services is to ensure the development and additional *ex-ante* audit of defined processes and strengthen the overall risk management process (so-called risk management). In the reporting period there was no internal auditing but in 2018 a new *Internal Audit Agreement* was signed.

Through external auditing, SERC ensures an independent and reliable report on the use of property and management of revenues and expenditures. The revised annual financial report is published by the State Electricity Regulatory Commission on an annual basis with the aim of providing information on its financial standing and business results to interested persons and the wider public. The audited financial reports for 2017 were published in the Official Gazette of BIH, 26/18 and on the SERC website.

6. MAIN ACTIVITIES IN 2019

The State Electricity Regulatory Commission will continue its activities on providing the conditions for free trade and unhindered electricity supply in accordance with the previously defined quality standard to the benefit of citizens of Bosnia and Herzegovina, and in compliance with international agreements, national laws, the relevant European regulations and directives as well as other internal electricity market rules.

In 2019, SERC will continue to cooperate with the Parliamentary Assembly of Bosnia and Herzegovina (PA BIH), in particular with the Committee on Traffic and Communications of the House of Representatives of PA BIH and the Committee on Foreign and Trade Policy, Customs, Traffic and Communications of the House of Peoples of PA BIH. In addition, the focus of interest will remain on the information exchange and harmonisation of key regulatory activities with the Ministry of Foreign Trade and Economic Relation of BIH, which is competent for policy creation in accordance with the *Law on Transmission of Electric Power, Regulator and System Operator of BIH*.

All existing modalities of mutual follow up and harmonisation of activities will be used also in 2019 in relationships with the Regulatory Commission for Energy in the Federation of BIH and the Regulatory Commission for Energy of Republika Srpska as well as with other regulatory bodies established at national level, primarily the Competition Council of BIH.

In order to meet the need of different decision-making levels for quality and reliable statistical energy data, SERC will remain a reference source and an active generator of these data. To this end, SERC will follow developments of EU rules and comply with the Energy Community agenda continuing its cooperation with the BIH Agency for Statistics.

Furthermore, SERC will follow activities and trends in the whole energy sector and directly participate in all relevant events.

Through its activities SERC will focus on:

- Setting tariffs in line with SERC competencies,
- Issuance of licences,
- Regulatory monitoring of licensed entities,
- Creation of new regulatory rules and analysis of the regulatory rules already adopted and the existing practice, together with review and revision of SERC acts,
- Monitoring the procurement of ancillary service and provision of the system services and balancing of the BIH power system, and, on a needs basis, continuing the development of a model for these services,

- Fostering a higher degree of integration of the national electricity market,
- Contribution to organising and functioning of the wholesale market, including the establishment of an institutional framework for an organised day-ahead market,
- Contribution to organising and functioning of the fully open retail market in BIH,
- Development of rules regulating connection of users to the transmission system,
- Capacity building in terms of the fulfilment of international obligations with regard to regulatory reporting,
- Approving and monitoring rules developed by the Independent System Operator in Bosnia and Herzegovina, Elektroprenos BIH and Komunalno Brčko,
- Approving the *Indicative Generation Development Plan for the Period 2020 – 2029* and the *Long-Term Transmission Network Development Plan* for the upcoming ten-year period as well as an *Investment Plan of Elektroprenos BIH*,
- Monitoring the implementation of the Inter-TSO Compensation Mechanism (ITC mechanism) and operation of the Coordinated Auction Office in South East Europe (SEE CAO),
- Regulatory activities regarding the European network codes and guidelines,
- Sharing information on regulatory practice with the regulated entities and the public, and
- Performing other tasks within competences vested in SERC.

While conducting its activities SERC will take into account the protection of customers and give its full contribution to the creation of best applicable solutions in accordance with competences vested in SERC under law.

Taking into account the fact that under the Treaty establishing the Energy Community Bosnia and Herzegovina is obligated to transpose the rules of the European Union on the internal energy market ('Third Energy Package') into its national legislation and apply them in practice, SERC will contribute to the legal framework development in line with its competences and through optimal coordination with other stakeholders.

The implementation of the power sector reform in Bosnia and Herzegovina, harmonisation of secondary legislation and efficient coordination among the bodies participating in its drafting and development is in the interest of all stakeholders. The aim is to create a clear and stable legal framework based on the European directives and rules on the internal electricity market.

