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ZYRA E RREGULLATORIT PËR ENERGJI
REGULATORNI URED ZA ENERGIJU
ENERGY REGULATORY OFFICE



ANNUAL REPORT 2020

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List of Abbreviations

AIT	Average Interruption Time
CPA	Central Procurement Agency
EU	European Union
RES	Renewable Energy Sources
CCP	Customer Care Programme
CEER	Council of European Energy Regulators
TENGD	Thermal Energy and Natural Gas Department
LLD	Legal and Licensing Department
CPD	Consumer Protection Department
TPD	Tariffs and Pricing Department
EMD	Energy Market Department
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECRB	Energy Community Regulatory Board
SEE	South-East Europe
EMS	Serbia Transmission System Operation
ENS	Energy Not Supplied
ENTSO-E	European Network of Transmission System Operators for Electricity
ERC	Energy and Water Services Regulatory Commission of the Republic of North Macedonia
ERE	Energy Regulatory Entity of the Republic of Albania
ERRA	Energy Regulators Regional Association
USS	Universal Service Supplier
GWG	Gas Working Group
PHLG	Permanent High Level Group
GWh	Gig watt hour
HC	Hydropower Plant
MAR	Maximum Allowed Revenues
IAP	Ion-Adriatic-Pipeline
ITC	Inter TSO Compensation
EC	Energy Community
KEDS	Kosovo Electricity Distribution and Services
SEEEC	South East Europe Energy Community
KEK	Kosovo Energy Corporation
KESCO	Kosovo Electricity Supply Company
KESH	Albanian Energy Corporation
KfW	German Development Bank
CM	Council of Ministers
km	Kilometre
KOSTT	Transmission, System and Market Operators
PSRC	Public Services Regulatory Commission
kV	Kilovolt
kW	Kilowatt

OL	Overhead line
MPA	Ministry of Public Administration
PPA	Power Purchase Agreement
MESP	Ministry of Environment and Spatial Planning
MVA	Megavoltamper
MW	Megawatt
MWh	Megawatt hours
MW_{TH}	Thermal Megawatt
MED	Ministry of Economic Development
NARUC	National Association of Regulatory Utility Commissioners
AU	Administration Unit
DH	District Heating
SS	Substation
DSO	Distribution System Operator
TSO	Transmission System Operator
MO	Market Operator
PECI	Projects of Energy Community Interest
PRR	Periodic Regulatory Review
RAB	Regulated Asset Base
RoR	Rate of Return
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
ECS	Energy Community Secretariat
TAP	Trans-Adriatic-Pipeline
TPP	Thermal Power Plant
TF	Task Force
ECT	Energy Community Treaty
MV	Medium Voltage
TR	Transformer
LV	Low Voltage
VAT	Value Added Tax
AI	Administrative Instruction
USAID	United States Agency for International Development
WACC	Weighted Average Cost of Capital
WBIF	Western Balkans Investment Framework
CA	Cadastral Area
ERO	Energy Regulatory Office (ERO)

1 EXECUTIVE SUMMARY

The Energy Regulatory Office (hereinafter referred to as the Regulator), in accordance with the legal requirements arising from the Law on Energy Regulator (Law no. 05/L-084), submits the Annual Report 2020 for review from the Assembly of the Republic of Kosovo. The Annual Report contains information on activities related to the scope of the Regulator, as well as the functioning of the energy sector, analysing the data of licensees, including the development of the energy market in Kosovo.

An integral part of this report is also the Financial Report of the Regulator's budget for 2020.

During 2020, as a result of the COVID 19 pandemic, ERO acted in line with the recommendations given by the health authorities. To adapt to such an environment, ERO has taken concrete measures to protect the staff including special measures on health, hygiene, sanitary, staffing restrictions, restrictions on meetings and travel, the organization of work from home and the required IT systems.

The ERO Board has used virtual electronic means of communication for various decision-making topics.

After more than a decade of a long process, on 14 December 2020, the Connection Agreement between KOSTT and transmission system operators (TSOs) from Continental Europe entered into force, marking the first day of KOSTT's operation as an ENTSO-E control area. Moreover, the 400 kV line between Kosovo and Albania built in 2016 was finally put into normal operation, contributing to larger cross-border exchanges, including the possible cross-border exchange of reserves.

Upon the commencement of operation as an independent Regulatory Area within Continental Europe, Kosovo is recognized as a trading area, where the balancing of the system will be the full responsibility of KOSTT, which means covering all deviations from the Kosovo system.

During 2020, despite the COVID 19 pandemic, the energy sector has had a resilience in terms of the activity of electricity generation, transmission and distribution, maintaining stable operating parameters.

This report presents the detailed data on the performance of Energy Sector for 2020.

The total production of electricity in 2020 was 6,301 GWh, of which 5,983 GWh are from power plants, while from HPPs and other RES are 318 GWh, and there is an increase of 10.2% compared to production in 2019.

The total demand for electricity in the system in 2020 was 6,167 GWh, which represents an increase of 2.7% compared to the demand in 2019. This demand is mainly met by domestic production, where power plants have the largest share, while the other share is covered by imports.

The total amount of electricity sold to final customers was 4,558.5 GWh, of which 2,777.7 GWh or 60.1% to household customers, while the rest 1,780.8 GWh or 39.9% to non-household customers. The billing of non-household customers also includes the billing of unregulated customers which in 2020 was 418.3 GWh.

For the category of household customers, the average energy price is 5.66 €cents/kWh, while for non-household customers the average energy price is 7.30 €cents/kWh.

Transmission network losses are at an acceptable level of 1.18% of the energy entered in transmission, and are approximately at the same level as transmission network losses in the region and Europe.

Technical losses in the distribution network are still quite high, and in 2020 were 12.56%, while unauthorized energy consumption (hereinafter referred to as commercial losses) accounted for 12.84% of distribution demand, of which unbilled energy in the four northern municipalities of Kosovo accounts for 6.8% (335 GWh).

The following table reflects the main data realized in 2020 compared to the balance sheet in 2020 and the realization in 2019, from which it can be seen that for balancing the supply-demand system there is a need for imports and exports.

Tab. 1.1 S Main data realized in 2020

	Unit	Production	Demand	Import	Export	Losses	
						Transmission	Distribution
Realization 2020	GWh	6 301	6 167	839	1 283	107	1 409
Balance 2020	GWh	6 211	5 627	693	650	110	1 382
Realization/Balance	%	101,45	109,59	121,10	197,42	97,58	101,99
Realization 2019	GWh	5 718	5 686	1 242	880	118	1 464
Report 2020/2019	%	110,20	108,45	67,57	145,82	90,96	96,26

Regarding the thermal energy sector, the situation remains largely unchanged. The cogeneration project in DH Termokos has given good results by increasing heating quality for customers connected to the network, while the cogeneration project in DH Gjakova is in the process of implementation.

- Thermal energy production in 2020, in DH Termokos was 247 GWh_{Th}, whereas in DH Gjakova 6.5 GWh_{Th};
- Thermal energy consumption in 2020, in DH Termokos was 220 GWh_{Th}, while in DH Gjakova 4.8 GWh_{Th};
- Thermal energy losses in 2020, in DH Termokos were 8.88% (only for the primary distribution network), while in DH Gjakova 20%.

There is no functional infrastructure and natural gas market in Kosovo, but energy laws and energy strategy provide for the development of natural gas infrastructure, through the connection with gas infrastructure projects in the region of Southeast Europe, through the TAP gas pipeline project (Trans-Adriatic-Pipeline) and the North Macedonia-Kosovo Gas Interconnection Project.

An important and priority factor in our work has been the transparency of the sector, therefore we have tried to create conditions for increased transparency and greater involvement of the public in regulatory processes. As part of this, on 5 July 2020, ERO launched the re-designed website: www.ero-ks.org

The purpose of the redesign was, in addition to greater transparency and adaptation to mobile devices, to provide information in an easier and more accessible way to customers and other stakeholders on energy sector regulatory activities. The new website also publishes the necessary information for operators interested in licensing their activities as well as for investors who are interested in investing in the energy sector.

There is still work to be done to address the issues of supporting the development of renewable generating sources. During this year, following the finalization of the projects according to the Authorization issued by ERO Board, and after the technical acceptance, three (3) projects have entered into commercial operation, with a total installed capacity of 4.86 MW. During this year, ERO has handled the requests/applications for generators for obtaining the status of prosumer for self-consumption, which after fulfilling the legal requirements in accordance with the Rule on Authorization and the Support Scheme, were allowed to continue with the construction of self-consumption generating capacities.

In order to continue the integration of markets between Kosovo and Albania, with the assistance of USAID, working groups already set up consisting of Ministries, Regulators and System Operators are continuing the work to review primary and secondary legislation to enable the merging of these markets as well as the steps to be taken for its functioning.

ERO is fully committed to an even closer cooperation with the Energy Community Secretariat in Vienna, as one of the main partners in drafting the primary and secondary legislation, the Ministry of Economy and Environment, the Competition Authority, and all other stakeholders of the energy sector in the country and beyond.

2 ENERGY REGULATORY OFFICE

Energy Regulatory Office (ERO) is an independent agency which is separated in legal and functional terms from any other natural or legal person. ERO duties and functions are defined in the Law 05/L-084 on Energy Regulator, which includes: the efficient, transparent and non-discriminatory establishment and functioning of the energy market; determining the terms and conditions as well as granting of licenses for carrying out activities in the field of energy; determining the terms and conditions and the granting of authorizations for construction of new capacities; market monitoring and the care to improve energy supply security; setting tariffs for energy activities in a reasonable manner and based on tariff methodology; monitoring and preventing the establishment of dominant position and uncompetitive practices by energy enterprises, as well as resolving complaints and disputes in the energy sector.

The Regulator is responsible for designing and implementing the regulatory framework for the energy sector in Kosovo, in order to achieve compliance with the obligations of SEE Treaty and alignment with the “*acquis communautaire*” on energy, ensure non-discriminatory access to all energy network users at prices reflecting real economic costs.

2.1 The Board of the Regulator

The Board of the Regulator consists of 5 members including the chairman, who are appointed as full-time employees by the Assembly of Kosovo with a term of five (5) years. The Board of the Regulator is a decision-making body for all matters under ERO’s jurisdiction and competence. The Board takes

decisions by majority vote and has the quorum needed to take a decision if at least three Board members are present, but there should be three (3) votes in favour in order to become a final decision. The Board states its stances regarding the issues it handles through decisions that are taken at open sessions announced in advance on ERO's official website.

During 2020, the Board of ERO has functioned with four (4) members, since the mandate of the Chairman of the Board of ERO expired in October 2017. According to the provisions of Article 25 of the Law on Energy Regulator no. 05/L-084, when the position of Chairman of the Board remains vacant, his/her duties will be performed by the oldest member of the Board, until the appointment of the new Chairman. The oldest member of the Board is considered the member with the longest experience in the capacity of Board Member.

On 14 December 2020, the mandate of two other members of ERO Board expired, leaving the Board of ERO non-functional. At the end of 2020 the Board of the Energy Regulatory Office consisted of the following members:

Izet Rushiti, Acting-Chairman of the Board

Selman Hoti, Member of the Board

During 2020, as a result of the COVID 19 pandemic, ERO acted in line with the recommendations given by the health authorities. To adapt to such an environment, ERO has taken concrete measures to protect the staff including special measures on health, hygiene, sanitary, staffing restrictions, restrictions on meetings and travel, the organization of work from home and the required IT systems.

The ERO Board has used virtual electronic means of communication for various decision-making topics.

For decision-making purposes, in line with the authority given under the legislation in force, the Board of ERO, pursuant to health measures has held regular meetings, in which the functioning of the energy system in Kosovo was discussed and respective decisions were taken, as well as approval of the necessary documents for the sector.

The Board of ERO, until December 2020 held a total of ten (10) public meetings, in which 116 decisions have been taken regarding:

- Market monitoring and energy sector activities;
- Liberalization of the energy market;
- Price regulation
- Licensing of energy activities in Kosovo;
- Authorization for construction of new generation capacities from renewable sources;
- Customer protection;
- Approval of rules, methodologies and other documents in energy sector, and
- Other issues under its responsibilities.

Most of the documents reviewed and approved were initially published for public discussion, as required by law, to include all parties involved in the decision-making process and are published on the official website of ERO.

The Board, for all the activities, was supported by: Managing Director, Administration Unit and five (5) departments as follows:

- Legal and Licensing Department (LLD)
- Energy Market Department (EMD)
- Tariffs and Pricing Department (TPD)
- Costumer Protection Department (CPD)
- Thermal Energy and Natural Gas Department (TENGS)

2.2 Organizational structure and human resources

The Regulator is organized in accordance with the Law on Energy Regulator (Chapter II of the Law) and the Regulator's Operations Manual. The Regulator's Board according to the responsibilities defined by law performs the following activities:

- adopts regulatory and operational policies of the Regulator;
- organizes and supervises the work of the Regulator;
- supervises the budget implementation and financial management of the Regulator and approves its reports and financial statements;
- organizes recruitment procedures and supervises the work of staff employed by the Regulator;
- approves the compensation levels and other employment conditions for the Regulator's employees;
- drafts and approves sub-legal acts required for the implementation of the Law on Energy Regulator.

The organizational structure of the Regulator is determined by the Regulator's Board based on the responsibilities and duties set by Law on Energy Regulator no. 05 / L-084. The basic structure is composed of the Managing Director, the Board's Assistance Officer, the Public Relations Officer, five Departments and the Administration Unit (AU), which are established in accordance with the Regulator's operational tasks.

2.2.1 Managing Director

The Managing Director coordinates the activities between the Board and professional and administrative staff; is responsible for implementing all decisions of the Regulator's Board, actively informs and advises the Board on developments in the energy sector, supports the Regulator's Board to ensure that all the Regulator's activities are carried out in accordance with the laws, regulations and policies of the Regulator and supervises the work of the Regulator's departments. The Managing

Director reports and responds directly to the Board and carries out its duties under the directions and instructions of the Board, in accordance with the Regulator's Operations Manual.

2.2.2 Departments of the Regulator

Departments are led by the heads of departments who organize, control, plan, collaborate, evaluate their staff and take responsibility for the activities and fulfil all the tasks assigned to the work of departments. The head of the department is responsible for delegating the daily work of the department staff.

The role of the staff members of departments is to carry out their duties, whenever required under legal requirements and through the heads of departments they propose to the Board. In some cases, staff members may be authorized by the Board to perform special duties.

Staff members should work in close collaboration with the head of the department and other professional staff. The staff member should also be able to attend the trainings available from the Regulator to improve their professional skills and knowledge.

Legal and Licensing Department (LLD)

Legal and Licensing Department is responsible for drafting the secondary legislation, evaluation of applications for licensing of energy enterprises, evaluation of applications for granting the authorizations for construction of new capacities. This department also supervises and monitors licensees' activities.

Energy Market Department (EMD)

Energy Market Department is responsible for market structure, monitoring the performance of market participants, evaluation and analysis of data in the energy sector. The Department also monitors competition and behaviour of market participants in an objective, transparent and non-discriminatory manner.

Tariffs and Pricing Department (TPD)

Tariffs and Pricing Department is responsible for evaluation of tariff applications of licensed enterprises; monitors the execution of operational and capital expenses through tariff reviews; undertakes all the measures to ensure that the tariffs are cost-reflective, reasonable, non-discriminatory, based on objective criteria and established in a transparent manner, taking into consideration the affordability and customer protection.

Customer Protection Department (CPD)

Customer Protection Department is responsible for reviewing and resolving complaints and disputes between customers and energy enterprises, system operators and energy enterprises as well as between two energy enterprises. In the course of exercising its duties and responsibilities, this Department cooperates with all institutions and organizations which legitimately represent the customers.

Thermal Energy and Natural Gas Department (TENGD)

Thermal Energy and Natural Gas Department is responsible for reviewing and implementing the strategies, performance standards and other operational practices that are related to these sectors. This Department carries out the monitoring of licensed enterprises through collection, analysis and evaluation of relevant data and information and also contributes to the development of reporting systems of district heating enterprises, focusing in technical-technological elements and integration of incentives and targets for efficiency. It also cooperates with other departments of the Regulator by providing support and technical expertise on issues related to thermal energy and natural gas.

Administration Unit (AU)

Administration Unit supports the functioning of the Regulator, administration of finances, organizes the efficient recruitment of the Regulator’s staff, coordinates trainings of the Regulator’s staff, supply and maintenance of office equipment and assists in arranging the office by making it comfortable for work for all the Regulator’s staff.

ERO staff is structured in organizational departments defined on the basis of specific operational and administrative activities.

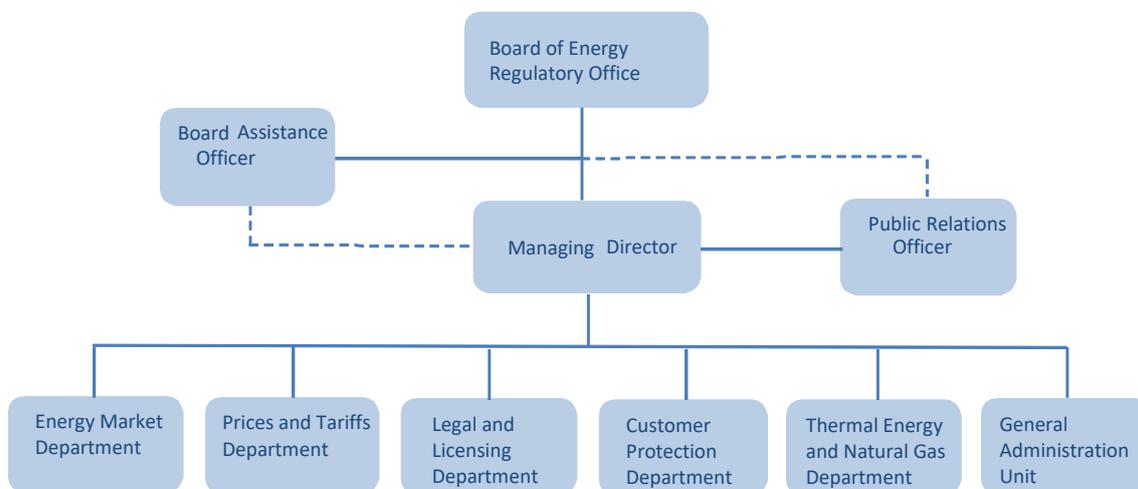


Fig. 2.1 Organizational scheme of the Regulator

It should be noted that until December 2020 the number of employees in ERO was 31, but, given that on 01.10.2020 one of the TENG staff requested the termination of employment with ERO, on 12.12.2020 the Head of the Market Department reached retirement age, and on 15.12.2020 the mandate of two members of the Board expired, then the total number of employees as of 31 December 2020 is 27 employees, where, two are members of Board and 25 are staff members employed within professional departments and administration unit. The educational structure consists of ten engineers, nine economists, five lawyers and two employees with other university education and one employee with secondary education.

A short description of the organizational structure with the jobs in 2020 is given in the table below.