In this context, SERC is planning to continue to actively participate in the development of an EU-*acquis*-compliant legislative frame-

work in the field of electricity in Bosnia and Herzegovina, and removal of shortcomings in the power sector as specified in the reports of the European Commission on BIH.

In line with its competences, SERC will contribute to the implementation of recommendations of meetings of the BIH Stabilisation and Association Committee and Subcommittee on Transport, Energy, Environment and Regional Development. As one of the institutions competent for transposition and implementation of the *acquis*, SERC will continue to provide its contribution in the next stages following the preparation of answers to the Questionnaire of the European Commission for the preparation of the Opinion on the BIH Application for the membership of the European Union, in particular with regard to Chapter 15: Energy, Chapter 21: Trans-European networks, Chapter 28: Consumer and Health Protection and some issues under Economic Criteria.

SERC will also participate in supporting and implementing regional priorities and Energy Community projects but also in the priorities identified for the BIH power sector within the Energy Community as specified in the Conclusions of the BIH Council and *Annual Implementation Report of the Acquis under the Treaty establishing the Energy Community*. Furthermore, SERC will fully contribute to the implementation of measures in the energy sector as agreed within the 'Berlin Process'. In accordance with the position of Bosnia and Herzegovina, SERC will participate in the CESEC initiative (the European Commission Initiative on Central and South-Eastern European Energy Connectivity).

SERC is also planning to contribute to the continued implementation of several regional projects of the United States Agency for International development (USAID) and the National Association of Regulatory Utility Commissioners (NARUC).

In 2019, it is planned to finalise the multiannual USAID project *Energy Investment Activity* (EIA) so the State Electricity Regulatory Commission will continue to follow its activities and participate in the implementation of some components relating to the regulatory activities. The participation in the GIZ project *Promoting Renewable Energy in BIH* will also continue. Furthermore, SERC plans to actively participate in the Fifth Energy Summit in BIH, which is planned in spring 2019 under these two projects.

SERC will also focus on the activities of international bodies pertaining to the electricity market regulation, primarily of those in the work of which SERC participates:

- ECRB – the Energy Community Regulatory Board,
- ERRA – the Energy Regulators Regional Association,
- MEDREG – the Mediterranean Energy Regulators,
- CEER – the Council of European Energy Regulators, and
- ICER – the International Confederation of Energy Regulators.

Furthermore, SERC will continue to follow up the work of the Agency for the Cooperation of Energy Regulators (ACER), and depending on the legal framework development in BIH consider the possibility to directly participate in activities of this body.

In the forthcoming period SERC will analyse contents and activities stemming from the new package of European Union energy rules the goal of which is to provide competition needed to facilitate the clean energy transition (Clean Energy for All Europeans). This approach takes into account the fact that all new EU regulations and directives in the energy sector become binding also for Bosnia and Herzegovina through the mechanisms established under the Treaty establishing the Energy Community. It should be emphasised that the following four acts from this new Package have already entered into force:

- Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency,
- Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (This so-called Governance Regulation includes the requirement for all Member States to draw up their integrated National Energy and Climate Plans in the period from 2021 to 2030),
- Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (this revised Directive on renewable energy sources establishes a binding EU target of a share of at least 32 % of renewable energy for 2030), and
- Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency.

Furthermore, already at the beginning of 2019 the adoption of the remaining legislative acts from the new EU legislative package *Clean Energy for All Europeans* is expected, i.e., Regulation on the internal market for electricity, Directive on common rules for the internal electricity market, Regulation establishing an Agency for the Cooperation of Energy Regulators and Regulation on risk-preparedness in the electricity sector.

ANNEX A: Basic Data on the Power System of Bosnia and Herzegovina

(Source: ISO BIH, Elektroprenos BIH and public electric power utilities)

Basic Data on Installed Capacity of Generation Units

Total installed capacity of generation units in Bosnia and Herzegovina amounts to 4,462.23 MW, with 2,076.60 MW and 2,065 MW installed in the major hydro power plants and thermal power plants respectively. Installed capacity of small hydro, wind, solar and biogas and biomass power plants amounts to 159.00 MW, 51.00 MW, 18.15 MW and 1.24 MW respectively, while installed capacity of industrial power plants amounts to 91.23 MW.

Hydro power plants	Capacity of power unit (MW)	Total installed capacity (MW)
Trebinje I	2×54+63	171
Trebinje II	8	8
Dubrovnik (BIH+Hr.)	126+108	234
Čapljina	2×210	420
Rama	80+90	170
Jablanica	6×30	180
Grabovica	2×57	114
Salakovac	3×70	210
Mostar	3×24	72
Mostarsko blato	2×30	60
Peć-Mlini	2×15,3	30.6
Jajce I	2×30	60
Jajce II	3×10	30
Bočac	2×55	110
Višegrad	3×105	315

Thermal power plants	Installed capacity (MW)	Available capacity (MW)
TUZLA	715	635
<i>Tuzla G3</i>	100	85
<i>Tuzla G4</i>	200	182
<i>Tuzla G5</i>	200	180
<i>Tuzla G6</i>	215	188
KAKANJ	450	398
<i>Kakanj G5</i>	110	100
<i>Kakanj G6</i>	110	90
<i>Kakanj G7</i>	230	208
GACKO	300	276
UGLJEVIK	300	279
STANARI	300	283
Wind power plants	Capacity of power unit (MW)	Total installed capacity (MW)
Mesihovina	22×2.3	50.6

Basic Data on the Transmission System

<i>transmission lines</i>	
Nominal voltage of transmission lines	Length (km)
400 kV	865.93
220 kV	1,520.09
110 kV	3,982.92
110 kV – cable line	33.15

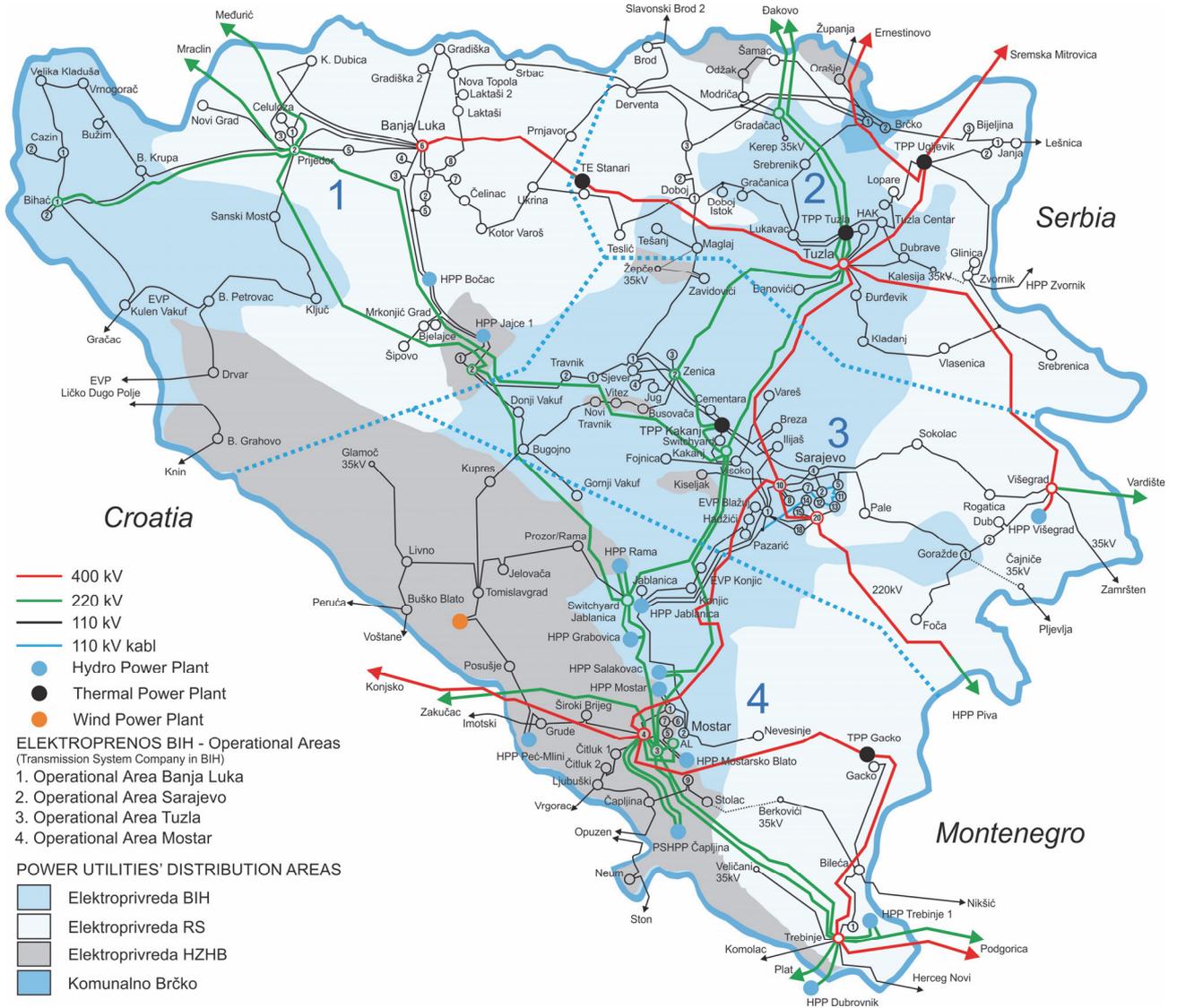
<i>interconnections</i>	
Nominal voltage of transmission lines	Number of interconnectors
400 kV	4
220 kV	10
110 kV	23
<i>Total</i>	<i>37</i>