Tab. 2.1 Organizational structure

Job positions	Planned positions	Employed	Vacancies
ERO Board	5	4	1
Managing Director	1	1	0
Public Relations Officer	1	1	0
Board Assistance Officer	1	1	0
Administration Unit			
Head of Administration Unit			
Chief Financial Officer			
Procurement Manager			
Administration Officer			
Data Manager Officer	9	9	0
Database Development Expert			
English Translator			
Receptionist			
Driver/Maintenance			
Legal and Licensing Department (DLL)			
Head of Legal and Licensing Department			
Lega Affairs and Monitoring Expert	3	3	0
License Monitoring Analyst			
Tariffs and Pricing Department (TPD)			
Head of Tariffs and Pricing Department			
Economic Expert for Regulatory Affairs and Tariffs	4	4	0
Tariffs and Prices Analyst			
Tariff Structure Analyst			
Energy Market Department (EMD)			
Head of Energy Market Department			
Power Supply and Market Structure Analyst	4	4	0
Power Systems Analyst			
Market Monitoring Analyst			
Thermal Energy and Natural Gas Department (TENGD)			
Head of Thermal Energy and Natural Gas Department			
Thermal Energy Analyst	2	2	0
Customer Protection Department (CPD)			
Head of Customer Protection Department			
Customer Protection Officer	3	2	0
Standards Performance Analyst			1
Total	33	31	2

The Regulator's staff is a team of experts with proven performance in the areas of responsibilities they cover.

2.3 Funding of the Regulator

The Energy Regulatory Office (ERO) is entitled the status of an "independent agency". The Constitution of the Republic of Kosovo stipulates that independent agencies are institutions established by the Assembly based on the relevant laws governing their establishment, functioning and competencies. Independent agencies exercise their functions independently of any other body or authority in the Republic of Kosovo. This means that ERO should have full independence in budget planning and spending, i.e. its dedicated revenues, guaranteed by the Constitution and applicable law.

The issue of financial independence is mainly regulated by the EU Directives, which provide that Member States must ensure that regulatory authorities or independent agencies are able to make autonomous decisions independently of any political body, including the ways through which they exercise their mandates, the employees to be recruited, etc. This means that the Energy Regulatory Office should enjoy financial independence, which is enabled through the collection of own source revenues and the implementation of applicable legislation.

The current legislation clearly stipulates that ERO's revenues are "dedicated revenues", and, in this regard, ERO has the right to collect "dedicated revenues" from certain sources, which in the case of ERO include licensing fees. This is also provided for in the Law on Public Financial Management and Accountability, which stipulates that "dedicated revenue" is that revenue derived from a certain source of revenue, and these agencies, only in cases where that revenue is insufficient, may require additional budget allocations from the budget of the Republic of Kosovo, in accordance with the provisions of the Law on Public Financial Management and Accountability.

Based on Article 24 of the Law on Energy Regulator, ERO collects revenues from:

- Initial and annual licensing tax;
- Taxes from applications for issuance and modification of licenses;
- Taxes for the issuance of Certificates of Origin;
- Taxes for review of applications for authorization for construction of new generation capacities.

3 ACTIVITIES OF THE ENERGY REGULATORY OFFICE

3.1 Licensing of Energy Activities

All energy activities in Kosovo can only be carried out if the enterprises are equipped with a license issued by the Energy Regulatory Office. All kinds of activities for which enterprises must be licensed are described in the legislation in force, namely in Article 28 of the Law on Energy Regulator. According to this Article (paragraph 2) and also Article 3 (paragraph 1) of the Rule on Licensing of Energy Activities in Kosovo (Rule ERO/No.07/2017, dated on 31.03.2017), so far the Regulator has issued licenses for the following activities: generation of electricity, generation of thermal energy; co-generation of electricity and thermal energy; transmission of electricity including transmission system operation; distribution of electricity including the operation of the distribution system; distribution of thermal energy; supply of electricity and thermal energy, including transit, import or export of electricity; wholesale electricity supply (trading); as well as the operation of the electricity market.

The legislation in force has allowed the performance of some energy activities even without having a license issued by the Energy Regulatory Office, as it is estimated that these activities do not have a very large impact on the power system of Kosovo. Thus, in accordance with Article 29 of the Law on Energy Regulator, the activities that do not need a license are:

- electricity generation at the power location with a capacity not exceeding 5 MW;
- generation of thermal energy produced by heating plants for self-consumption or with a capacity not exceeding 1 MW;
- generation of electricity for self-consumption, where the generation plant or electricity customers are not connected to the transmission or distribution system.

Since its establishment until now, the Regulator has licensed about seventy (70) enterprises for various energy activities, of which about forty (40) of them still have active licenses (many of them have had their licenses extended, after fulfilling the requirements set by the Regulator).

During this year the focus of licensing applications has been the activity of electricity wholesale supply (trade), unlike 2019 where for the first time since the establishment of the Regulator, no company had applied for licensing of the electricity wholesale supply (trade) activity.

Following, we will present in more detail the licensing of all activities of energy enterprises during 2020, which are licensed, are under the licensing process, license extension, etc.

3.1.1 Licensing of electricity generation activity

Each generator constructed or under construction for power generation over 5 MW, in order to operate, must apply for a license to the Regulator and meet all requirements, in accordance with Chapter VII of the Law on Energy Regulator and Rule on Licensing of Energy Activities in Kosovo. As a result, the Regulator continuously accepts applications for licensing of electricity generation activity (from lignite, wind, water, solar, etc.).

Since during 2019 the Regulator had issued four (4) temporary licenses for generation of electricity from hydropower plants for these two enterprises: 1. Hidroenergji LLC (HPP Lepenci 3 with an

installed capacity of 9.98 MW), and 2. Kelkos Energy LLC (Deçani hydropower plant with a capacity of 8.06 MW, Belaje hydropower plant with a capacity of 9.8 MW and Lumbardhi II hydropower plant with a capacity of 6.2 MW). During this year three (3) of them (HPP Lepenci 3, HPP Deçani, and HPP Belaje) have met the criteria and have managed to obtain a license for a period of forty (40) years, in accordance with applicable law, while HPP Lumbardhi II, due to the lack of an Environmental Permit, has not been licensed for a longer period of time and still remains "in the licensing process".

The process of construction of these generators started almost a decade ago, so, before these generators were licensed for operation, the Regulator had issued authorizations for construction of these hydropower plants, after they had met all the criteria required by the Rule on authorization procedure for construction of new capacities.

Regarding the extension of licenses for electricity generation, this year the license was extended to Kosovo Energy Corporation JSC, which was licensed for the first time by the Regulator in 2006 to 2011 for the activity of electricity generation from lignite. Since 2011, due to the absence of the Environmental Permit, the Regulator has extended the license to KEK every year, the same has happened in 2020 too, therefore the Regulator's Board extended the license for the period from 04.10.2020 until 04.10.2021. With respect to the extension of licenses, the duration of each license may be extended for a period of time not exceeding the relevant time period of the current license, meaning that the licensee manages to meet all the criteria and obligations of the license and has submitted a written request for extension of the current license.

During 2020, the licensing application of Contour Global Kosovo L.L.C. which had applied on June 20, 2019 for licensing of electricity generation activity from lignite (coal) with a capacity of 500MW remains unreviewed. The Regulator has evaluated the documents submitted by this company and since the application was not complete, it has requested from representatives of ContourGlobal Kosovo L.L.C. to submit additional documents or supplemented documents. Representatives of ContourGlobal Kosovo L.L.C. have not provided additional information and documents since October 2019, so the documents submitted so far are not sufficient for the Regulator, under licensing procedures, to issue a license for electricity generation.

The enterprises that have been issued a license for electricity generation, have had their licenses extended, or are under the licensing process for electricity generation activity, are listed in the table below.

Tab. 3.1 Enterprises that have been licensed, have had their license extended or are under the licensing process for electricity generation activity

No.	Name of enterprise	Description of licensed activity	License number	Address, headquarters of the licensee	Validity of license
1	"Hydroenergji" LLC. (HPP Lepenci 3)	Production of electricity (from water)	ZRRE/Li_63/18	St. Dëshmorët e Kombit, N.N. Ferizaj, Republic of Kosovo	05.06.2019 - 04.06.2020 Temporary license 03.07.2020 - 02.07.2059 Issuance of license
2	"KelKos Energy" LLC. (HPP Deçani)	Production of electricity (from water)	ZRRE/Li_49/16	St. Demë Ali Pozhari, No. 41, 51000 Deçan, Republic of Kosovo	14.10.2019 - 13.10.2020 Temporary license 12.11.2020 - 11.11.2059 Issuance of license
3	"KelKos Energy" LLC (HPP Belaje)	Production of electricity (from water)	ZRRE/Li_50/16	St. Demë Ali Pozhari, No. 41, 51000 Deçan, Republic of Kosovo	14.10.2019 - 13.10.2020 Temporary license 12.11.2020 - 11.11.2059 Issuance of license
4	"KelKos Energy" LLC. (HPP Lumbardhi II)	Production of electricity (from water)	ZRRE/Li_64/18	St. Demë Ali Pozhari, No. 41, 51000 Deçan, Republic of Kosovo	14.10.2019 - 13.10.2020 Temporary license 14.10.2019 - in the licensing process
5	Kosovo Energy Corporation JSC (TPP Kosova A)	Production of electricity (from lignite)	ZRRE/Li_05/17_A	St. "Nëna Terezë" No 36, 10000 Pristina, Republic of Kosovo	04.10.2020-04.10.2021 extension of license
6	"ContourGlobal Kosovo" L.L.C.	Production of electricity (from lignite)	ZRRE/Li_66/19	St. Anton Çeta, 5A, 10000 - Pristina, Republic of Kosovo	20.06.2019 - in licensing process

3.1.2 Licensing of electricity supply activity

During this year, no license was issued to any company for the activity of electricity supply. The only company that has applied on 20 December 2020 for an electricity supply license in Kosovo is Društvo Elektrosever D.O.O., whose documents are under the evaluation process by the Regulator.

Despite the fact that the Regulator has so far licensed eight (8) companies for the electricity supply activity (1. HEP Energjia KS LLC, 2. GSA ENERGJI LLC, 3. FUTURE ENERGY TRADING AND EXCHANGE DYNAMICS LLC, 4. JAHA COMPANY LLC, 5. SharrCem LLC, 6. Enerco LLC, 7. Kosovo Energy Corporation JSC and 8. KESCO) none of them, except KESCO, has entered the market to supply customers with electricity. So, the entire supply of customers with electricity in the country during 2020 has been carried out by KESCO, same as in the previous years.

The table below presents the data of the company that has applied and is in the process of licensing for electricity supply.

Tab. 3.2 The company that applied during 2020 and is "in the licensing process" for electricity supply activity

No.	Name of enterprise	Description of licensed activity	License number	Address, headquarters of the licensee	Validity of license
1	Društvo Elektrosever D.O.O.	Electricity supply	ZRRE/Li_70/20	Filipa Visnjica bb, Mitrovicë e Veriut, Republika e Kosovës	28.12.2020-në proces të licencimit

In case the company meets the criteria for licensing then the duration of the supply license is determined depending on the financial situation of the applicant with a maximum duration of twenty-five (25) years. The Regulator shall decide on each license application within sixty (60) calendar days following the submission of the completed application.

Representatives of Društvo Elektrosever D.O.O. during the application for Electricity Supply to the Regulator, on the same day (28 December 2020) submitted an application for licensing of electricity distribution activity in Kosovo. The application was not processed for further processing, as Article 27 paragraph 1 of the Law on Electricity stipulates as follows: *“The Distribution System Operator is selected by the Government of the Republic of Kosovo based on a competitive procedure. After the selection, the operator is subject to the licensing procedure by the Regulator and can operate only after being issued a license”*.

3.1.3 Licensing of electricity wholesale supply (trade) activity

Compared to 2019 when the Regulator did not receive any application for licensing of this activity, during this year there have been applications and requests for information for licensing of this activity at a much higher level than in previous years.

Until 2020, electricity trading was performed by enterprises licensed by the Energy Regulator, but electricity trading in Kosovo could also be carried out by other enterprises which were licensed in any of the contracting parties of the Energy Community. Whereas from the beginning of the operation of KOSTT as a regulatory area within the Kosovo-Albania Regulatory Block and the conclusion of KOSTT Connection Agreement with ENTSO-E (2020), all enterprises which have traded energy with or without licenses were informed that, from now on, the activity of wholesale supply (trading) of electricity can be performed in Kosovo only by those enterprises that are issued or will be issued a license from the Energy Regulatory Office.

The table below shows the data of the enterprises that have been issued a license for wholesale supply (trade) of electricity, those that are in the process of license extension, as well as those that are in the process of licensing.

Tab. 3.3 The enterprises that have been licensed, have had their license extended or are under the licensing process for the electricity wholesale supply (trade) activity during 2020

No.	Name of enterprise	Description of licensed activity	License number	Address, headquarters of the licensee	Validity of license
1	BALKAN ENERGY LLC.	Wholesale supply (trading) of electricity	ZRRE/Li_67/20	St. Isa Boletini, 54/2, Gjilan, Republic of Kosovo	23.06.2020-22.06.2025 Issuance of license
2	BINDI INTEGRATED SERVICES LLC.	Wholesale supply (trading) of electricity	ZRRE/Li_68/20	St. "17 shkurti" 5th Floor Model Sllovenia, Fushë Kosovë, Republic of Kosovo	30.09.2020-29.09.2025 Issuance of license
3	"GSA ENERGJI" LLC.	Wholesale supply (trading) of electricity	ZRRE/Li_51/17	St. Xheladin Hana, Obj.35/15, Pristina, Republic of Kosovo	19.05.2016-18.05.2021 Issuance of license 12.11.2020 - in the process for license
4	ENERGY TRADING GROUP PRISHTINA LLC.	Wholesale supply (trading) of electricity	ZRRE/Li_69/20	St. Sylejman Vokshi, Nr 50/3, Pristina, Republic of Kosovo	26.11.2020- in licensing process
5	"ENERGY FINANCING TEAM" LLC	Wholesale supply (trading) of electricity	ZRRE/Li_71/20	St. Rexhep Krasniqi, Apartment 9/1 Mati 1, Pristinaë, Republic of Kosovo	01.12.2020- in licensing process

3.2 Renewable Energy Sources (RES)

The applicable Law on Energy No. 05/L-081 sets up the policies related to RES, aiming to promote the sustainable and economical use of RES domestic potentials, in order to meet the demand for energy, increase the security of supply and environmental protection which is an integral part of the Energy Strategy of the Republic of Kosovo.

In order to implement RES policies, the respective Ministry has, according to the legislation in force, determined by a special sub-legal act the RES targets for energy, in line with the requirements of the relevant European Union Directive for RES.

The Law on Energy Regulator no. 05/L-084 stipulates that the construction of new generation capacities (RES), new systems for transmission and distribution of natural gas, including interconnectors, as well as direct power lines and direct pipelines for transmission of natural gas will be done in accordance with the authorization procedures according to this law, which will be undertaken by the Energy Regulatory Office, in accordance with objective, transparent and non-discriminatory criteria.

In order to meet the legal obligations for reaching the obligatory RES target by 2020, the Ministry of Economic Development has issued the Administrative Instruction no. 01/2013 and no. 05/2017 which has set the annual and long term targets of energy from RES.

The Administrative Instruction has determined that the mandatory target for Renewable Energy Sources by 2020 is 25% of the final gross energy consumption, as defined in Article 4 of the Decision of the Ministerial Council of the Energy Community No. D/2012/04 / MC-EnC.

It is worth mentioning that Kosovo is a signatory party to the Treaty on Establishment of the Energy Community, which was signed on 25 October 2005, ratified and entered into force on 1 July 2006 and started to be implemented on 1 July 2007. Based on this, Kosovo has assumed legal obligations to fulfill all obligations related to the energy sector, which also includes the obligation to reach the RES targets by 2020.

Annex I of this Administrative Instruction 05/2017 has determined the electricity capacities from RES (MW), where the set target level for renewable energy sources, admitted to the Support Scheme is as in the following table:

Tab. 3.4 Set targets for RES capacities

Electricity capacities from RES					
Primary source of energy	2016	2017	2018	2019	2020
Photovoltaic	6	7	8	9	30
Wind	1	61	115	129	150
Small HPPs	40	57	181	187	240
Biomass	6	8	10	12	20

In order to reach RES targets for generation of electricity from RES, as set forth in the above-mentioned Guideline, and in accordance with the legal mandate provided by the applicable legislation on energy, during 2020, ERO has received and reviewed applications for obtaining the authorization, in line with the Rule on authorization procedure for construction of new generation capacities based on RES and Rule on Support Scheme from Renewable Energy Sources.

ERO Board, in order to support the promotion of renewable energy investments, has issued Decision V-810-2016 which sets the Feed-in-Tariff for generation of electricity produced by RES, where: electricity generated from water (hydro power plant <10 MW) has the price of 67.47 €/MWh, electricity generated from wind has the price of 85.0 €/MWh, electricity generated from solid biomass has the price of 71.3 €/MWh and electricity generated by solar/photovoltaic panels for targets up to 10 MW, according to the previous instruction was 136.4 € / MWh.

Also, in order to meet RES targets, ERO has also guaranteed the lifespan of the Power Purchase Agreement, which is concluded between the investor and KOSTT/MO, where the electricity generated from photovoltaic panels and the energy generated from wind turbines will have a duration of 12 years, while for other sources (hydropower and solid biomass) it will have a duration of 10 years, with applicable prices (Feed-In Tariff) and admitted to the Support Scheme. Whereas for self-consumption generators, it had guaranteed the contract (PPA) with a duration of twelve (12) years, which is concluded between the supplier and the prosumer.

3.3 Authorization for construction of new capacities

ERO, during this year has continued to implement the authorization procedure, review of applications for issuance of authorization for construction of new generation capacities based on Renewable Energy Sources (RES) for companies that applied for obtaining an authorization.

ERO, within the framework of fulfilling its obligations under the legislation in force, has issued Final Authorizations for construction of new generation capacities, whereby each applicant for obtaining the authorization has been subjected to a regularity analysis and correctness of the legal, administrative, technical, financial documentation and environmental issues, as well as obtaining relevant permits for water use in hydropower cases, the right on the use of land, technical solutions of the connection and environmental consent issued by relevant institutions in accordance with the activity that entities have requested to obtain the Final authorization for allowing the construction of new generation capacities from RES.

During 2020, ERO from various legal entities has received 3 applications for obtaining an authorization for construction of new generation capacities from RES. In addition to this, 43 applications for obtaining the Authorization for self-consumption generators were received and reviewed.

3.3.1 Applications that are under the review process by the Regulator

The Regulator, during this year, has received applications for obtaining the authorization for construction of new generation capacities, which are in the phase of completing their applications. Below is a list of applications that are under review process (see table 2.7)

Tab. 3.5 Companies that are under review process for obtaining the decision on preliminary authorization

No.	Legal entity	Facility	Location	Installed capacity	Application date
1	EUROKOS DD LLC	Hydro power plant	DRINI PSHP - RËVËR7IRII	250 MW	16 November 2020
2	NIN TECHNOLOGY LLC	Biomass	Ferizaj	5.2 MW	10 December 2020
3	HIDROENERGJI LLC	Hydro power plant	HC LEPENCI 1	9.98 MW	09 December 2020

ERO has evaluated the applications for issuance of authorizations for construction of new generation capacities and following the completion, shall issue the preliminary authorizations to the above-mentioned applicants.

3.3.2 Projects under the construction process according to Final Authorization

In relation to the projects which are being built according to the dynamic implementation plan and according to the deadlines set by Rule no. 11/2017 on Authorization Procedure, there are four (4) projects from Wind Turbines where 103.4 MW with a total of twenty-seven (27) turbines, in the Wind Park in Bajgora of Mitrovica Municipality, and the project Budakova Wind Park with a capacity of 11 MW with a total of three (3) turbines are being built in Budakovo, Suhareka. Also in the process of construction are some small projects from hydropower plants where according to the dynamics of works, they are expected to be realized during 2021, as well as the project from Biomass with a capacity of 1.2 MW of electricity and 15 MW of thermal energy which will be realized by PE Heating of the City - Gjakova, a project funded by the European Commission.