<i>substations</i>		
Type of substation	Number of substations	Installed capacity (MVA)
SS 400/x kV	10	5,980.5
SS 220/x kV	8	1,423.0
SS 110/x kV	135	5,499.5

<i>transformers</i>		
Transmission ratio of transformers	Number of transformers	Installed capacity (MVA)
TR 400/x kV	14	4,900.0
TR 220/x kV	13	1,950.0
TR 110/x kV	248	6,053.0

ANNEX B:

Map of the Electric Power System of Bosnia and Herzegovina with Operational Areas of Elektroprenos BIH and Distribution Areas of Public Electric Power Utilities (31 December 2018)



ANNEX C: Balance Values of the Electric Power Sector of Bosnia and Herzegovina

(GWh)

Year 2018	EP BIH	ERS	EP HZHB	Komunalno Brčko	Other entities	BIH
Generation in hydro power plants	1,533.61	2,729.05	1,984.86		52.56	6,300.08
Generation in thermal power plants	5,648.34	3,249.42			2,056.00	10,953.76
Generation in larger wind plants			103.50			103.50
Generation in small and industrial PPs	63.46	50.58			401.61	515.65
Generation	7,245.41	6,029.05	2,088.35		2,510.18	17,872.99
Distribution consumption	4,705.96	3,770.48	1,392.22	270.02		10,138.68
Transmission losses						398.77
Large customers	464.34	361.65	131.09		1,646.73	2,603.81
PPs self-consumption and pumping		11.77	137.43		3.49	152.69
Consumption	5,089.64	4,143.91	1,650.44	270.02	1,650.22	13,293.95

Year 2017	EP BIH	ERS	EP HZHB	Komunalno Brčko	Other entities	BIH
Generation in hydro power plants	941.41	1,575.30	1,287.41		27.27	3,831.39
Generation in thermal power plants	6,007.23	2,870.62			2,040.59	10,918.44
Generation in small and industrial PPs	60.38	42.21			298.98	401.57
Generation	7,009.02	4,488.13	1,287.41	0	2,366.84	15,151.40
Distribution consumption	4,730.02	3,772.64	1,399.58	276.86		10,179.10
Transmission losses						341.52
Large customers	1,225.42	339.99	3.40		993.01	2,561.82
PPs self-consumption and pumping		14.03	266.11		3.82	283.96
Consumption	5,955.44	4,126.66	1,669.09	276.86	996.82	13,366.40

Year 2016	EP BIH	ERS	EP HZHB	Komunalno Brčko	Other entities	BIH
Generation in hydro power plants	1,395.40	2,498.19	1,540.38		35.41	5,469.39
Generation in thermal power plants	5,780.27	3,261.70			1,565.94	10,607.91
Generation in small and industrial PPs	68.99	55.02			307.63	431.64
Generation	7,244.66	5,814.91	1,540.38		1,908.99	16,508.94
Distribution consumption	4,548.29	3,721.07	1,364.62	270.08	83.65	9,987.72
Transmission losses						333.30
Large customers	458.05	281.29	1,503.02		226.59	2,468.94
PPs self-consumption and pumping		11.87	51.73		11.53	75.13
Consumption	5,006.34	4,014.23	2,919.37	270.08	321.77	12,865.10