3.3.3 Entry of RES generators into operation

During this year, following the finalization of the projects, in line with the Authorization by the ERO Board, as well as following the technical admission, three (3) projects entered into commercial operation, with a total installed capacity of 4.86 MW.

The following table presents the legal entities that have entered into operation for generation of electricity from RES.

Tab. 3.6 The companies that have started operation

No.	Legal entity	Facility	Location	Installed capacity	Date of entry into operation
1	DILLI ENERGY LLC	Hydro power plant	HPP Bresana	0.31 MW	03 February 2020
2	HYDRO LINE LLC	Hydro power plant	HPP Albaniku II	3.55 MW	06 February 2020
3	EKO ENERGJI LLC	Hydro power plant	HPP Binqa	1 MW	25 February 2020



Fig. 3.1 Views from the premises of HPP Albaniku II, Mitrovica

3.4 Self-consumption generators

ERO, during this year, has also handled requests/applications of generators for obtaining the status of prosumer for self-consumption. Following the fulfilment of legal requirements, in accordance with the Rule on Authorization and the Support Scheme, they were allowed to proceed with the construction of generation capacities for own-consumption.

The following table presents the number of decisions issued by ERO Board, for self-consumption generators during 2020.

Tab. 3.7 Authorizations for self-consumption

Decisions for self-consumption	No. of issued decisions
Solar	33
Total	33

The following table presents the legal entities that have been issued the decision for authorization for construction of self-consumption generators.

Tab. 3.8 Companies that have been issued the decision for construction of self-consumption generators

No.	Legal entity	Facility	Location	Installed capacity	Date of issuance of Decision
1	SAMIRI I - H&A LLC	Solar	Rahovec	8.4 kW	06 April 2020
2	GELI LLC	Solar	Gjakova	10 kW	23 June 2020
3	Municipality of Obiliq	Solar	Obiliq	16.32 kW	23 June 2020
4	Natural person	Solar	Prizren	10 kW	23 June 2020
5	BALLKAN PETROL LLC.	Solar	Ferizaj	83.3 kW	23 June 2020
6	N.T.LIRIDONI	Solar	Pejë	100kW	27 August 2020
7	GNTC GROUP JSC.	Solar	Ferizaj	100 kW	27 August 2020
8	D&Z LLC	Solar	Gjakovë	10.85 kW	27 August 2020
9	Natural person	Solar	Rahovec	10 kW	27 August 2020
10	Natural person	Solar	Malishevë	5 kW	27 August 2020
11	Natural person	Solar	Taslixhe/Prishtinë	12.5 kW	30 September 2020
12	Natural person	Solar	Taslixhe/Prishtinë	5 kW	30 September 2020
13	KAN LLC Facility KFC	Solar	Magj. Prishtinë -Ferizaj	100 kW	30 September 2020
14	Natural person	Solar	Sofali/Prishtinë	3 kW	30 September 2020
15	Natural person	Solar	Pejë	8 kW	30 September 2020
16	Natural person	Solar	Gjakovë	10 kW	30 September 2020
17	GREEN HOUSE LLC	Solar	Radavc/Pejë	21.84 kW	30 September 2020
18	Natural person	Solar	Hereq/Fushë Kosovë	8 kW	14 October 2020
19	Natural person	Solar	Jabllanicë e vogë/Pejë	15 kW	14 October 2020
20	Natural person	Solar	Prishtinë	8 kW	12 November 2020
21	N.P.T PLUS	Solar	Konjuh/Prishtinë	100 kW	12 November 2020
22	MAXX GROUP LLC.	Solar	Preoce/Graqanicë	15 kW	12 November 2020
23	SOLID GROUP LLC.	Solar	Laplje Selo/Graqanicë	15 kW	12 November 2020
24	SOLID GROUP LLC.	Solar	Laplje Selo/Graqanicë	5 kW	12 November 2020
25	SOLID GROUP LLC	Solar	Laplje Selo/Graqanicë	80 kW	12 November 2020
26	Natural person	Solar	Malishevë	5 kW	12 November 2020
27	Natural person	Solar	Deçan	5 kW	12 November 2020
28	KOSHI GROUP LLC.	Solar	Prizren	100 kW	10 December 2020
29	Natural person	Solar	Klinë	8 kW	10 December 2020
30	RREZE COMPANY LLC.	Solar	Skenderaj	75.53 kW	10 December 2020
31	Natural person	Solar	Rahovecë	5 kW	10 December 2020
32	Natural person	Solar	Prishtinë	5 kW	10 December 2020
33	N.T.SH. GENCI -AF	Solar	Fushë Kosovë	30 kW	10 December 2020
				Tot: 978.73	



Fig. 3.2 Views from the realization of a self-consumption generator

The above-mentioned projects are expected to be completed within the period specified in the dynamic project implementation plan in accordance with the technical criteria of connection.

ERO has also received 10 other requests with a total capacity of 420 kW from natural and legal persons, which are under review and according to the procedures in force, after completion will be allowed to construct new generation capacities from self-consumption generators.

3.5 Monitoring the construction of new generation capacities

The Regulator, during this year, has monitored the legal entities that have obtained a Final Authorization for construction of generation capacities, which are in different phases of construction.

ERO has monitored the works in the implementation of projects by the company SOWI KOSOVO L.L.C. for the projects Wind Park SELAC 1, SELAC 2 and SELAC 3, authorized by Decisions V-980-2018, V_981_2018 and V_982_2018, dated 13 June 2018, where according to the dynamic plan, twenty-seven (27) turbines for the production of electricity from wind are expected to be installed. Below you can find photos from the realization of the WIND PARK SELAC project, Municipality of Mitrovica.



Fig. 3.3 Views from the works in realization of the project WIND PARK SELAC 103.41 MW

In addition to this, ERO has monitored other projects that are being executed according to Decisions on Final Authorizations, which are in different phases of construction, according to legal deadlines set in respective decisions. Their monitoring has been carried out continuously depending on the requirements that have arisen during their implementation.

ERO will continue to monitor the construction of new generation capacities from Renewable Energy Sources, meanwhile respecting all the legal procedures and criteria established by the applicable legislation.

3.6 Feed-in Tariff for RES projects

The Board of ERO, in the last session for 2020, by decision V_1321_2020 has decided to terminate the application of the Support Scheme with Feed-in Tariffs to support the construction of new generation capacities for electricity generation from Renewable Energy Sources (RES).

ERO in line with the legal obligations and in cooperation with the institutions of the Republic of Kosovo, will take action for the development of projects from Renewable Energy Sources for the 2021-2030 targets through various forms of auctions, for the selection of beneficiaries from other forms through Premium tariffs or similar, in conformity with the best practices in favour of the public interest.

ERO has evaluated that it should follow the trends of general developments in the energy sector and adapted to the policies of significant transformation in the electricity market in the region and beyond. Undoubtedly, one of the most important transformations is the development of RES technologies, especially solar and wind, thus drastically reducing the cost of investments in this sector, as well as increasing the efficiency of the use of technologies in question.

ERO has concluded that supporting investments in renewable energy through Feed-in tariffs is no longer necessary compared to several years ago, taking into account developments in many European and regional countries, where Feed-in tariff, as a dominant measure is now excluded from support schemes, being replaced by new models which approximate energy prices from RES with those of the market.

ERO has assessed that the development of technology definitely has an impact on Kosovo's policies in terms of supporting RES, orienting them to an acceptable extent towards the energy market through auction schemes and allowing the market to determine what prices would be reasonable for the energy produced by RES.

ERO has also evaluated the conclusions of the 15th meeting of the Ministerial Council that have encouraged the Contracting Parties, including the Republic of Kosovo, to work closely with the Energy Community Secretariat (ECS) and the European Bank for Reconstruction and Development (EBRD) in designing and implementing a competitive, efficient and transparent process for providing support schemes for renewable energy sources.

ERO has also considered the commencement of implementation of the EBRD-funded RES Auction Development Project, which has the task of drafting procedures for implementation of the RES Auction and which is expected to begin to be implemented during 2021.

3.6.1 Monitoring of thermal energy enterprises

Given that monitoring is among the regular activities that are continuously carried out by ERO, in 2020 it monitored the realizations and performances of the 2019/2020 season of DH Termokos and DH Gjakova. Monitoring of realizations included:

- Energy balance: production and supply of thermal energy as well as network losses;
- Realization of revenues (billing and collection) and operational costs;
- Realization of capital costs- concretely allowed new investments;
- New connections and customer supply contracts;
- Unauthorized use and disconnections;
- Customer complaints and requests and their addressing by the respective enterprises;

From the analysis of data and information collected during the monitoring, the monitoring reports of the realizations in the 2019/2020 season for DH Termokos and DH Gjakova have been drafted, which have been reviewed by the ERO Board. These reports describe the evaluations and findings for the implementation of each monitoring component and also provide relevant recommendations.

3.7 Energy Balances

Based on the legislation in force, the Regulator is responsible for determining the methodology, rules and procedures for preparation and approval of energy balances, as well as the obligations of system operators for preparation of these balances.

In June 2020, the Regulator's Board by Decision V_1262_2020 amended the Rule and methodology on preparation of energy balances, as a result of changes in customer supply and imports/exports, upon the commencement of market liberalization. This Rule defines the principles, procedures and methodology for compiling annual and long-term balances of electricity and thermal energy.

According to the Law on Energy (no. 05 / L-081) ERO is responsible for approving energy balances, which include annual and long-term (10-year) balances of electricity, thermal energy and natural gas. In this sense, the legal responsibility of ERO extends to defining the Methodology, rules and procedures for preparation and approval of energy balances. The law also defines the obligations of system operators for preparation of these balances.

3.7.1 Annual Balance of Electricity and Thermal Energy

The annual balances should be approved by ERO separately and then summarized in general for electricity, thermal energy and natural gas, as well as published on the website.

Based on the legal requirements and the Rule and methodology on preparation of energy balances, in the session held on 10 December 2020, the Regulator's Board approved:

- Annual Balance of Electricity 2020 - V_1336_2020
- Annual Balances of Thermal Energy of DH Termokos and DH Gjakova 2020 – V_1330_2020

Given that Kosovo does not have an organized natural gas system, the relevant natural gas balances are not prepared.

These documents were prepared in accordance with Law no. 05/L-081 on Energy (Article 8), and the Methodology on Preparation of Energy Balances, and contain:

- a) annual and long term planning for generation of electricity and thermal energy;
- b) forecast of electricity import and export;
- c) consumption and losses in transmission and distribution networks of electricity/thermal energy.

The purpose of these documents is to inform all interested parties about the forecast of energy demand for 2021. The documents are published on the Regulator's website www.ero-ks.org.

3.7.2 Long-term energy balances

In accordance with legal provisions, Long-term energy balances include the forecast for a period of ten (10) years and are developed by the transmission system operator (for electricity) and by thermal energy distribution systems operators (for thermal energy) and after receiving the opinion from the Ministry, they are submitted to the Regulator for approval. Long-term balance updates are approved every two (2) years.

Electricity long-term balance

The Regulator's Board, in September 2020, by decision V-1296_2020 has approved the request of KOSTT for Derogation of the Long-term balance of electricity and the Generation Adequacy Plan. This request has come due to the fact that the Energy Strategy has not been reviewed, which comprises one of the basic documents required for compilation of these documents.

Thermal energy long-term balance

In the session held on 10 December 2020, ERO Board approved:

- Thermal energy long-term balance of DH Termokos for the period 2021-2030- V_1331_2020 and
- Thermal energy long-term balance of DH Gjakova for the period 2021-2020- V_1329_2020;

As defined by the Methodology and Rule on preparation of energy balances, long-term thermal energy balances have included the analysis of historical data from the previous 3 years, as well as planning for the next 10 years, forecast of demand, grid expansion, vision and plans for the development of the thermal energy system.

3.8 Addressing energy supply in the north of Kosovo

3.8.1 Previous development and the context

Since 1999, the Serbian electricity company (Elektroprivreda Srbije (EPS)), through its subsidiary Elektrokosmet, has been operating illegally in the electricity distribution network in the four northern municipalities of Kosovo (Leposavic, Zvecan, Zubin Potok and part of the city of Mitrovica, located on

the northern bank of the Ibar River). Based on the Law on Energy Regulator and the regulatory framework, Elektrokosmet does not own a license or any other legal mandate to carry out these activities. Indeed, according to the regulatory framework, the only licensed distribution operator for the entire territory of Kosovo is the Kosovo Electricity Distribution Services Company (KEDS). KEDS also owns the electricity distribution network in northern Kosovo; however, its staff is unable to manage the assets or collect revenues for the use of them.

In an effort to solve the situation, the Energy Agreement signed between Kosovo and Serbia in September 2013 ("Energy Agreement" 2013), as well as the "EU Facilitator Conclusions on the implementation of the Energy Agreement" of 2013, through EU envisage the formation and activation of a new electricity supply company, registered in Kosovo, which would buy and sell electricity to serve customers in the four northern municipalities of the country. For this purpose, the company "ElektroSever" (owned by EPS) was registered in Kosovo in 2019, and the Government of Kosovo has subsequently indicated that "Elektrosever" is free to proceed with obtaining a license for electricity supply from ERO. There was also an expectation that ElektroSever would also provide distribution services within its area, including billing, collection, maintenance and connection of new customers. However, a contractual agreement, through the transfer of responsibility for the distribution services between KEDS and ElektroSever, could provide a practical solution to this issue.

Prior to December 2017, energy supplied to the four northern municipalities of Kosovo was treated as "energy loss" by the Energy Regulatory Office (ERO) and the cost of energy was handled similarly to other grid losses included in customer tariffs. ERO has decided that this cost of losses, from 01 April 2017, upon the opening of the wholesale market, shall be covered through KOSTT tariffs. However, in November 2017, based on the substantive issue raised by the Ombudsman and confirmed by an interim court measure, ERO ordered the reduction of tariffs for KOSTT and explicitly instructed that the money received from Kosovo's electricity customers can not be used to purchase energy to cover the cost of losses in the four northern municipalities of the country. Consequently, from 02 December 2017 until today, the energy consumed in the four northern municipalities of the country has been withdrawn by the Kosovo Transmission System Operator (KOSTT) from the European interconnection network, creating a deviation, the cost of which is approximately 37 million euros so far. In this context, i.e. due to legal and financial impossibility, KOSTT has requested from the Government of Kosovo to allocate funds to cover the consumption of the northern part of Kosovo, until the issue of supply of the northern part of Kosovo is addressed regularly. This request has been approved by the Government of Kosovo and the Assembly of Kosovo through the Law on Budget and €10 million have been allocated for this purpose. Based on this, KOSTT has entered into an agreement with the Ministry of Economy and Environment for the receipt of the budget allocation in the amount of € 10 million from the Kosovo Budget in order to cover the consumption in the northern part of Kosovo for 2020.

The Ministry of Economy, Employment, Trade, Industry, Entrepreneurship and Strategic Investments, based on articles 10 and 11 of Law 06/L-133 on the organization and functioning of state administration and independent agencies, in accordance with article 8.1.4 and points 1 and 9 of Annex 7 of Regulation QRK 05/2020 on the areas of administrative responsibility of the Office of the Prime Minister and ministries has issued decision number ref. 01/14, dated 8 May 2020 on the establishment of the working group for preparation of the action plan for provision of electricity supply. In September 2020, the working group submitted to the Government the report on the final

action plan for normalization of electricity distribution and supply in the northern part of the Republic of Kosovo.

3.8.2 Current situation in relation to the licensing of Elektroserver

The agreement on energy concluded between Kosovo and Serbia in 2013, mediated by the European Union, as well as the conclusions of the EU in 2015, among others, determine the addressing of energy supply in the four northern municipalities of the country. This process provided for the creation of a new entity ("Elektrosever") registered as a business in Kosovo, which has been realized. "Elektrosever" in December 2020 applied to ERO for an electricity supply license in accordance with the legal and regulatory framework of Kosovo. ERO has confirmed the receipt of the application and is in the review process.

3.9 MARKET INTEGRATION

3.9.1 Connection Agreement between KOSTT-ENTSO-E

The Connection Agreement with ENTSO-E stems from an extensive chronology of events spanning the last ten years. The events culminated in a final Connection Agreement (CA), which was sent to ENTSO-E Regional Group for Continental Europe (RGCE) for approval on 4 February 2020. The Connection Agreement with ENTSO-E was approved on 20 April 2020. The process of the complaint of the Serbian party/EMS for review of the voting of CA was rejected by RGCE. The approval of the Connection Agreement triggers a number of technical verification processes between KOSTT and Swissgrid. The new KOSTT-ENTSO_E Connection Agreement was signed on 30 June 2020, while on 29 September 2020 the ENTSO-E Continental Europe Regional Group confirmed that KOSTT meets all the prerequisites to operate as an independent regulatory area.

After more than a decade of a long process, on 14 December 2020 the Connection Agreement between KOSTT and transmission system operators (TSOs) from Continental Europe entered into force, marking the first day of KOSTT's operation as an ENTSO-E control area. Kosovo met all technical and formal requirements to become an independent control area in ENTSO-E. At the same time in December 2020, a joint control block was established between the control zone of Albania and the control zone of Kosovo. Moreover, the 400 kV line between Kosovo and Albania built in 2016 was finally put into normal operation, contributing to larger cross-border exchanges, including the possible cross-border exchange of reserves. The energy systems of Kosovo and Albania are complementary thermal-hydro systems, where Kosovo does not have flexible and fast internal generating units to serve as a system reserve capacity, and Albania has many such units. Therefore, it is mutually beneficial - as an element of the merging of these two markets - to use the available cross-border transmission capacities for the exchange of reserve capacities of the energy system.

Upon the commencement of operation as an independent regulatory area within Continental Europe, Kosovo has been recognized as a trading area, where the system balancing will be the full responsibility of KOSTT, which means covering all deviations from the Kosovo system. KOSTT has started allocating cross-border capacities and managing the congestions, which means collecting revenues from cross-border trade. So, this agreement brings benefits but at the same time charges KOSTT with responsibility for the safe operation of the interconnection system.

3.9.2 The process for establishment of the joint electricity market Kosovo-Albania

The integration of the energy market in the Western Balkans region is a topic continuously discussed and handled from the Energy Community Secretariat and other energy sector participants in the region and beyond. Numerous studies have been undertaken to ensure market integration, but so far, there is no concrete plan for the integration of all Western Balkan markets into a single joint energy market. However, most countries in the region have already drafted their plans for partial market integration, aiming to create joint markets among a smaller number of participants, with the aim of further expanding such integration with emerging markets which are members of the region.

Kosovo has an advanced position towards the establishment of a joint market with Albania, which in fact would be the first concrete merging of two markets in the region.

The Kosovo-Albania joint market will improve the security of electricity supply for the two countries, taking into account the fact that both countries have complementary electricity generation systems.

In order to continue with the integration of markets between our countries, it is necessary to continue the harmonization of legislation and secondary regulatory acts in order to eliminate obstacles that may arise in this regard. In this context, with the assistance of USAID, working groups already set up composed of Ministries, Regulators and System Operators are working in this direction. Also, the operation of both systems, as a single control area according to the agreement signed at the end of 2019 between the two system operators, with the approval of both regulators, is an important step towards market integration and optimization of interconnection capacities. Working groups already set up between TSOs, Regulators and Electricity Exchange continue to work on reviewing primary and secondary legislation to enable the integration of these markets and the steps to be taken for its operation.