Year 2015	EP BIH	ERS	EP HZHB	Komunalno Brčko	BIH
Generation in hydro power plants	1,436.28	2,166.12	1,823.14		5,425.54
Generation in thermal power plants	5,413.40	3,298.66			8,712.06
Generation in small and industrial PPs	160.68	93.55	16.03		270.26
Generation	7,010.36	5,558.33	1,839.17		14,407.86
Distribution consumption	4,542.81	3,661.53	1,376.42	265.38	9,846.14
Transmission losses					359.37
Large customers	449.56	159.31	1,763.43*		2,372.30
PPs self-consumption and pumping		13.96	13.90		27.86
Consumption	4,992.37	3,834.79	3,153.75	265.38	12,605.66

*Including the amount of 861.86 GWh which Aluminij and B.S.I. purchased as eligible customers

Year 2014	EP BIH	ERS	EP HZHB	Komunalno Brčko	BIH
Generation in hydro power plants	1,542.61	2,522.09	1,755.81		5,820.52
Generation in thermal power plants	5,786.99	3,133.66			8,920.65
Generation in small and industrial PPs	188.97	82.39	17.31		288.67
Generation	7,518.57	5,738.14	1,773.12		15,029.84
Distribution consumption	4,392.55	3,526.02	1,310.79	251.65	9,481.01
Transmission losses					304.46
Large customers	442.76	155.87	1,811.57*		2,410.20
PPs self-consumption and pumping		14.12			14.12
Consumption	4,835.31	3,696.01	3,122.37	251.65	12,209.79

*Including the amount of 755.93 GWh which Aluminij and B.S.I. purchased as eligible customers

ANNEX D: Electric Power Indicators of Bosnia and Herzegovina

		2014	2015	2016	2017	2018
Electricity generation	(GWh)	15,029.84	14,407.86	16,508.94	15,151.40	17,872.99
Net imports	(GWh)	3,177.66	3,965.37	3,144.55	3,428.16	3,118.73
Net exports	(GWh)	5,997.70	5,767.57	6,788.40	5,213.15	7,697.77
Total electricity supplied	(GWh)	12,209.80	12,605.66	12,865.10	13,366.40	13,293.95
Gross electricity consumption	(GWh)	12,209.80	12,605.66	12,865.10	13,366.40	13,293.95
Transmission losses	(GWh)	304.46	359.37	333.30	341.52	398.77
Transmission losses	(%)	1.72 %	2.01 %	1.75 %	1.90 %	1.96 %
Distribution losses	(GWh)	1,017.84	1,035.10	1,024.76	1,005.92	950.00
Distribution losses	(%)	10.74 %	10.51 %	10.26 %	9.88 %	9.37 %
PPs self-consumption and pumping	(GWh)	14.12	27.86	75.13	283.96	152.69
Final consumption of electricity	(GWh)	10,873.37	11,183.34	11,431.90	11,735.00	11,792.50
	<i>Non-households</i>	6,267.91	6,456.85	6,698.88	6,978.87	7,107.16
	<i>Households</i>	4,605.46	4,726.49	4,733.02	4,756.13	4,685.33
Maximum system load	(MW)	2,207.00	2,105.00	2,098.00	2,189.00	1,994.00
Net maximum capacity of power plants	(MW)	3,988.58	4,009.14	4,351.88	4,384.77	4,462.23
Coal-fired power plants		1,856.23	1,856.23	2,156.23	2,156.23	2,156.23
Hydropower plants in total		2,127.56	2,150.44	2,180.24	2,207.47	2,235.60
	<i>small hydropower plants</i>	78.96	95.54	96.74	124.00	159.00
	<i>pumped storage power plants</i>	420.00	420.00	420.00	420.00	420.00
Total of other renewable sources		4.79	9.46	15.41	18.06	71.39
	<i>wind</i>	0.30	0.30	0.30	0.30	51.00
	<i>solar</i>	3.16	8.17	14.12	16.52	18.15
	<i>biomass</i>	0.00	0.00	0.00	0.25	0.25
	<i>biogas</i>	0.00	0.99	0.99	0.99	0.99
Transmission network (km)		6,309.94	6,332.66	6,320.94	6,371.11	6,402.10
	<i>380 kV</i>	864.73	864.73	864.73	864.73	865.93
	<i>220 kV</i>	1,524.80	1,524.80	1,520.38	1,520.38	1,520.09
	<i>110 kV</i>	3,920.41	3,943.13	3,935.83	3,986.00	4,016.07
Number of interconnectors		36	37	37	37	37
Substation capacity (MVA)		12,368.50	12,856.50	12,758.50	13,022.00	12,903.00
Electricity customers		1,505,015	1,517,161	1,531,501	1,541,968	1,553,439
	<i>Non-households</i>	122,641	124,327	126,303	127,553	126,508
	<i>Households</i>	1,382,374	1,392,834	1,405,198	1,414,415	1,426,931
Eligible customers		122,641	1,517,161	1,531,501	1,541,968	1,553,439
Customers that switched suppliers		2	2	58	56	31
Electricity supplied	(GWh)	755.93	861.86	321.77	1,859.97	1,737.69
Share in final consumption	(%)	6.95 %	7.71 %	2.81 %	15.85 %	14.74 %
Customers for whom prices are not regulated		16	9.139	10.133	10.521	9.784
Electricity supplied	(GWh)	2,410.20	4,705.94	4,908.68	5,148.53	5,265.27
Share in final consumption	(%)	22.17 %	42.08 %	42.94 %	43.87 %	44.65 %