3.9.3 Further liberalization of electricity market

In 2016, the new laws in the energy sector were adopted: Law on Energy, Law on Electricity, Law on Energy Regulator. These laws are partially in line with the third package, i.e. Directive No. 2009/72/EC, regarding the common rules for the internal electricity market and Regulation No. 714/2009/EC, on the criteria for access to the network for cross-border electricity services, as well as the requirements of the Energy Community Treaty.

Following the changes in primary legislation, ERO has undertaken all the required steps to harmonize also the secondary legislation for the energy sector, enabling the functioning of the energy market in accordance with the requirements of the Energy Community Treaty.

ERO has continuously taken actions to promote the development of a competitive wholesale and retail market, which enables customers to benefit from competitive prices, and in order to implement this has drafted and approved the Guideline on liberalization of electricity market in Kosovo. According to this guideline, it is planned that the price deregulation for final customers will be carried out gradually, where customers connected to the 220 kV and 110 kV voltage network will be the first to enter the deregulated market, who are already supplied at deregulated prices, other customers connected to the 35 kV voltage level, it is foreseen to be supplied with energy at deregulated prices starting from 31 March 2020, whereas the customers connected to the 10 kV voltage level are foreseen to be supplied at regulated prices until 31 March 2021. ERO during 2019 and early 2020 has

undertaken all regulatory and procedural actions to notify customers connected to the 35 kV voltage level (who do not meet the criteria to be supplied with universal service) that they will enter the deregulated market; has also held meetings with these customers to inform them on the electricity market liberalization process as well as other meetings with chambers of commerce. However, the circumstances created by the COVID 19 pandemic, and the requests of the Chambers of Commerce to postpone the market liberalization process have made it impossible for this process to be completed during 2020, as foreseen in the Guideline on Market Liberalization. This delay of the exit of customers connected to 35 kV to the deregulated market has taken place in coordination with the Energy Community Secretariat. It should be noted that this activity will continue with the fulfillment of criteria for exit of customers connected to the voltage level of 35kV and 10 kV to the market during 2021, and then continue further with customers connected to low voltage.

3.9.4 Approval of the Rule on Wholesale Energy Market Integrity and Transparency

Despite the fact that SEE countries are not yet members of ACER, these countries will soon be obliged to establish legal frameworks and mechanisms for implementation of REMIT. The Energy Community Secretariat has established a Working Group for implementation of REMIT, which will draft an appropriate implementation framework. According to the plan, it will develop a common legal framework for all SEE countries, including Kosovo. After establishing the criteria for implementation, REMIT undergoes a "test", which is planned to last for a period of 3 years. This is considered to be sufficient time for all countries to become aware of such an obligation, and after this period, the implementation of REMIT for the member countries of the Secretariat will be mandatory.

The REMIT Regulation, which is a transposition of Regulation No. 1227/2011 of the European Parliament and of the Council, emphasizes the increase of transparency and the preservation of the integrity of the wholesale electricity market both in the country and in the region. Increasing transparency and the monitoring of Regulators in this market, which is now opening step by step, will promote fair competition of all market participants and consequently will bring benefits to final energy customers.

In order to enable its transposition and implementation, work is underway in cooperation with the Vienna Energy Secretariat and the regulators of the region. The regulation also enables the protection of electricity market operators from possible unfair behaviour in other countries of the region, giving the opportunity to address the issues raised at the regional level and further monitoring by the regulators. The regulation in question, approved by the Board of ERO, will be applicable to Kosovo, under the Energy Treaty. The full implementation of the market monitoring regulation and REMIT will be a challenge not only for the Regulator, but for all participants in the electricity market in our country, during the establishment of the Electricity Exchange.

3.9.5 Approval of the Rule on Designation of the Nominated Electricity Market Operator (NEMO)

Despite the fact that the SEE countries are not members of ACER yet, these countries will be obliged to establish legal frameworks and mechanisms according to European directives. The Energy Community Secretariat has established a Working Group for implementation of REMIT, which has drafted a common legal framework for implementation for all SEE countries, including Kosovo.

Given that energy markets in general are emerging, as well as the interconnection of wholesale electricity prices between countries in the region, due to the increased cross-border trade between different countries, a mechanism is required in order to avoid abuses in these markets.

The demand and tendency for market liberalization as well as increasing liquidity in these markets, automatically increase the presence of a variety of products in energy markets, which are followed by contract-based transactions. Such a development in the energy market certainly brings benefits, but in such situation, the possibility of market abuses increases.

Also, the obligations arising from the Third Package on Energy oblige the contracting parties to ensure competitive and non-discriminatory market agreements, but does not set standards to ensure the integrity of these markets. In the European Union this gap is filled with the introduction of the REMIT rule and therefore it is essential for the good functioning of the Energy Community market that this gap be filled in the Contracting Parties to avoid the possibilities that could create potential abuse in the market both in EU countries and the contracting parties due to interconnected markets.

REMIT Regulation, which is a transposition of Regulation No. 1227/2011 of the European Parliament and of the Council, emphasizes the increase of transparency and the preservation of the integrity of the wholesale electricity market both in the country and in the region. The implementation of REMIT will be carried out in several steps. The first step will be the establishment of the REMIT regime, while the next step will be the intermediate step, which means the actions before the request for trade data starts and the reporting of basic data, in which case the market participants engaged in reportable products or are owners of basic information must be registered at ERO. The second step involves requesting trade data and reporting basic data, as well as the market monitoring regime.

3.9.6 Clean Energy Package

The Clean Energy Package has already been approved with the EU Directives, which will soon be mandatory for our country, according to the provisions and obligations of the Energy Community Treaty. The fourth energy package, the so-called Clean Energy Package, focuses on customer rights, by placing them not only as genuine customers, but by making them an integral part of the market.

The clean energy package places it at the epicentre of the energy system and envisages a renewed market model which increases incentives for flexibility and demand management in order to improve the ability of power grids to absorb an increased level of penetration of different types of renewable energy sources. Given that the package in question will be implemented very soon in our country as well, ERO should carefully study the implications of the Package in market design and adjust its future policies in accordance with these implications.

3.9.7 Evaluation of competition in electricity market

The Regulator, according to the given mandate, through the Law on Electricity no. 05/L-085, Article 26: "The Regulator, in consultation with the Kosovo Competition Authority and the State Aid Office, at least every two (2) years must conduct investigations into the functioning of the electricity market", has completed the report on evaluation of competition in the wholesale and retail electricity market for 2018 and 2019.

This report presents the evaluation of ERO whether there is:

- a) effective competition in the wholesale and retail electricity market, and
- b) market characteristics that may impair effective competition.

From the findings of this report, ERO concludes that the concentration in the wholesale and retail energy market is very high, which means that the energy market in the country for the analysed period is facing a lack of competition.

Based on the results of this report, ERO has given the following recommendations regarding the actions to be taken in relation to the competition in the electricity market in Kosovo:

- ERO in cooperation with KCA has to start an investigation which is related to respecting the procedure for energy trading, by market participants, regarding electricity trading;
- KCA has to launch an investigation regarding the impact of the BSA on the electricity market in the country, given that this agreement may have an impact on competition;
- Intensify the exit of customers from the supply at regulated tariffs, according to the Guideline on Liberalization of the Electricity Market;
- To continue with the creation of the electricity Price Comparison Tool which is considered a reliable source to compare the prices that electricity suppliers will offer.

3.10 Activities of the Regulator in the area of price regulation

3.10.1 Tariff review

The determination of tariffs and prices remains one of the fundamental challenges for Regulators in general. In the modern economy, the cost of energy is an integral part of almost all products placed in the market and, as such, plays an important role in the cost of production of these products that directly affects their selling price. Thus, every change of energy price consequently reflects the prices of other products.

The Energy Regulatory Office (ERO), based on the Law on Energy Regulator and secondary legislation, within the given competencies is the sole authority responsible for setting tariffs for regulated activities in the energy sector. ERO, through an open and transparent process, determines revenues and tariffs, which is the responsibility of regulators, required by domestic laws and the Directive 2009/72/ EC regarding the common rules for the internal electricity market.

ERO during 2018 carried out the periodic review that is valid for the period 1 April 2018 until 31 March 2023. During this process the Maximum Allowed Revenues (MAR) for the following licensees are determined: Transmission System Operator-Market Operator (TSO/MO) -KOSTT), Distribution System Operator (DSO-KEDS). Based on the revenues set during the periodic review, ERO has performed regular revenue adjustments, and tariffs for regulated electricity services in March 2020. It also updated the Maximum Allowed Revenues for 2020 for the Universal Service Supplier (USS-KESCO).

In accordance with the applicable rules, ERO has initiated the regular annual adjustments process of the Maximum Allowed Revenues and tariffs, for regulated activities. In the framework of this process, ERO has notified all stakeholders, giving them the opportunity to participate in this process.

The licensees submitted their applications regarding the maximum allowed revenues that they forecast to realize during the relevant tariff year 2020. ERO, after evaluating these applications, prepared and published consultation papers in order to receive comments from stakeholders. These reports present a detailed analysis regarding the evaluation of maximum allowed revenues for the licensees.

During the public consultation process, ERO has received comments from licensees as well as other stakeholders. Following the analysis and review of comments received from licensees and other stakeholders, ERO prepared the final assessment. In this report, ERO provided a response to all the comments from stakeholders.

The tariff review process is presented in the figure below:



Fig. 3.4 Electricity tariffs and revenues review process

The review of applications for regulated tariffs and revenues in the electricity sector has included: wholesale energy purchasing activities from local generators, electricity imports, electricity transmission activity, electricity distribution activity and universal service of supply (USS). In this tariff review, ERO has analysed the data realized for 2019 and adjusted them to the data of the relevant tariff year 2020.

The entire review process has gone through public consultation papers (meetings and publication of documents) as follows:

- The Regulator in December 2020 initiated the tariff review for 2020;
- Consultation Paper- Annual Adjustments of Maximum Allowed Revenues for KOSTT, published in February 2020;
- Consultation Paper - Annual Adjustments of Maximum Allowed Revenues for KEDS, published in February 2020;
- Consultation Paper - Annual Adjustments of Maximum Allowed Revenues of the Universal Service Supplier (USS/ KESCO), published in February 2020;
- Final Report on Maximum Allowed Revenues of the TSO/MO - Response to Comments, published in March 2020;

- Final Report on Maximum Allowed Revenues of the DSO - Response to Comments, published in March 2020;
- Final Report on Maximum Allowed Revenues of the Universal Service Supplier - Response to Comments, published in March 2020.

3.10.2 Energy purchases in the wholesale market

Kosovo as a signatory of the Energy Community Treaty has obligations for implementing the EU Third Legislation Package and has been implementing it. ERO, based on the Guideline on market liberalization and market design, is developing the competitive market at wholesale and retail level. Market opening enables the increase of competition in the wholesale and retail market. This provides more competitive prices to customers.

Electricity purchases at the wholesale market include purchases of energy from KEK, renewable energy generators connected to the transmission network, RES in the distribution network, as well as purchases of energy carried out at energy markets.

Generation Prices for Public Generators (KEK JSC) are deregulated from 1 April 2017, but this energy will be offered in the wholesale energy market, with a priority for the Universal Service Supplier. Following the determination of the required amounts for supply, in order to meet the demands of customers entitled to universal service, the allocation of other amounts and costs for energy purchase in the wholesale market is also carried out. Wholesale energy purchases which are transferred to final customers shall be provided in a transparent, competitive and efficient manner. The basic principles for energy trading are defined in the Energy Trading Procedure which is mandatory for trading parties.

In addition to the purchase of energy for the supply of final customers, the trading of energy to cover the losses and ancillary services by the Transmission System Operator and the Distribution System Operator is also carried out at the wholesale market.

Production must be balanced with the demand for electricity in real time, to enable the safe operation of the power system. Kosovo power system is designed so that electricity production depends mainly on power plants, but the energy produced by local generation is not enough to cover the energy demand at peak time and there are also surpluses during the minimum demand. Therefore, in order to manage the power system efficiently, there is a need for imports (during peak time) and exports (during minimum demand) that are realized in the wholesale market.

The sources of energy in the wholesale market from which the energy demand in the country is covered are: energy production by KEK, hydropower plants, solar power plants, wind turbines and energy purchases from imports. Energy and financial data of the wholesale energy market for 2020 are summarized in the following table:

Tab. 3.9 Energy purchases for USS (allowed)

Energy Purchase Costs - 2020	GWh	€/MWh	mil€
Amounts supplied by KEK	3,495.8	29.5	103,126
Ujmani and other generators at TSO level	200.5	36.2	7,263
Generators at DSO level	258.6	36.8	9,515
Import	156.4	57.0	8,913
Total supplied amounts			128,817
Retail margin [3.00 %]		3%	3,865
Total energy purchase costs	4,111.3	32.3	132,681
RES Fund costs -ve			17,781
Total energy purchase costs from RES			150,462

From the data presented in the table above it is noticed that the average price for the purchase of energy in the wholesale market for USS is 32.3 €/MWh without including the costs of the RES fund.

The costs of the renewable energy fund are covered by the suppliers in proportion to their share in the electricity market and this cost is allocated through the suppliers to all customers. The financing of the Renewable Energy Fund is enabled through the Renewable Energy Tariff, applied at the transmission level for all electricity suppliers in Kosovo.

Tariffs for the production of energy from RES are higher than the reference prices of the wholesale market, in order to encourage the development of RES projects, as well as to meet the obligations of Kosovo set by the European Commission regarding electricity generation from RES.

3.10.3 Electricity tariffs and revenues for regulated customers

The Regulator determines the regulated tariffs for customers who are entitled the supply under universal service criteria. The criteria on which costumers are entitled this right, are set out in the Law on Electricity, according to which: "The right to universal service is entitled to all household and non-household customers with an annual circulation of less than ten 10 million Euros, or no more than fifty (50) employees".

The regulated tariffs set by ERO for the relevant tariff year 2020 enable the covering of electricity service costs for all regulated customers. Tariffs are designed so that there are no seasonal differences and are block-free. Customers who are billed with regulated tariffs are customers connected to voltage levels 35kV, 10kV and 0.4kV, while customers connected to voltage level 220kV and those to 110kV are supplied at unregulated prices (market prices).

It should be mentioned that the right of supply at market prices, respectively the right to choose the supplier, is entitled to all customers. So far, the Regulator has licensed a total of 7 suppliers from which customers can purchase their energy at unregulated prices, but it should be emphasized that only KESCO is active.

The structure of retail electricity tariffs for universal service customers (regulated tariffs) is designed to cover the determined revenues in the amount of 268.99 million euros.

The structure of tariffs for regulated customers is presented in the following table:

Tab. 3.10 The structure of regulated tariffs for final customers for 2020

Tariff Group	Voltage level of supply	Tariff Element	Unit	Time-of-day	Approved 2020
1	35kV	Fixed customer tariff	€/customer/month		11.19
		Engaged power	€/kW/month		5.85
		Active Energy (P), of which	€/kWh	High tariff	4.92
			€/kWh	Low tariff	3.16
Reactive energy (Q)	€/kVArh		0.67		
2	10kV	Fixed customer tariff	€/customer/month		4.62
		Engaged power	€/kW		5.04
		Active energy (P), of which	€/kWh	High tariff	5.73
			€/kWh	Low tariff	3.69
Reactive energy (Q)	€/kVArh		0.67		
3	0.4 kV Category I (reactive energy Customers)	Fixed customer tariff	€/customer/month		2.57
		Engaged power	€/kW		2.97
		Active energy (P), of which	€/kWh	High tariff	6.69
			€/kWh	Low tariff	4.96
Reactive energy (Q)	€/kVArh		0.67		
4	0.4kV Category II	Fixed customer tariff	€/customer/month		2.97
		Active energy (P), of which	€/kWh	Single tariff	8.83
		Active energy (P), of which	€/kWh	High tariff	10.71
			€/kWh	Low tariff	5.30
5	0.4kV 2 rate meter (household)	Fixed customer tariff	€/customer/month		1.74
		Active Energy (P), of which	€/kWh	High tariff	6.75
			€/kWh	Low tariff	2.89
6	0.4kV 1 - rate meter (household)	Fixed customer tariff	€/customer/month		1.74
		Active Energy (P), of which	€/kWh		5.32
7	0.4kV (household unmetered)	Evaluated consumption:			
		Fixed customer tariff	€/customer/month		1.74
		Active energy (P), of which	€/kWh	Average tariff	6.75
8	Public lighting	Fixed customer tariff	€/customer/month		3.21
		Active energy (P), of which	€/kWh	Single tariff	9.24

High tariff (day) is applied from 07:00 - 22:00 during the period 1 October until 31 March
High tariff (day) is applied from 08:00 - 23:00 during the period 1 April until 30 September
The customer is charged with reactive energy above the allowed one which corresponds with $\cos(\phi) < 0.95$

The current tariff structure aims at efficient use of electricity consumption; this is made possible through daily tariff differences (day - night).

Prior to designing the tariffs, the elements of service costs for each activity of the energy sector should be known, such as wholesale costs, transmission costs, distribution costs and retail costs. Each cost element of these activities is described as follows.

3.10.4 Revenues and tariffs for transmission use of system

During 2020, ERO has carried out the regular annual adjustment process, where the revenues of the TSO/MO have been adjusted, taking into consideration: efficiency factor, cost indexation for the inflation rate applied to operational expenditures, repairs & maintenance. Adjustments to the costs for the purchase of losses, return and depreciation costs resulting from investments planned under the development plan and other reasonable costs for the operation of the transmission system have also been applied.

ERO applies the “Incentive-based regulation” which is based on the principle that tariffs for natural monopolies (network tariffs) should be set in a way that imitates competition, as every company operating in a competitive environment is expected to improve their operational efficiency.

Development and Investment Plans approved by ERO present the development plans of the Kosovo transmission network for the next 5 and 10 years. These plans present the projects that are required for reliable and safe operation of the transmission system, in order to achieve security of supply, to support the energy market and competition and to support the integration of renewable sources.

In order to enable the security of electricity supply, support the increase of load, integration of renewable sources, increase the quality of supply, ERO during the periodic review for the regulatory period 2018-2022 has allowed capital investments of about 60 million euros for the TSO/MO.

From the allowed value for the 5-year tariff period, the realization of 9.8 million euros was planned for 2020, while KOSTT has reported that it has realized only 3.48 million euros or the rate of realization of capital investments is only 36%. KOSTT's justification is that the capital projects have been postponed for the following years as a result of the known financial problems for the supply of the northern part of Kosovo, the situation created by COVID 19 pandemic, the lack of KOSTT's Board of Directors in non-approval of the budget. It is a well-known practice applied by Regulators to make a medium-term forecast of investment planning because this will enable the medium term predictability of enterprise revenues on the one hand and on the other hand, the Regulator will be able to make a profiling of costs, respectively tariffs so that there are no significant fluctuations over the years.

With the aim of providing security of supply, liberalization and integration of electricity markets, integration of new generating capacities, reduction of losses and improvement of other technical parameters of the network, the revenues required for the operation of transmission network were allowed.

The following table presents the Maximum Allowed Revenues approved by ERO Board for the relevant tariff year 1 April 2019 - 31 March 2020 for the TSO/MO.

Tab. 3.11 Maximum Allowed Revenues for TSO/MO

TSO/MO MAR - 2020	mil€
Operational expenses	7.28
Depreciation	11.36
Allowed return	10.34
Allowed losses	5.16
RES Fund costs	17.78
Costs of ancillary services	2.73
Unregulated tariff revenues	-0.06
Revenues from ITC	-0.40
Adjustments	-1.26
Remaining revenues from KEK	-3.33
KREV Revenues Correction	-3.72
Final MAR	45.88

The Maximum Allowed Revenues for KOSTT will be collected through tariffs approved by ERO based on the Methodology on determination of tariffs for the transmission system, system operation, and market operation. So, KOSTT has two licenses issued by ERO: Transmission System Operator through which it manages and operates the high voltage electricity transmission system and Market Operator which is responsible for the organization and administration of electricity trading (sale-purchase) and conducting transactions between producers, suppliers and other customers.

The following table presents the structure of tariffs for the use of transmission system and market operator that is applied from 1 April 2020, from the application of which the approved revenues are expected to be realized.

Tab. 3.12 The structure of TSO/MO tariffs for 2020

Tariff group	Tariff element	Unit	Tariff
Transmission connected generation	System Operator Tariff	€/MWh	1014
	Market Operator Tariff	€/MWh	0.029
Distribution connected generation	System Operator Tariff	€/MWh	0.190
	Market Operator Tariff	€/MWh	0.029
Distribution Operator	System Operator Tariff	€/MWh	0.856
	Market Operator Tariff	€/MWh	0.025
Supply	TUOS Tariff 400/220 kV	€/kW/vit	7.543
	TUOS Tariff 110 kV	€/kW/vit	15.53
	System Operator Tariff	€/MWh	0.856
	Market Operator Tariff	€/MWh	0.025
	RES Fund Tariff	€/MWh	3.802

3.10.5 Revenues and tariffs for distribution use of system

In 2020, ERO has reviewed the Maximum Allowed Revenues and tariffs of the Distribution System Operator. The process of regular annual adjustments to the DSO is similar to that of the TSO/MO.

ERO through a transparent process which includes consultation with all stakeholders has reviewed their comments and requests, and then has determined the Maximum Allowed Revenues for the DSO for 2020.

In order to enable the security of electricity supply, support the increased load, integration of renewable sources, expansion and strengthening of the network, increase of supply quality, ERO during the periodic review for the regulatory period 2018-2022 has allowed capital investments of about 131 million euros for DSO. From the allowed value for the 5-year tariff period 28.8 million euros were planned to be realized in 2020, while DSO has reported that it has realized only 22.2 million euros or the realization rate of capital investments is only 77%. The justification of the DSO for not realizing the capital investments for 2020 is that the DSO faces problems in the field during the implementation of projects which is an obstacle for the full completion of projects. According to the DSO, these problems often cause that some projects started in a respective year may not be able to be completed according to the initial plans, but instead are transferred in the following years. Also the impact of the COVID-19 pandemic on the process of implementation of investment projects for 2020 has caused the postponement of the planned target for completion of projects.

Investment projects for 2020 in the DSO include investments in the medium and low voltage network, investments in SCADA, smart meters, etc. Through investment projects the DSO aims to achieve key objectives such as reducing technical and commercial losses, reliable and better energy supply and increasing existing capacity, integrating RES and modernizing the network.

The table below presents the Maximum Allowed Revenues approved by the Board of ERO for the relevant tariff year 1 April 2020- 31 March 2021 for the DSO.

Tab. 3.13 DSO Maximum Allowed Revenues for the period 1 April 2020-31 March 2021

DSO MAR - 2020	mil€
Operational expenses	26.08
Depreciation	15.40
Allowed return	15.12
Obligations for SO and MO	0.92
Allowed losses	46.88
Unregulated revenues	-3.50
Adjustments	-1.50
Licensing tax	0.15
Revenues Correction Factor KREV	-4.14
Final MAR	95.40

Following the determination of Maximum Allowed Revenues, the tariffs should be determined so that the approved revenues can be collected.

The table below presents the tariff structure for the use of the Distribution System for 2020.

Tab. 3.14 The structure of DSO tariffs for 2020

Tariffs of customers connected at DSO		
Voltage level	Unit	Tariff
35 kV	€/kWh	1.12
10 kV	€/kWh	1.46
0.4 kV	€/kWh	2.42

3.10.6 Overall electricity supply costs

Justifiable costs that have been used to determine regulated tariffs for final customers include: power purchase costs, pass-through costs (transmission and distribution network costs), supplier costs (retail costs) of the Universal Service Supplier. The revenues of the universal service supplier enable it to cover the costs of each activity of the supply chain. So the supplier collects from the final customers the total costs of electricity supply, which he then allocates to each party depending on the service costs.

The details of these costs for 2020 are presented in the following table:

Tab. 3.15 Justifiable costs used for determination of revenues for the Universal Service Supplier

MAR of Universal Service Supplier - 2020	mil€
Operational expenses	4.59
Depreciation	0.11
Pass-through costs	
TSO costs	21.16
DSO costs	94.49
RES Fund	15.78
Working capital (WCLCt)	1.54
Energy Purchase Costs	132.68
Licensing Tax	0.03
Adjustments 2018	-12.15
Bad debt (BDTA)	10.76
Final MAR	268.99

3.10.7 Thermal energy tariffs

In line with the primary legislation - Articles 47 and 48 of the Law on Energy Regulator, the Energy Regulatory Office (ERO) is responsible for determining the tariff methodology and approving tariffs in the regulated energy sector.

Within its legal competencies and obligations, the Energy Regulatory Office has issued the Thermal Energy Pricing Rule. The rule sets out the procedures for submitting, reviewing the tariff application and approving the tariffs, as well as the Methodology for calculating the maximum allowed revenues and tariffs.

Schematically, the Tariff Methodology is presented as follows:

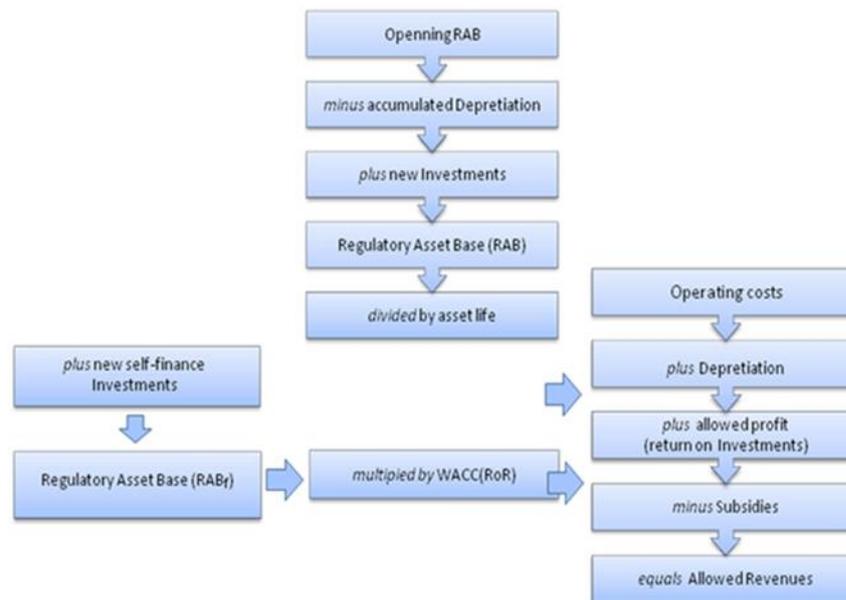


Fig. 3.5 The scheme for calculation of allowed revenues

From the schematic presentation it can be seen that the costs that the enterprise has to cover consist of operating costs, depreciation which represents the possibility for the enterprise to replace its assets, the cost of network losses and return to the Regulated Asset Base (RAB).

The process for determination of tariffs and their approval for 2020/2021 season is carried out in two steps:

1. Determination of Maximum Allowed Revenues, based on: i) the information and data provided in the tariff application; ii) information submitted during the regulatory reporting of realizations in the last season 2019/2020; and iii) the co-ordination between current and projected realizations, which is based on the difference between the planned and actual revenues of the previous heating season.
2. Calculation of tariffs based on Maximum Allowed Revenues and Tariff Structure.

For determination of Allowed Revenues of DH Termokos J.S.C for the 2020/2021 season, in line with Thermal Energy Pricing Rule, the Regulator has undertaken the following steps:

- 1) Evaluation and Determination of Allowed Operational Costs;
- 2) Evaluation and Determination of Depreciation;
- 3) Determination of Allowed Return on RAB (allowed profit for the company), which includes:
 - a) determination of RAB –evaluation and approval of company’s assets, verification and approval of planned investments and working capital; and
 - b) Calculation of Allowed Rate of Return (RoR)/ WACC;
- 4) Evaluation and Determination of the allowed cost of network losses.

ERO has engaged the available expertise to make a more realistic assessment of the information provided, submitted by Termokos. A comprehensive analysis and evaluation of the presented information was carried out, which has been followed by the comparison of the respective data from the previous seasons, in order to make the accurate determination (forecast) of the allowed revenues for the 2020/2021 season.

Within the tariff review for DH Termokos, the Regulator has drafted the Regulatory Reports for determination of Maximum Allowed Revenues as well as for determination of thermal energy tariffs for the 2020/2021 season.

Following the review of relevant documents of the tariff review, in the session held on 14 October 2020, the Board of ERO approved the Maximum Allowed Revenues (MAR) for DH Termokos for the 2020/2021 season, in the amount of 6,960,802 euros. Tariffs reflected by MAR of DH Termokos for the heating season 2020/2021, have remained at the same level as those of last season.

The issued decisions:

- V_1297_2020 - on approval of Maximum Allowed Revenues (MAR) for DH Termokos JSC, to be recovered through thermal energy (heating) tariffs for final customers, for 2020/2021 season;
- V_1298_2020 - on approval of thermal energy tariffs for final customers of DH Termokos JSC, for the heating season 2020/2021;

Regarding DH Gjakova, it should be noted that ERO received a request from DH Gjakova for exemption from the tariff application for the 2020/2021 season, where the main reasons have been the delays in the implementation of the new Biomass Heating project, as well as the poor technical condition of thermal energy production facilities from heavy fuel oil and the unstable financial situation that has made it impossible to provide sufficient quantities of fuel – heavy fuel oil.

In this regard, ERO has undertaken a comprehensive assessment of the progress of the development of the New Heating plant project and also of the financial and energy performance of DH Gjakova, which has included the realizations of previous seasons. Based on regular monitoring, as well as field visits and meetings with the management of DH Gjakova, the following summarized assessments were given:

- The deadlines foreseen in the initial project implementation plan have been exceeded approximately two months due to operational and logistical obstacles created as a result of the COVID-19 pandemic.
- The revised implementation plan envisages that the testing phase of thermal power plants will start at the end of December, over 2 months after the official commencement of the heating season. In fact, this affects the shortening of the heating season and the planning period and presents difficulties especially in forecasting the production and supply of customers with thermal energy and the corresponding costs associated with production and supply; moreover, when, due to the technical-technological nature, there can be no certainty in the duration and results of the testing phase.
- Referring to the field monitoring and the dynamics of the development of construction and installation works, it cannot be confirmed with precision the beginning of the

testing phase as foreseen in the updated implementation plan; moreover, when some construction positions (such as additional pipelines of the thermal energy network and the connection line to the electricity network) are conditioned by the atmospheric conditions in the winter season.

- Thermal energy production plants from the heavy fuel oil in the old heating plant are technically in poor condition and do not provide stability of thermal energy production and have a very low efficiency. Also, the current financial situation and the high price of fuel – heavy fuel oil, condition a limited supply of heavy fuel oil and insufficient production of thermal energy.

The assessments described above on the progress of the realization of the new heating plant project and the co-generation unit, state that at present it is very difficult to make any real planning (forecast) and accurate enough to undertake a proper tariff review, which would result in a correct determination of the Allowed Revenues and tariffs of DH Gjakova for the 2020/2021 season. Consequently, the Board of ERO in the session dated on 12 November 2020, following the review of the request of DH Gjakova and the evaluation from the relevant professional staff of ERO, decided that thermal energy tariffs of DH Gjakova for the 2020/2021 season shall remain the same as those of the previous season until the next tariff review.

- V_1315_2020 - on approval of thermal energy tariffs for final customers of DH Gjakova JSC for the 2020/2021 heating season.

The structure and levels of thermal energy tariffs for DH Termokos and DH Gjakova are presented below.

Tab. 3.16 Structure of thermal energy tariffs for 2020

Thermal Energy Tariffs - Season 2020/2021					
Metered tariff components	Unit	DH Termokos		DH Gjakova	
Monthly Tariff for Thermal Capacity (fixed component)	[€/kW/month]	0,78		0,91	
Tariff for supply/cons. of thermal energy (variable component)	[€/MWh]	36,25		58,76	
Unmetered tariff components	Unit	Household customers	Com& ins customers	Household customers	Com& Ins customers
Monthly tariff for thermal capacity (fixed component)	[€/m ² per month]	0,11	0,14	0,09	0,12
Tariff for supply/cons. of thermal energy (variable component)	[€/m ² per month]	0,65	0,81	0,88	1,27
Total tariff for unmetered customers	[€/m ² per month]	0,76	0,95	0,97	1,39

3.11 Activities of the Regulator in the area of customer protection

In line with Article 17 of the Law on Energy Regulator, the Regulator is responsible for resolving complaints and disputes between customers and energy enterprises, system operators and energy enterprises, as well as between two energy enterprises. In addition to other competencies given by

the Law on Energy Regulator, ERO is responsible for ensuring the proper application of the legislation on protection of customers in the energy sector in Kosovo.

According to the provisions of the Rule on resolution of complaints and disputes in the energy sector, all customers have the right to file complaints related to the services provided by the supplier or system operator, and these complaints should be addressed first to the supplier or system operator, as the first instance body, which reviews the complaint and issues a response within the legal deadline. After receiving the answer, the customer can turn to the Regulator for further review of his complaint.

The Regulator during 2020 has registered 61 official complaints of customers who have used their right against responses issued by the Supplier, has returned 72 complaints for review to the Supplier and Distribution System Operator, as well as 54 customer complaints related to examining the accuracy of the metering. During 2020, the number of complaints registered at the Regulator is about 22.95% lower than the number of complaints registered during 2019, which is due to the pandemic situation. In addition to registered and resolved customer complaints, the Regulator has also provided support in providing information, explanations, verbal consultations, e-mail, and by telephone to all energy customers.

The number of received complaints, divided by customer categories is presented in the table below.

Tab. 3.17 Customer complaints by categories 2020

Customer complaints By categories	Number	Share [%]
Household customers	49	80.33
Commercial customers	12	19.67
Industrial customers	0	0.00
Total	61	100.00

The figure below shows the number of customer complaints according to their nature.

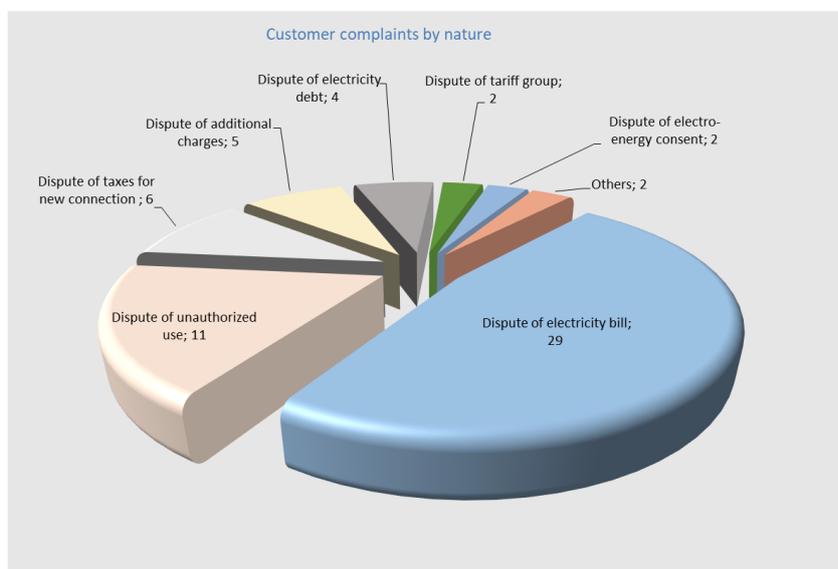


Fig. 3.6 Number of customer complaints by nature

The following is an explanation of the nature of customer complaints filed for 2020:

- **Dispute of electricity bills**, relates to customer complaints in cases of incorrect or irregular readings, which is considered as giving an inaccurate overview of the actual state of electricity consumption.
- **Dispute of unauthorized use of electricity**, relates to complaints of customers who have been charged by the energy company with invoices for unauthorized use of electricity (return of losses). ERO based on the Law on Electricity and the legal provisions of the Rule on resolution of complaints and disputes is incompetent in relation to such cases, and has instructed customers to address their complaints to the Basic Court in Prishtina, Department of Administrative Affairs.
- **Dispute of new connections**, relates to customer complaints who were denied the right for a new connection by the Distribution System Operator. In such cases of complaints, in order to implement a new connection, customers were obliged by the company to initially pay the debts in the old code that existed before.
- **Dispute of additional charges**, relates to customer complaints to whom the electricity company has billed additional charges to the regular billing. These complaints result from non-registration of electricity consumption, as a result of the defect of any metering system.
- **Dispute of electricity debt**, relates to customer complaints for issues caused by inaccurate definition of the electricity debt not collected by the supplier in cases of property transactions and for usurped property.
- **Dispute of the tariff group**, has to do with customer complaints for change of tariff group, where customers request to change the tariff group for various reasons.
- **Dispute of Energy Approval** is related to the complaints of the applicants for connection to the electricity network, and that they are mainly related to any point of the technical criteria given by the DSO in the Electricity Consent.

During 2020, the Regulator has solved 220 customer complaints, including complaints that have been returned for reconsideration to the supplier and Distribution System Operator as well as requests of customers for review of the accuracy of metering. From the overall number of resolved complaints, 171 of them were decided in favour of customers or expressed in percentage 77.73%, while 49 customer complaints or 22.27% were rejected as ungrounded. All complaints reviewed by the operators, which were proceeded to the Regulator, were once again reviewed by the Regulator in order to establish the complete resolution of the complaints according to the customers' requests and the respective customers were informed. In all reconsidered cases, the customers agreed with the provided resolutions.



Fig. 3.7 Resolved complaints, 2020

The number of customer complaints, registered and resolved by the Regulator, by years, is presented in the figure below.



Fig. 3.8 Registered and resolved customer complaints 2011-2020

3.11.1 Decisions of the Regulator's Board in the area of customer protection

Based on the Rule on Resolution of Complaints and Disputes in Energy Sector, costumers and licensees are entitled to file a complaint against the decision of the Customer Protection Department (CPD) as a first instance to the Regulator's Board as a second instance.

During 2020, costumers submitted 7 complaints to the Regulator's Board, against CPD decisions. Of the 7 registered complaints, the Regulator's Board reviewed all of them and rejected these complaints as ungrounded.

The supplier KESCO, during 2020, submitted 19 complaints to the Regulator's Board against CPD decisions. Of the 19 registered complaints, the Board reviewed all of them and rejected these complaints as ungrounded.

Also during 2020, the Regulator's Board reviewed 6 recommendations issued by the Customer Protection Department regarding complaints of commercial and industrial customers, whereby the Board approved all these recommendations.

3.11.2 Other activities in the area of customer protection

In addition to the registered complaints, the Regulator's staff during this reporting year has also carried out 1,389 meetings and 847 telephone conversations with parties including electronic communications, who have addressed the office for various contractual issues between the costumers and licensees. The Regulator's staff during the communication with costumers has informed and instructed them about the rules, procedures and their rights and obligations regarding electricity supply.

During 2020, the Regulator also received 13 customer complaints by mail. Despite the fact that it was necessary to address the licensees or the courts regarding these complaints, the customers insisted on addressing the Regulator in resolving them. The nature of these complaints was mainly for unauthorized use of electricity, as well as damage compensation. The regulator in all these cases responded in writing to the customers by instructing them about further procedures regarding their complaints.