ANNEX E: Energy Community *Acquis*

The *acquis*, that is, the Energy Community legal framework focuses on directives and regulations from the Third Energy Package providing for common rules for internal electricity and gas markets and regulating cross-border trade. On several occasions, the initial set of the Energy Community rules from 2005 was innovated by new directives and regulations and supplemented by rules on cross-border trade, as well as rules in the areas of security of supply, environment, competition, renewable energy sources, energy efficiency, infrastructure, minimum oil stocks and statistics as well as transparency, that is, obligation to report data on electricity markets.

The Energy Community *acquis* follows the development of the European Union legal framework and at present it includes its key energy legislation in the fields of electricity, gas, security of supply, renewable energy sources, environment, energy efficiency, oil, infrastructure, competition and statistics. The general deadlines for transposition into national legislation and implementation of EU regulations and directives are provided in brackets.

Acquis on Electricity

- Commission Regulation (EU) No 2016/1447 of 26 August 2016 establishing a network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules (deadline: 12 July 2021, except for Articles 4(2) points (a) and (b), 5(4), 75, 76 and 78(1) for which the deadline is 12 July 2018),
- Commission Regulation (EU) No 2016/1388 of 17 August 2016 establishing a network code on demand connection (deadline: 12 July 2021, except for Articles 4(2) points (a) and (b), 6(4), 51(1), 56 and 57 for which the deadline is 12 July 2018),
- Commission Regulation (EU) No 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (deadline: 12 July 2021, except for Articles 4(2) points (a) and (b), 7(4), 58, 59, 61(1), 68(1) and 69(1) for which the deadline is 12 July 2018),
- Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council (deadline: 24 Dec 2015),
- Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency (deadline: 29 May 2020),
- Regulation (EU) No 838/2010 of the European Commission of 23 September 2010 on laying down guidelines relating to the inter-transmission system operator compensation mechanism and a common regulatory approach to transmission charging (deadline: 1 January 2014),
- Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2008 concerning common rules for the internal electricity market and repealing Directive 2003/54/EC (deadline: 1 January 2015, except for Articles 9(1), 9(4) and 11 for which the deadlines are 1 June 2016, 1 June 2017 and 1 January 2017 respectively),
- Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003 (deadline: 1 January 2015).

Acquis on Gas

- Commission Regulation (EU) No 2017/460 of 16 March 2017 establishing a network code on harmonised transmission tariff structures for gas (deadline: 28 February 2020, except for Chapters II, III and IV for which the deadline is 31 May 2021),
- Commission Regulation (EU) No 2017/459 of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems (deadline: 28 Feb. 2020, except for Chapters II, III and IV for which the deadline is 31 May 2021),
- Commission Regulation (EU) No 2015/703 of 30 April 2015 establishing a Network Code on Interoperability and Data Exchange Rules (deadline: 1 October 2018),
- Regulation (EU) No 1227/2011 (please see *Acquis on Electricity*),
- Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal natural gas market and repealing Directive 2003/55/EC (deadline: 1 January 2015, except for Articles 9(1), 9(4) and 11 for which the deadlines are 1 June 2016, 1 June 2017 and 1 January 2017 respectively),
- Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission network and repealing Regulation (EC) No 1775/2005 (deadline: 1 January 2015, except for Annex I for which the deadline is 1 October 2018).

Acquis on Security of Supply

- Directive 2005/89/EC of the European Parliament and of the Council of 18 January 2006 concerning measures to safeguard security of electricity supply and infrastructure investment (deadline: 31 December 2009),
- Council Directive 2004/67/EC of 26 April 2004 concerning measures to safeguard security of natural gas supply (deadline: 31 December 2009).

Acquis on Renewable Energy Sources

- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC, and 2003/30/EC (deadline: 1 January 2014).

National targets for the share of energy from renewable energy sources in total gross consumption in 2020 were defined for the Contracting Parties by the Ministerial Council Decision of 18 October 2012 (2012/04/MC-EnC).

Continued on the next page ⇨

⇒Continuation from the previous page

Acquis on Environment

- Directive (EU) 2016/802 of the European Parliament and of the Council of 11 May 2016 relating to a reduction in the sulphur content of certain liquid fuels (deadline: 30 June 2018),
- Commission Implementing Decision (EU) 2015/253 of 16 February 2015 laying down the rules concerning the sampling and reporting under Council Directive 1999/32/EC as regards the sulphur content of marine fuels (deadline: 30 June 2018),
- Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU (deadline: 1 January 2019),
- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) – only Chapter III, Annex V, and Article 72(3)-(4) (deadline: 1 January 2018),
- Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage, as amended by Directive 2006/21/EC, Directive 2009/31/EC and Directive 2013/30/EU (deadline: 1 January 2021),
- Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on limitation of emissions of certain air pollutants by large combustion plants (deadline: 31 December 2017),
- Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (deadline: 31 March 2018),
- Article 4(2) of the European Community Council Directive 79/409/EEC of 2 April 1979 on conservation of wild birds (deadline: 1 July 2006).

The *acquis* on environment shall be implemented insofar as they affect network energy. According to Article 13 of the Treaty, the Contracting Parties recognise the importance of the Kyoto Protocol and shall endeavour to accede to it.

Acquis on Energy Efficiency

- Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU (deadline: 1 January 2020),
- Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (deadline: 15 October 2017),
- Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (deadline: 30 September 2012).

Acquis on Oil

- Directive 2009/119/EC of the European Parliament and of the Council of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products (deadline: 1 January 2023).

Acquis on Infrastructure

- Regulation (EC) No 347/2013 of the European Parliament and Council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009 (deadline: 31 December 2016).

Acquis on Competition

The following activities are not allowed and shall be assessed pursuant to Article 81, 82 and 87 of the Treaty establishing the European Community:

- Prevention, restriction or distortion of competition,
- Abuse of dominant position,
- Any state aid which distorts or threatens to distort competition.

In particular, with regard to public undertakings and undertakings to which special rights have been granted, provisions of the Treaty establishing the European Community, in particular Article 86, shall be upheld.

* The abovementioned provisions are contained in Articles 101, 102, 106 and 107 of the Treaty on the Functioning of the European Union.

Acquis on Statistics

- Regulation (EU) 2016/1952 of the European Parliament and of the Council of 26 October 2016 on European statistics on natural gas and electricity prices and repealing Directive 2008/92/EC,
- Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics (deadline: 31 December 2013).

When defining the *Acquis*, the Ministerial Council makes certain adaptations of EU rules to the institutional framework of the Energy Community, taking into account time limits in the region. The Ministerial Council also adopted several independent measures pertaining to dispute resolution, establishment of the '8th Region' aimed at facilitation of cross-border electricity trade and measures for coordination of security of supply.

Note: Texts of EU rules provided in this Annex are available on the website of the State Electricity Regulatory Commission (www.derk.ba).

Additional information on the activities and procedures conducted by the State Electricity Regulatory Commission may be obtained on the website at www.derk.ba, by phone on +387 35 302060 and 302070, fax +387 35 302077, e-mail info@derk.ba or at the SERC seat in Tuzla, Đorđa Mihajlovića 4/II.