The Regulator, during 2020 same as in the previous years, had close cooperation with the Department of Customer Protection within the Ministry of Trade and Industry. During this reporting year, it has received some customer complaints from this institution. These complaints were received and reviewed by the Regulator in accordance with the legal provisions.

During 2020, a number of Regulator's decisions were appealed by dissatisfied parties to the Basic Court in Pristina - Department for Administrative Affairs to assess the legality of administrative decisions. During 2020, the Regulator based on the decisions of the Basic Court in Pristina has prepared 19 responses to the claims against the claimants KEK, KEDS, KESCO and costumers regarding the decisions of the Regulator's Board. Also, during this reporting year the Regulator has been engaged in 2 court hearings in the Basic Court in Pristina as a defendant party. It is worth mentioning that during the previous years as well as the reporting year, the number of court proceedings that the Regulator has followed has increased significantly and is demanding high engagement.

It is important to note that, so far, no decision of ERO related to customer complaints in administrative procedure has been returned for review due to legal non-compliance by the administrative body; all these charges against decisions of ERO were rejected as ungrounded and the challenged decisions remained in force.

4 COOPERATION WITH OTHER PARTIES AND TRANSPARENCY

ERO has shown full transparency in exercising its functions by holding Board meetings open to the public and publishing all decisions. Through press releases, announcements, preparation of the bulletin and other publications on the website and on Facebook, the general public was informed in a timely manner about all activities and events of ERO.

Following the efforts for higher transparency and involvement of the public in the regulatory processes, on 5 July 2020, ERO launched the redesigned website: www.ero-ks.org

The purpose of the redesign was, in addition to greater transparency and adaptation to mobile devices, to provide information in an easier and more accessible manner to customers and other interested parties in the regulatory activities of the energy sector. The new website also publishes the necessary information for operators interested in licensing their activities as well as for investors who are interested in investing in the energy sector.

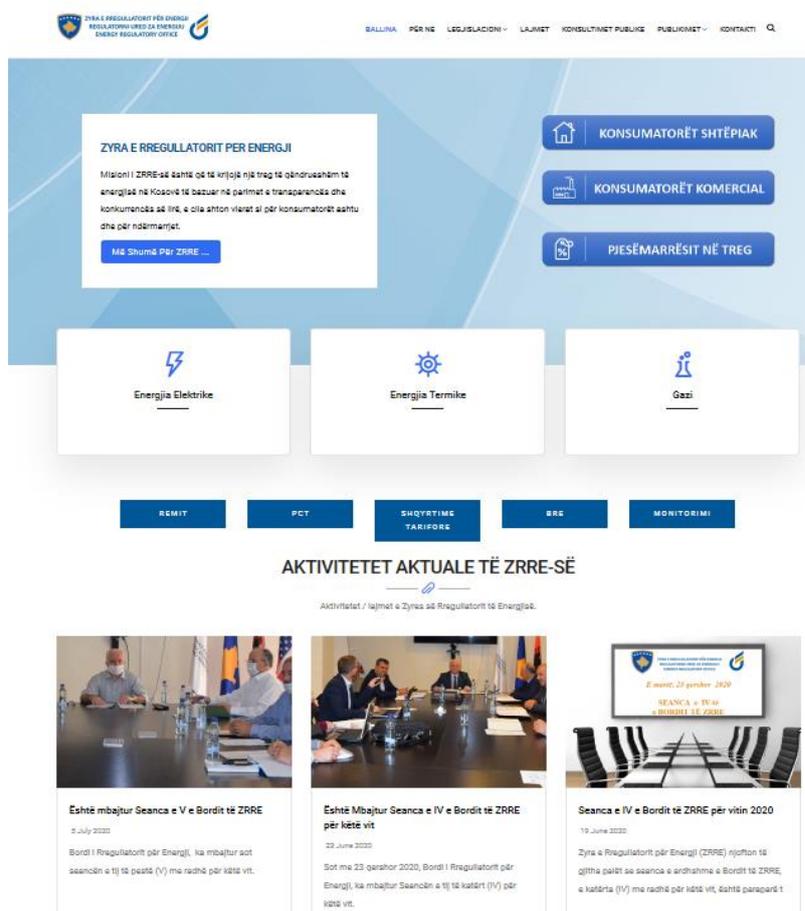


Fig. 4.1 The new website of the Energy Regulator

On 14 December, ERO made available to the public in a new and more accessible form, the numerous data it possesses for the purpose of regulating the energy sector.

The majority of these data have been public so far in the annual reports and other ERO documents. But from the end of 2020 they will be easier to be used by other parties who may intend to conduct various analyzes or studies in the field of energy. The implementation of this project, which is

supported by the Millennium Foundation of Kosovo (MFK), aims to increase transparency and involvement of the general public in the processes of regulating the energy sector.

All interested parties can access the published data through direct access from ERO website at the link: <http://www.ero-ks.org/zrre/sq/te-dhena>.

Also in order to provide better information, ERO has continuously informed customers and the general public on all activities it has carried out. For this purpose, during 2020, over thirty announcements and press releases were issued, which were sent to the media and published on the website and on Facebook as well.

4.1 Involvement of public in regulatory processes through public consultations

During 2020, ERO has conducted 11 public discussions to review various regulatory documents.

On 19 February as part of the Regular Annual Adjustments process for Maximum Allowed Revenues (MARs) to be covered by Regulated Operators in the electricity sector, ERO published the Consultation Papers as initial proposals for the updated MARs for Transmission System Operator and Market Operator (TSO/MO, KOSTT), Distribution System Operator (DSO, KEDS) and Universal Service Supplier (USS). The initial assessment is based on proposals submitted by regulated companies as well as decisions on MARs for the regulatory period 2018-2022.

- In the second session of the Board, held on 6 April 2020, the Board approved the MARs of KOSTT, KEDS and Universal Supply (KESCO). The total approved value of MAR for the regulatory period April 2020 - March 2021 is set at 268.9 million euros.
- On 26 February 2020, ERO during the process of amending the Rule on Taxes, published the draft Rule for consultation with all stakeholders.

The Rule on Taxes aims to specify the types and amount of tax defined in Articles 23 and 24 of the Law on Energy Regulator, in order to collect revenues for ERO. Also, this Rule determines the procedure and deadlines for payment of taxes, as well as the consequences for non-payment of these taxes. The amendment of the rule was approved by the Board of ERO in the second session held on 6 April 2020.

- ERO, on 28 February 2020, published for public consultation the draft Rule on wholesale energy market integrity and transparency. This Rule sets out the criteria that prohibit abusive practices affecting wholesale energy markets that are coherent with the proper functioning of these wholesale energy markets, taking into account their specific characteristics.
- The rule also provides for the monitoring of wholesale energy markets by the Energy Regulatory Office (ERO) and applies to the wholesale trading of electricity. The rule was approved by the Board on 23 June 2020.
- On 15 May, the Rule and Methodology on Preparation of Electricity and Thermal Energy Balances was published for public consultation. This rule defines the principles, procedures and methodologies for preparation of electricity and thermal energy balances. This rule ensures that the operators, who operate in the energy sector, submit their production, consumption and loss plans according to the foreseen deadlines, enabling the most efficient

operation of the respective energy systems. The rule was approved on 23 June 2020 in the fourth session of the Board.

-On 21 August, ERO published for public discussion the Regulatory Report on determination of Maximum Allowed Revenues for the district heating Termokos JSC. The report presents the review of the request and the preliminary evaluation for the Allowed Revenues for the 2020/2021 season of Termokos JSC. The report is prepared based on Thermal Energy Pricing Rule, which defines the procedures for submission, review of the tariff application and approval of tariffs, as well as the methodology for calculating allowed revenues and tariffs.

- On 27 August 2020, the Procedure for exchange and activation of reserves for balancing the regulatory areas and the CA block was published for public discussion. The procedure defines the responsibilities of KOSTT and TSO and the required steps to be taken to activate the FRR (Frequency Retention Reserve), aFRR (Automatic Frequency Restoration Reserve) and mFRR (Manual Frequency Reserve Restoration) and RR (Replacing Reserve), as well as defining the principles for balancing the regulatory areas of KOSTT and TSO and the CA block, including the establishment of common principles for the procurement and activation of frequency regulation reserves, frequency restoration reserves and replacement reserves.
- Also on 27 August, the Methodology on rules for dimensioning FRR in LFC AK Block. The methodology describes the rules for dimensioning FRR in LFC AK Block in accordance with Article 157 (1) of Commission Regulation (EU) 2017/1485 of 2 August 2017 on the establishment of the transmission system operation guide.
- ERO, on 28 August 2020 has published for public discussion the Rule on designation of the nominated electricity market operator (NEMO) for carrying out activities related to market integration and the operation of the common market. The purpose of this Rule is to determine the criteria and procedures for the appointment of the Nominated Electricity Market Operator (NEMO) as well as the revocation of such designation in the Republic of Kosovo by the Regulator. This Rule defines the tasks to be performed by the Nominated Electricity Market Operator NEMO in the Republic of Kosovo in relation to the process of joining the electricity market. This Rule defines the duties that Kosovo Transmission System and Market Operator (KOSTT) will perform in relation to the electricity market coupling process.

-On 15 October, the Methodology for calculating the reference price for energy produced from renewable sources was published for discussion. The purpose of this methodology is to define the method of determining the reference price for energy produced from renewable energy sources (RES). This price will be applied by the Market Operator for the energy sold to the energy supply operators. The same will apply to the sale and purchase of energy from RES according to the regulated framework. This methodology also defines the basic principles according to which the reference price will be calculated and the method of calculating the reference price. This methodology was approved by the Board in the tenth session held on 12 December 2020.

- The Energy Regulator, on 21 October 2020 has published for public discussion the Report on evaluation of competition in the electricity market in Kosovo for the period 2018-2019. The report evaluates the competition in the electricity wholesale and retail market in the country, for the period 2018-2019. The presence of competition in the internal market is evaluated by comparing the existing market situation with the legal requirements under the

primary and secondary legislation of the energy sector in Kosovo, the application of the indicator for measuring market concentration HHI, including the decision of the Regulator’s Board V_342_2011 on the Criteria for evaluation of competition in the electricity supply in Kosovo.

- On 11 November 2020, ERO has published for consultation the Transmission Development Plan (TDP) 2021-2030. This plan presents the planning of the development of Kosovo transmission network for the next 10 years. The 10-year plan also presents the projects that are necessary for reliable and safe operation of the transmission system, in order to achieve security of supply, to support the energy market and competition as well as to support the integration of renewable and complementary thermal sources. After consulting the public, the Board approved the Development Plan in its tenth session held on 10 December 2020.

4.2 Reporting and cooperation with the Assembly of Kosovo

As every year, during 2020 as well, the Regulator has continued the regular reporting to the Assembly of Kosovo and according to the requests received from parliamentary committees there have been other reports related to various regulatory issues of the energy sector.

The Regulator, on 3 March 2020, reported to the Parliamentary Committee on Economy, Employment, Trade, Industry, Entrepreneurship and Strategic Investments, on the process of “Regular Annual Adjustments for Maximum Allowed Revenues (MAR) covered by Regulated Operators in electricity sector”.



Fig. 4.2 –3 March 2020, Reporting of the Regulator to the Parliamentary Committee

The Board and the management of the Regulator, on 26 May 2020, presented the Annual Report 2019 to the Parliamentary Committee on Economy, Employment, Trade, Industry, Entrepreneurship and Strategic Investments. Representatives of the Regulator reported on the activities related to the scope of the Regulator, as well as the functioning of the energy sector, analysing the data of licensees, including the development of the energy market in Kosovo. In the next meeting of the Commission, held on 28 May 2020, the members of the Commission approved the Annual Report 2019 which was also reviewed in the plenary session but failed to be voted due to lack of the quorum.

-On 27 October 2020, the Regulator’s Board responded to the invitation of the Parliamentary Committee on Economy, Employment, Trade, Industry, Entrepreneurship and Strategic Investments

to discuss the issue of the company "KELKOS", as well as other temporary licenses for hydropower plants licensed by the Regulator.



Fig. 4.3 Presentation of the Performance Plan to the Parliamentary Committee

- Also on 1 December 2020, the Regulator discussed with the functional Committee regarding the Recommendations derived from the European Commission's Report for the country for 2020 to report on the Recommendations for the Supervision of the Integration Process 2020 - 2021
- On 15 December, ERO presented to the Committee on Economy, Employment, Trade, Industry, Entrepreneurship and Strategic Investments the performance plan for 2021. Representatives of ERO presented to the members of the committee the performance plans for 2021, referring to the intended activities in order to achieve target objectives.
- At the request of the Parliamentary Inquiry Committee on the process of licensing, operation, supervision and application for hydropower permits in the Republic of Kosovo, ERO also participated in two of the meetings of this committee and submitted copies of all hydropower plant files authorized for construction.

4.3 Meetings with other stakeholders- opening of the free market

During the first three months of 2020, ERO held informatory meetings with groups of customers, who were scheduled to start from April 1 to switch from regulated tariffs to those offered in the open market of electricity supply.

Following the written notices, ERO invited these groups of customers to directly discuss the legal obligations and the necessary steps to be taken to find a suitable operator for electricity supply. In these meetings, customer representatives were informed on the actions taken by ERO to harmonize secondary legislation with the new primary laws, issuing the "Guideline on liberalization of the electricity market in Kosovo." The guide is amended by ERO and defines the manner, criteria and timing of the commencement of liberalization of the electricity market in Kosovo, at electricity generation and supply level.



Fig. 4.4 The meeting with customers, 12 March 2020

ERO informed customers that according to the legislation in force, the right to universal service of supply, where for a while the tariffs shall continue to be regulated, is entitled to all household and non-household customers who have an annual turnover of not more than ten (10) million euros, or not more than fifty (50) employees. Commercial customers at the voltage level of 35 kV, who do not meet the above criteria will be subject to market criteria and prices for electricity supply no later than 31 March 2020.

ERO has also announced that according to the Law on Electricity, in case the customer fails to find suppliers at unregulated prices within the deadline set above, the customer will be provided with a Guaranteed Supply, but who cannot provide supply more than sixty (60) days. Representatives of ERO have stated that the price at which the Last Resort Supplier (guaranteed supplier) supplies electricity to customers in this category, is determined based on the methodology approved by the Regulator and will be higher than the average market price or supply price for similar customers supplied in the market. It is therefore necessary to enter into a supply contract with a new supplier at unregulated prices.

ERO in these meetings has assured customers that its role will continue to remain the same in customer care and that it will continue to monitor all suppliers to ensure that market rules are being respected and customers are being provided appropriate services without discrimination.

Part of the market opening process was the meeting that the Regulator held with some of the licensed electricity supply operators. The purpose of the meeting was to inform the operators once again on the new circumstances that will be created, starting from 1 April of this year, when a new group of customers connected to the 35 kV voltage level is expected to pass from regulated tariffs to the open market of electricity supply.



Fig. 4.5 The meeting with licensed electricity supply operators, 21 March 2020

After the written notices and the prior meeting with customers, ERO also directly informed the licensed supply operators, with the legal obligations and the necessary steps to be taken to provide appropriate services for electricity supply to customers connected to the 35 kV voltage level that meet the criteria for entering the free market. ERO informed the operators that according to the legislation in force, the right to universal service of supply, where for a while the tariffs will be regulated, is entitled to all household and non-household customers who have an annual turnover of not more than ten (10) million euros, or not more than fifty (50) employees. While commercial customers at the voltage level of 35 kV, who do not meet the above criteria will be subject to market criteria and prices for electricity supply no later than 31 March 2020. In this case ERO has requested from operators to make all preparations to make available to customers fair offers of electricity supply.

For the same purpose, ERO also held meetings with representatives of the Kosovo Chamber of Commerce, the American Chamber of Commerce in Kosovo and the European Investors Council to discuss the circumstances and challenges that will arise for commercial customers connected to the 35 kV, upon the opening of the electricity supply market.



Fig. 4.6 The meeting of ERO with representatives of Kosovo Chamber of Commerce, American Chamber of Commerce in Kosovo and the European Investors Council, 16 March 2020

Representatives of the Chambers have requested from ERO to take all necessary legal actions for the re-extension of this deadline for an indefinite period until the creation of circumstances which would enable the liberalization of the electricity market.

Representatives of the chambers recalled the requests submitted a year ago and the decision of ERO to extend the deadline for liberalization for one year and stressed that during the past twelve months' period there have been no changes to any of the circumstances that would allow the proper implementation of legal acts which provide for the liberalization of the electricity market, respectively the supply of commercial customers with electricity at unregulated tariffs. Therefore, they requested from ERO take into account the requirements of the business community.

The Board and management of ERO met on 26 June 2020, with representatives of the German-Kosovo Chamber of Commerce (KDWW). The key topic was the second phase of market liberalization, which was initially influenced by the economic circumstances in the country, but recently also by the situation created as a result of the COVID- 19 pandemic.

In the meeting, the representatives of the KDWW informed the Board of ERO with the activities carried out by this chamber in full support of the deepening of bilateral economic cooperation between the states of Germany and Kosovo. To this end, representatives of ERO and those of the KDWW have expressed the willingness to cooperate in order to inform and create a suitable regulatory environment for German and Kosovar investors represented by this chamber.

Also, the representatives of the KDWW informed the Board of ERO on the structure of German investors in Kosovo and gave an overview of the bilateral economic cooperation Kosovo-Germany, a cooperation that is related to the possibilities of cooperation through KDWW networks in Germany.



Fig. 4.7 The meeting between ERO and representatives of Kosovo-German Chamber of Commerce (KDWW), 6 June 2020

4.4 Cooperation and agreements with other parties

Signing of the agreement with KCA

On 21 September 2020, the Energy Regulatory Office (ERO) and the Kosovo Competition Authority (KCA), signed a Memorandum of Understanding through which they expressed the common interest for cooperation and coordination of activities in the field of energy market in the Republic of Kosovo. Through this Agreement, mechanisms of legal and institutional cooperation have been established to act in prevention and elimination of any behaviour of enterprises and entrepreneurs, which may negatively affect the appearance of competition in the energy market in the Republic of Kosovo.



Fig. 4.8 - Signing of the agreement between ERO and KCA, 21 September 2020

This Agreement was drafted in order to coordinate activities between the two authorities, ERO and ACA, based on paragraph 1 of Article 61 of Law no. 03 / L-229 on Protection of Competition, Article 16 paragraph 1, points 1.9 and 1.11 of Law no. 05 / L-084 on Energy Regulator, paragraph 4 of Article 24 of Law no. 05 / L-081 on Energy.

4.5 Cooperation with international organizations

Partnership activities with NARUC

ERO representatives are involved in some of the programs organized by NARUC¹ (National Association of Regulatory Utility Commissions) in order to support the development of free markets in the region. They have also regularly participated in organized webinars that mainly dealt with:

- Consideration of regulated tariffs due to pandemic;
- Improving investment planning through the implementation of service quality standards;
- Regulatory role in supporting cyber security investments;
- Transition plans and cost recovery after the COVID-19 Pandemic;



Fig. 4.9 ERO representative participates in the role of panellist in the webinar organized by NARUC on Cyber Security

4.6 Participation of the Regulator in international activities

Participation in international activities is considered by ERO as one of the main elements that serves institutional strengthening, increasing the knowledge and experience of its staff. The following are the main activities and active participation in international organizations, international conferences, workshops or multilateral and bilateral meetings.

¹ ERO, since 2008, has a cooperation agreement with the National Association Regulatory Utility Commissions (NARUC) of USA. This partnership is financially supported by USAID and has resulted in procedural and technical changes and improvements to ERO which are based on international best regulatory practices. The NARUC Partnership over the years has included regulators from the Illinois Commercial Commission (ICC), the Pennsylvania Public Utilities Commission (PA PUC), the New York State Public Service Commission (NYSPSC), and the Kentucky Public Service Commission (KPSC) and that of Ohio (PUCO). <https://www.naruc.org>

4.6.1 Participation in the Energy Community Regulatory Board (ECRB)

The Energy Community (EC) is an international organization established by the International Treaty (the so-called Energy Community Treaty) in October 2005 in Athens, involving the countries of the European Union and the region of Southeast Europe and the Black Sea. The activities of the EC in 2020 were focused on the fulfilment of common goals: the implementation of the “acquis communautaire”, the development of a harmonized regulatory framework at regional level, and the liberalization and integration of electricity and natural gas markets.

The EC Contracting Parties are: Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Montenegro, Serbia, Moldova, Ukraine and Georgia. The member states of the European Union are in the capacity of participants, while Norway, Turkey and Armenia have the status of the Observer.

Energy Community Treaty (ECT) is a key strategic component of the European Union (EU) for South East Europe and an effective pre-accession tool, which is aimed at expanding benefits from the Regional Energy Market before the regional countries become EU members.

The main institutions of the EC are: Ministerial Council (MC), Permanent High-Level Group (PHLG), Energy Community Regulatory Board (ECRB), the EC Secretariat with headquarters in Vienna and four advisory forums: on electricity, natural gas, social issues and oil.

The Energy Community Regulatory Board (ECRB)- is an institution established under Article 58 of the ECT, comprised of regulatory authorities of the contracting parties, participants and observers. ECRB plays the role of a coordinating body of the regulatory authorities for harmonization of the regulatory framework, exchange of knowledge and development of best practices on implementation of the Treaty.

Based on the provisions of the EC Treaty, ECRB has the responsibility to:

- advise to the Ministerial Council and PHLG on statutory, technical and regulatory issues;
- issue recommendations to parties, in line with the provisions of the Treaty, on any cross-border disputes, etc.;
- undertake measures against parties, if authorized by the MC;
- facilitate cooperation and coordination among regulatory authorities;
- give recommendations and draft reports about the functioning of energy markets; and
- seek fulfilment of the parties' obligations under ECT.

With the purpose of fulfilling its responsibilities, ECRB is organized in working groups that perform activities in their respective fields. ECRB is chaired by the President, annually elected by the representatives of national regulators, and the deputy who is delegated by the European Commission.

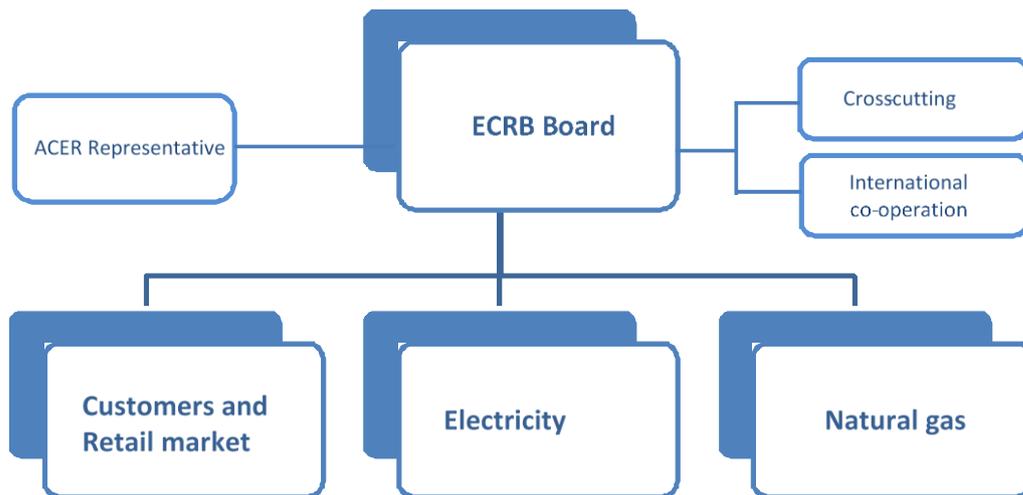


Fig. 4.10 The Structure of Energy Community Regulatory Board

4.6.2 Activities of the Regulator within ECRB

Under its obligations to the EC, the Regulator has appointed its members to the ECRB and to each working group and actively participates in the activities of the Board and the relevant working groups.

Due to restrictions from the COVID-19 pandemic, during 2020, the activities of the working groups were limited, while the meetings were mainly held 'online'. However, despite the limitations, the ECRB and relevant working groups have undertaken regular activities under the ECRB work program.

4.6.2.1 Electricity Working Group

During 2020, this working group held regular meetings and activities within its scope “online”. For more efficient work, this group has also established its subgroups (Task Forces –TF), as follows:

- **TF1 –Opening and integration of the wholesale electricity market** -In order to support the effective opening of electricity regional markets in Energy Community, this subgroup is focused on regulatory support activities, integration of the "day-ahead" and “intra-day” markets in South East Europe.

TF2 – Favorable regulatory investment climate –the activities of this sub-group are focused on creating a stable, sustainable and harmonized regulatory framework at the regional level, as a basic precondition for attracting investments in energy infrastructure.

- **TF3 –Monitoring of the wholesale electricity market:**

Market monitoring as a key component of regulatory responsibilities, includes full knowledge of market performance and development prospects enabling the promotion of competition, customer protection, energy efficiency, investment and security of supply.

TF4 – Integration of renewable energy and balancing–Within this task force, the regulatory challenges for the integration of renewable energy in energy systems and the responsibility

of energy producers from renewable sources for balancing the system have been evaluated.

TF5 –Opinions on the electricity grid codes and regulatory guidelines –the main task of this subgroup has been the reviewed coordination and provide opinions on electricity grid codes and relevant regulatory guidelines.

TF6 – Cyber Security –this subgroup has provided electricity-related inputs to facilitate information exchange and strategic cooperation to enhance the cyber security of digital systems in the energy sector.

4.6.2.2 Gas Working Group (GPG)

This working group focuses its activities on issues of regulating the natural gas sector, harmonizing the regulatory framework at regional level and other issues related to the development of natural gas infrastructure in the SEE region. For efficiency purposes and in favour of handling specific issues, specific subgroups are created ("Task Force"-TF).

TF1 –Monitoring of natural gas wholesale market - Market monitoring is a fundamental component of regulatory responsibilities which includes the complete reporting on market performance and development prospects enabling the promotion of competition, customer protection, energy efficiency, investments and security of supply of natural gas.

TF2 –Implementation of the Grid Code in congestion management - The activities within this task force have focused on congestion monitoring at interconnection points considering capacity trading in secondary markets and the use of 'intermittent' capacity, as well as analysis of existing long-term contracts.

TF3 –Implementation of the Grid Code for capacity allocation mechanism– activities are focused on involving national regulatory authorities and gas transmission system operators in the selection of the joint capacity reservation platform, in order to implement Article 37 of the Network Code for capacity allocation.

TF4 – Favorable regulatory investment climate –the activities of this sub-group are focused on creating a stable, sustainable and harmonized regulatory framework at the regional level, as a basic precondition for attracting investments in natural gas infrastructure.

TF5 –Opinions on natural gas grid codes and regulatory guidelines–The main task of this subgroup has been the reviewed coordination and provide opinion on electricity grid codes and relevant regulatory guidelines.

- **TF6 – Cyber Security** –this subgroup has provided natural gas related inputs to facilitate information exchange and strategic cooperation to increase the cyber security of digital systems in the natural gas sector.

4.6.2.3 Working Group for Customers and Retail Markets

Within ECRB, there is a customer working group with its own sub-groups, which deals with customer-protection related activities, retail prices and tariffs, contractual relations between suppliers and customers, and the quality of energy supply and regulation of the voltage quality.

TF1 –Monitoring of the retail market- Market monitoring as a fundamental component of regulatory responsibilities includes full knowledge of market performance and development prospects to enable the creation of an effective framework that balances the needs of market participants and promotes competition, customer protection, energy efficiency, investments and security of supply.

TF2 – Customer protection –as customer protection is considered as one of the main tasks of the Regulatory Authorities, consequently this responsibility is transferred also to the regional/international organizations such as ECRB, CEER and MEDREG. The activities are focused on the cooperation of these 3 regional bodies for the exchange of best and most efficient practices in the area of customer protection.

TF3 – Quality of supply - achieving a satisfactory level of supply quality continuously remains a basic activity of the Regulatory Authorities, as well as monitoring the quality of electricity and gas supply.

TF4 –Next generation of customers and digital channels of communication –this subgroup has evaluated the level of digitalization of customer services and digital communication channels provided by regulators, energy supply companies, network operators and other stakeholders, and has made recommendations for further development of digital services including also recommendations for improving the current legal framework. This subgroup is led by a representative of ERO.

TF5 – ‘E-mobility’ –The activities of this task force have included the analysis of the legal and regulatory framework, as well as the technical and economic aspects necessary for the creation of the relevant infrastructure for electric vehicles.

4.6.2.4 REMIT and Cyber Security Working Group

Four task forces have functioned under this group:

- **TF1 – Procedural aspects:** which has addressed the approach for drafting the procedural acts for reporting and reporting format, as well as the handling of confidential information.
- **TF2 – Registration and demands for information technology:** the format of registration of market participants of the Contracting Parties has been developed as well as a register at the ECRB level.
- **TF3 – Implementation of REMIT Regulation no.1227/2011:** where aspects of the proper implementation of this regulation and professional capacity building to address issues of implementation of the REMIT regulation were evaluated.

- **TF4 – Cyber Security:** Given the growing digitalisation in energy sector, this task force has addressed various aspects of cyber security and provided relevant recommendations to increase cyber security in the EC Contracting Parties.

4.6.3 Participation of the Regulator in ERRA activities

Being an associated member of ERRA², ERO has its regular members appointed to the working groups and the group of chairpersons, who have held their meetings during this period, but through the Internet.

Some of the webinars were organized in cooperation with NARUC and CEER,³ especially the ones dealing with issues in the energy sector, created by COVID-19 pandemic. Representatives of ERO have also attended meetings of groups of chairpersons and liaison officers and participate in meetings and work of regular Committees such as the Committee on Natural Gas; Committee on Electricity Market and Economic Regulation; Renewable Resources Committee and Customer Committee.

4.7 Procurement activities

The Regulator is facing many problems due to the non-implementation of procurement procedures by the Central Procurement Agency (CPA). As a result of the amendment of the Law on Public Procurement, the operation of the office has been hampered by the lengthy procedures from CPA, during the development of procurement activities. This has left the office without the services and supplies which are necessary for its normal operation.

² [ERO since 2005 is a member of the Regional Association of Energy Regulators, ERRA. ERRA is a voluntary organization composed of independent energy regulatory bodies mainly from Europe, Asia, Africa, the Middle East, South America and North America. https://erranet.org/](https://erranet.org/)

³ [CEER \(Council of European Energy Regulators\) was established in 2000 for the purpose of cooperation between independent energy regulators in Europe and has among itself 33 regulatory authorities from EU countries, EFTA and aspiring countries of the EU, including those of the Energy Community where Kosovo part of. ERO, since 17 November 2015 is an associate member of CEER. https://www.ceer.eu/](https://www.ceer.eu/)

5 FINANCIAL REPORTING OF THE REGULATOR

The Regulator is funded from own source revenues, in line with the Law on Energy Regulator, Chapter 4, namely the taxes collected by enterprises and licensed operators in the energy sector.

5.1 Revenues

All collected revenues of the Energy Regulatory Office have been deposited in accordance with Article 64 of the Law on Public Financial Management and Accountability in the official bank account established by the General Director of Treasury.

In 2020, the Energy Regulatory Office collected revenues in an amount of € 1,369,258.80. Given that the total amount of the budget spent by the Regulator in 2020 is € 690,510.89€, the unspent revenues in the amount of € 678,747.91, pursuant to Article 23 of the Law on Energy Regulator, will be transferred to the Budget of the Republic of Kosovo.

Tab. 5.1 Revenues

Description	Amount
Own-source Revenues 2020	1 369 258,80 €
Expenditures 2020	(690 510,89) €
Revenues transferred to the Budget of the Republic of Kosovo	678 747,91 €

5.2 Budget

The Assembly of Kosovo, in line with Law no. 07/L-001 on the Budget of the Republic of Kosovo for year 2020 approved the budget of the Energy Regulatory Office in the amount of € 818,987.00, which is entirely allocated as a government grant, although according to the Law on Energy Regulator, the Regulator is funded from own source revenues and only in cases where such revenues are insufficient, then the Regulator may use budget allocations in the form of government grants. According to the economic categories the Regulatory Budget is as follows:

Tab. 5.2 Budget at the beginning of the year

Description	Budget
Wages and Salaries	516 622,00 €
Goods and Services	208 365,00 €
Utilities	22 000,00 €
Capital Expenditures	72 000,00 €
Total	818 987,00 €

By the Law no. 07/L-014 and the decision of the Government dated on 21.12.2020 no. 09/50, the budget of the Energy Regulatory Office has been reduced by € 111,886.51. The budget was reduced in all economic categories as follows: salaries and wages 43,400.40, goods and services € 23,692.66,

utilities 7,605.45 and capital expenditures € 37,188.00. Expressed in percentage, ERO's budget has been reduced by 13%.

It is important to note that the budget of ERO was cut by the Government of the Republic of Kosovo at the end of 2020, due to its non-allocation. The reason for not spending the budget in the category "salaries and wages" is due to non-completion of the position of chairman of the Board throughout 2020, whereas the non-allocation of the budget in the categories "goods and services", "capital expenditures" and "utilities" is due to savings caused as a result of the COVID-19 pandemic.

Tab. 5.3 Final Budget

Description	Budget
Wages and Salaries	473 221,60 €
Goods and Services	184 672,34 €
Utilities	14 394,55 €
Capital Expenditures	34 812,00 €
Total	707 100,49 €

5.3 Budget expenditures

To fund the activities carried out in 2020, the Regulator spent € 690,510.89.

According to the economic classification, the Regulator's Expenditures are as follows:

Tab. 5.4 Expenditures by economic categories

Description	Amount
Wages and Salaries	473 221,60 €
Goods and Services	168 828,90 €
Utilities	13 648,39 €
Capital Expenditures	34 812,00 €
Total	690 510,89 €

Budget execution in proportion to the remaining budget after cuts is 97.65 %.

The budget execution rate by economic categories, expressed in percentage, is presented in Table 5.5.

Tab. 5.5 Execution of the budget expressed in percentage

Description	Budget	Expenditures	Difference	Execution in %
Wages and salaries	473 221,60 €	473 221,60 €	- €	100,00%
Goods and services	184 672,34 €	168 828,90 €	15 843,44 €	91,42%
Utilities	14 394,55 €	13 648,39 €	746,16 €	94,82%
Capital expenditures	34 812,00 €	34 812,00 €	- €	100,00%
Total	707 100,49 €	690 510,89 €	16 589,60 €	97,65%

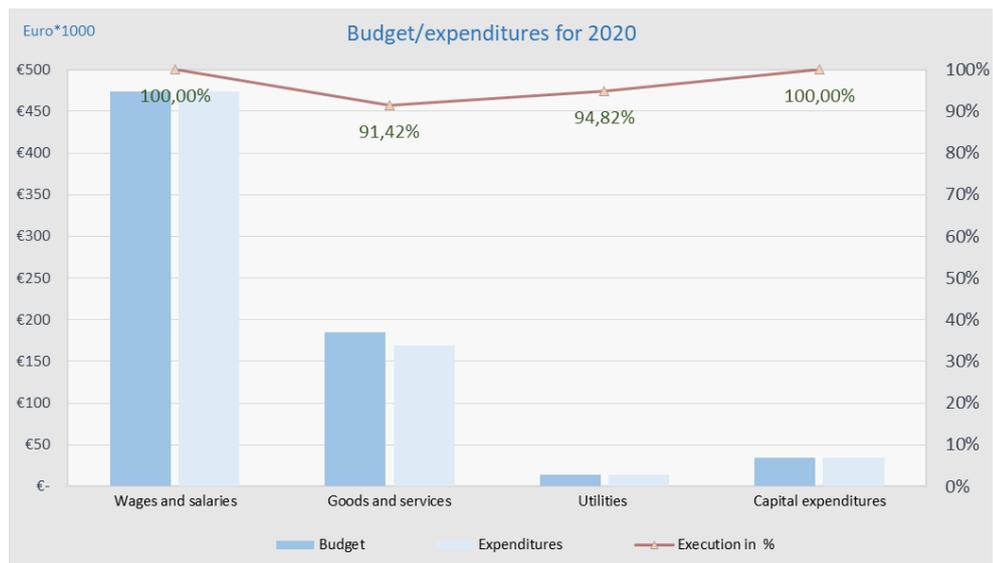


Fig. 5.1 The budget and expenditures for 2020

The following table presents the expenditures by economic codes.

Tab. 5.6 Wages and salaries

Wages and salaries	Amount
Net wages	393 528,06 €
Personnel income tax	34 623,98 €
Employer's pension contribution	22 534,78 €
Pension contribuion of employees	22 534,78 €
Total	473 221,60 €

Tab. 5.7 Goods and services

Goods and Services	Amount
Expenditures for official travels abroad	932,31 €
Allowances for official travels abroad	3 242,95 €
Accommodation for official travels abroad	878,19 €
Other expenditures for official travels abroad	283,80 €
Internet expenditures	2 033,88 €
Mobile telephony	5 122,54 €
Postal expenditures	207,70 €
Education and training services	480,00 €
Different intellectual and advisory services	5 259,27 €
Printing services	13,60 €
Other contracting services	- €
Membership expenditures	4 060,00 €
Furniture	- €
Computer	19 914,00 €
Hardware for IT	2 842,80 €
Other equipment	- €
Office supplies	2 826,53 €
Beverage supply	2 720,96 €
Accommodation	- €
Generator fuels	- €
Vehicle fuels	4 543,32 €
Vehicle registration	430,00 €
Vehicle insurance	836,77 €
Municipal tax for vehicle registration	40,00 €
Security of premises	7 044,90 €
Vehicle maintenance and repair	1 255,60 €
Building maintenance	6 580,00 €
Maintenance of information technology	25 788,30 €
Maintenance of furniture and equipment	- €
Building rent	49 140,00 €
Equipment rent	770,14 €
Vehicle rent	11 951,04 €
Advertisements and vacancies	325,00 €
Official dinners	4 445,30 €
Rental tax payment	4 860,00 €
Total	168 828,90 €

As shown in Table 5.7, the amount of funds spent for this category of expenditures is € 168,828.90.

The budget expenditures based on the activities are as follows:

Tab. 5.8 Expenditures by activities

Expenditures by activities	Amount
Travel expenditures	5 337,25 €
Telecommunication services	7 364,12 €
Expenditures for services	9 812,87 €
Purchase of furniture and equipment	22 756,80 €
Purchase of other goods and services	5 547,49 €
Derivatives and fuels	4 543,32 €
Registration and insurance services	8 351,67 €
Maintenance	33 623,90 €
Rent	66 721,18 €
Marketing expenditures	325,00 €
Representation expenditures	4 445,30 €
Total	168 828,90 €

Tab. 5.9 Utilities

Utilities	Amount
Electricity	12 627,95 €
Water	258,01 €
Telephone Expenditures	762,43 €
Total	13 648,39 €

Tab. 5.10 Capital expenditures

Capital Expenditures	Amount
Information Technology Equipment	34 812,00 €
Total	34 812,00 €

6 ELECTRICITY SECTOR

6.1 Characteristics of the electricity sector

The energy system in the Republic of Kosovo, consisting of electricity generation, electricity transmission, electricity distribution and suppliers as well as wholesale traders, is designed primarily to produce basic electricity, which is based on lignite as a raw material. first, but not for covering the maximum loads and balancing the system which remains a major challenge for all stakeholders in the sector.

Kosovo has installed production capacities of 1,442 MW, including generation capacities from RES, however the operating capacity is considered around 1,110 MW, of which lignite thermal power plants (TPP) make up about 86.49%, while the rest consists of HPP Ujmani, wind power plant Kitka (Air Energy) and other RES (hydropower plants, solar panels and wind farms) by 13.51%.

Most of the consumption is covered by domestic production, but due to power plant aging and insufficient flexibility to accommodate demand at different times, especially at peak times, then imports, and sometimes exports, are required to balance the system.

The figure below shows the electricity generation, import, export and demand over the last ten years.

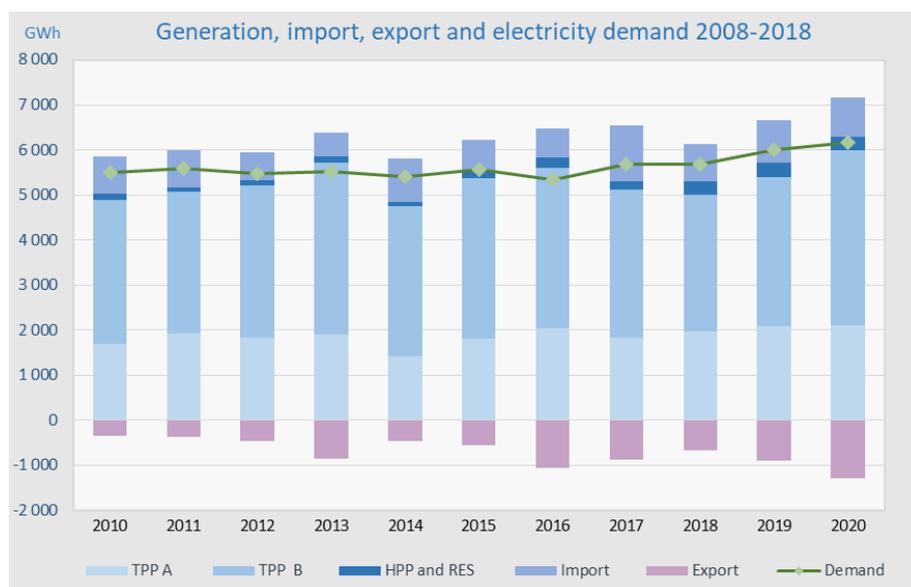


Fig. 6.1 Generation, import and electricity demand 2010 - 2020

6.1.1 Electricity market

The electricity market in Kosovo is constantly evolving and is inextricably linked to the regional market and beyond.

Despite the situation created by COVID 19, activities have continued in relation to the creation of a joint stock exchange with Albania for the day-ahead and intraday market, as well as the merger of electricity markets. The working groups and the representatives of the two countries, Kosovo -

Albania, have held joint virtual meetings regarding the action plan for carrying out these activities for preparation of the necessary documents for the establishment of the Power Exchange and the market coupling between the two countries.

In Kosovo there is still no organized day-ahead or intraday market, so wholesale electricity trading is carried out mainly through bilateral contracts between producers and suppliers (traders). A part of the electricity to meet the local demand for the needs of customers entitled to the universal service (USS), to cover system losses, as well as for customers at deregulated prices, is imported (purchased) through bilateral contracts in the free market and/or in regional day-ahead or intraday markets (through traders).

Price deregulation for final customers, according to the Guideline on Liberalization of the Electricity Market in Kosovo continues to be carried out gradually, where customers connected to the 220 kV and 110 kV voltage network are already supplied at deregulated prices. The deadline that, starting from 31 March 2020, customers connected to the 35 kV voltage network who are not entitled the right to universal service have to be supplied with energy at deregulated prices has been extended to 31 March 2021 due to the circumstances created by COVID 19 pandemic, whereas for consumers connected to the voltage level of 10 kV who also are not entitled the right to universal service remains the same deadline, 31 March 2021, to be supplied with energy at deregulated prices.

HPP Ujmani, also during 2020 has continued to trade all the energy in the free market, respecting the principles of the Electricity Trading Procedure.

The energy produced by KEK, according to the Bulk Supply Agreement⁴ (BSK) is offered to the Supplier who supplies the customers entitled to the Universal Service as well as to cover system losses, and the surpluses are traded at the wholesale market in line with the Electricity Trading Procedure⁵.

As it is known, the power system of Kosovo does not have the flexibility to adapt to the demand due to the low flexibility of the system to meet the demand and the high demand at peak times, and there is a need for imports or exports of electricity. From the overall electricity demand at the country level, 6,167 GWh (including transmission and distribution losses), most of it is covered by domestic generation, whereas the rest is covered by electricity imports.

The table below presents system balancing, which shows that during 2020, Kosovo was a net importer.

⁴ https://mzhe-ks.net/repository/docs/MARREVESHJE_PER_FURNIZIM_ME_SHUMICE_-_tetor2012_KKDFE.pdf

⁵ http://ero-ks.org/2019/Treagu/Procedura_per_Tregtimin_e_Energjise_Elektrike.pdf

Tab. 6.1 Balancing of the power system

Balancing of power system 2020	GWh	
Production from generators in transmission	6,187	
Production from generators in distribution	114	
Import	839	
Total available energy	7,140	
Export	1,283	
Net import/export	444	
System deviations (retrieval from the system)	-316	
Transit	1,918	
National demand	6,167	
Transmission losses	107	
Number of customers in transmission network	396	
LLOMAG consumption	114	
Load in distribution network	5,549	
Distribution losses	1,409	
Net consumption in distribution	4,140	

The share of transit in the transmission system network has a downward trend, especially with the increase of domestic demand, and this year is about 31.1% compared to demand and is much lower compared to previous periods where in some years it has been much higher, even higher than 50%.

It should be emphasized that KOSTT since 14 December 2020 has started operating as a Regulatory Area within the Kosovo-Albania Regulatory Block and is now recognized as a trading area, where balancing the system will be the full responsibility of KOSTT, which means covering all system deviations, the responsibility regarding the safe operation of the interconnection system, as well as the allocation of cross-border capacities and congestion management which means the collection of revenues from cross-border trades.

The figure below shows the flow of electricity from generation, transmission up to the distribution to customers as well as electricity flows towards regional networks and from regional networks including transit.

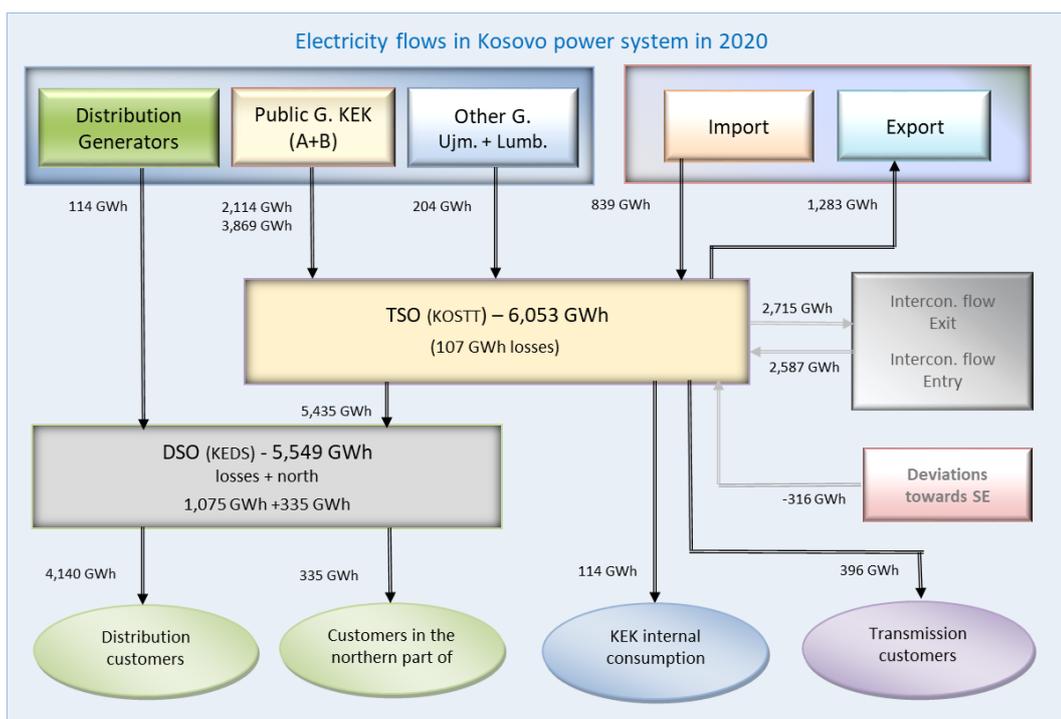


Fig. 6.2 Electricity flows in the system in 2020

6.1.2 Generation adequacy and security of supply

During recent years, there is a small increase of generating capacities as a result of the commissioning of some renewable sources, however local generation is not sufficient to cover the maximum load in the power system of Kosovo. This lack of energy to meet national demand is covered by electricity imports.

The overall generation capacity of generators in Kosovo is 1,110 MW, while the maximum load during this year was 1,251 MW, therefore the ratio of the generation adequacy towards the maximum load is 88.7%.

The table below shows maximum and minimum monthly loads during 2020.

Tab. 6.2 Maximal and minimal loads in 2020

Load 2020	January	February	March	April	May	June	July	August	September	October	November	December
	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h
Maximum	1 181	1 104	1 000	973	845	766	689	651	773	977	1 178	1 251
Minimum	609	520	467	356	316	296	292	288	296	339	438	624

While the generation system has adequacy shortcomings, the transmission system contains sufficient reserves to enable electricity flows to meet local demand, including coverage of maximum load (peak), as well as to enable transit through interconnection lines.

The table below shows the maximum and minimum loads (P_{max} and P_{min}) of the Kosovo power system over the years, the time of their occurrence, production, as well as the respective import and export of electricity.

Tab. 6.3 Maximal and minimal power system loads

Year	Maximum load							Minimum load						
	Pmax			Production	Import	Export	Deviation *	Pmin			Production	Import	Export	Deviation *
	[MW]	Date	Hour	[MW]	[MW]	[MW]	[MW]	[MW]	Date	Hour	[MW]	[MW]	[MW]	[MW]
2015	1 129	31,12	20:00	825	308	0	-4	272	30,08	04:00	250	0	50	-72
2016	1 160	31,12	18:00	797	321	0	42	246	12,06	06:00	711	0	310	155
2017	1 161	11,01	20:00	660	415	0	86	286	3,06	06:00	733	50	440	57
2018	1 203	31,12	18:00	787	271	0	145	265	27,06	06:00	577	5	430	-113
2019	1 253	31,12	18:00	861	348	16	60	289	7,06	06:00	435	15	140	21
2020	1 251	21,12	11:00	819	350	32	114	288	9,08	04:00	548	12	280	8

* Deviation of the system towards the interconnection system

As mentioned earlier, the energy required to cover the losses in the transmission and distribution network is provided proportionally by the remaining energy from KEK after the allocation of energy for the universal service, then the rest of the energy to cover the losses in a market is provided by import.

6.2 Primary energy sources

In recent years there has been an increase in production capacity from RES such as: water energy, wind energy, solar energy, but the energy produced by lignite as a primary source of energy still continues to dominate in Kosovo, which on the one hand provides the security of long-term electricity production, but the environmental impact remains a problem due to the emission of greenhouse gases and other pollutants.

6.2.1 Lignite production and consumption

Lignite production in 2020 was 8.54 mil.ton, whereas the consumption 9.06 mil. ton, these amounts being smaller compared to 2019

Production and consumption of lignite by months, for 2020, is presented in table 6.4.

Tab. 6.4 Production and consumption of lignite in 2020

Lignite production/consumption	Totali	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lignite Production (t*1000)	8 538	876	624	819	692	719	539	602	533	761	775	737	859
Lignite Consumption (t*1000)	9 059	851	743	865	771	776	555	638	696	749	775	779	862
Lignite Consumption in the market	164	17	19	25	14	12	14	2	3	13	18	15	11

The following figure shows the production and consumption of lignite during 2010 - 2020.

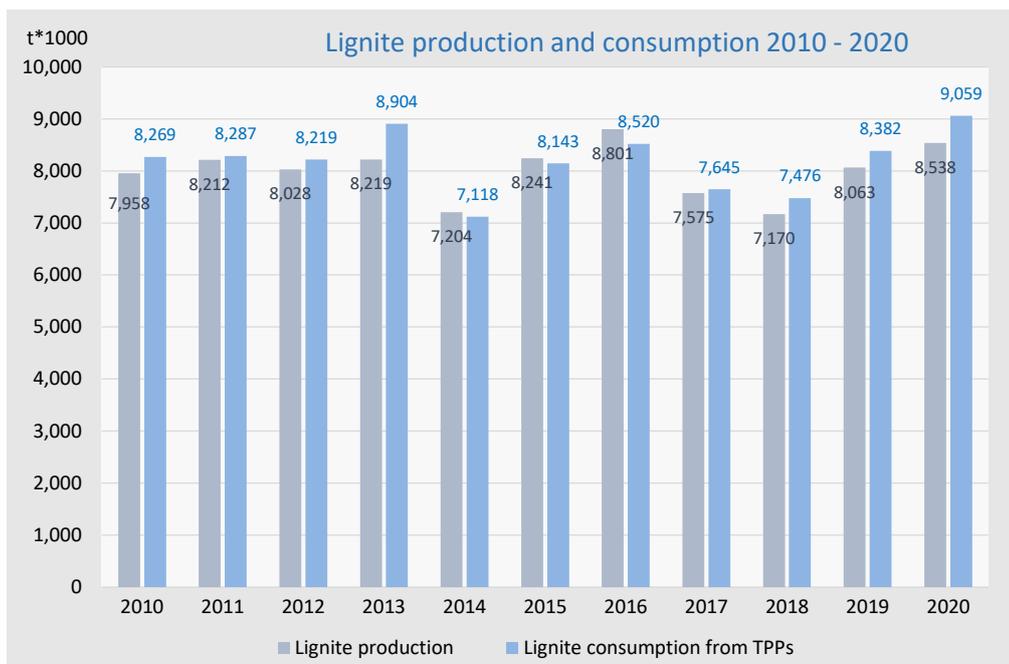


Fig. 6.3 Lignite production and consumption during 2010 – 2020

6.3 Electricity generation

6.3.1 Electricity generation capacities

The total operating capacity of electricity generation in Kosovo is 1110 MW, of which 960 MW or 86.5% MW are from thermal power plants and the rest are hydropower plants and renewable energy sources (hydropower plants, wind farms and photovoltaic panels).

The capacity of generating units is presented in the following table, by primary source, installed and operational capacity, minimal and maximal generation limit as well as the year of entry into operation.

Tab. 6.5 Generation capacities in Kosovo power system

Generating Units	Unit Capacity (MW)			Entry into operation
	Installed	Net	Min/max	
TPP Kosova A1	65	Nuk operon		1962
TPP Kosova A2	125	Nuk operon		1964
TPP Kosova A3	200	144	100-130	1970
TPP Kosova A4	200	144	100-130	1974
TPP Kosova A5	210	144	100-135	1975
TPP Kosova A	610	432		
TPP Kosova B1	339	264	180-260	1983
TPP Kosova B2	339	264	180-260	1984
TPP Kosova B	678	528		
HPP Ujmani	35,00	32,00		1983
HPP Lumbardhi	8,08	8,00		(1957) 2006
HPP Dikanci	4,02	3,34		(1957) 2013
HPP Radavci	1,00	0,90		(1934) 2010
HPP Burimi	0,95	0,85		(1948) 2011
Lumbardhi II	6,20	6,20		2020
Total HPPs (out of the Support Scheme)	55,25	51,29		
EGU Belaja	8,06	8,06		2016
EGU Deçani	9,81	9,81		2016
HPP Hidroline-Albaniku III	4,27	4,27		2016
HPP Brod II	4,80	4,80		2015
HPP Restelica 1&2	2,28	2,28		2016
HPP Brodi III	4,70	4,70		2016
HPP Brezovica	2,10	2,10		2017
HPP Orqusha	4,00	4,00		2019
HPP Lepenci 3	10,00	10,00		2019
HPP Dilli com	0,31	0,31		2020
HPP Hidroline-Albaniku II	3,55	3,55		2020
HPP ECO Energji	1,00	1,00		2020
Wind Power	1,35	1,35		2010
Air Energy-Kitka	32,40	32,40		2018
PV LedLight Technology	0,10	0,10		2015
PV ONIX SPA	0,50	0,50		2016
PV Birra Peja	3,00	3,00		2018
PV Frigo Food Kosova	3,00	3,00		2018
PV Eling	0,40	0,40		2019
PV SGE	3,00	3,00		2019
Total RES (in Support Scheme)	98,63	98,63		
Total	1 441,88	1 109,92		

Over the last few years there has been an increase in installed generation capacities of RESs, which continue to be put into operation as private investments.

6.3.2 Electricity generation

The total generation of electricity in 2020 was 6,301 GWh, while in 2019 it was 5,718 GWh, which means that there is an increase of 10.2%. Whereas, compared to the electricity balance for 2020, generation was realized about 101.4%.

The national production as well as own costs by units and months during 2020 are presented in the table below.

Tab. 6.6 Electricity generation in 2020

Producers GWh MWh	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TPP A3 Gross	526,1	49,8	40,0	0,0	40,8	77,7	0,0	55,6	39,1	70,7	0,0	86,3	66,2
TPP A4 Gross	1 052,6	86,2	103,0	109,9	65,6	108,9	83,4	54,8	71,2	99,9	110,7	105,6	53,3
TPP A5 Gross	817,1	81,2	27,9	110,3	63,6	1,7	106,7	92,0	110,4	9,0	108,5	13,6	92,4
TPP A Own-Expenses	281,9	25,8	19,6	25,4	20,7	21,8	22,8	24,3	26,1	20,9	25,2	23,3	26,1
TPP A threshold	2 113,9	191,3	151,4	194,7	149,2	166,5	167,4	178,0	194,7	158,8	194,0	182,2	185,8
TPP B1 Gross	2 162,8	214,2	200,0	211,7	202,1	197,8	0,0	139,1	207,9	199,7	174,9	202,7	212,7
TPP B2 Gross	2 104,4	193,0	185,3	204,7	195,3	168,2	200,3	108,3	88,8	191,1	185,0	178,5	206,0
TPP B Own-Expenses	397,9	38,0	35,6	38,4	36,9	35,5	18,6	23,4	27,7	35,6	33,9	35,6	38,6
TPP B threshold	3 869,3	369,2	349,7	378,0	360,5	330,4	181,7	224,0	269,0	355,2	326,0	345,6	380,1
HPP+RES Transmissi	203,5	15,8	16,0	18,3	20,6	26,3	13,3	15,6	10,3	15,8	18,0	13,3	20,2
RES Distribtuion	114,1	5,1	9,2	15,8	17,5	20,1	13,7	8,5	7,4	3,6	6,2	3,3	3,7
Total	6 300,8	581,4	526,2	606,9	547,7	543,3	376,0	426,1	481,3	533,3	544,2	544,5	589,8
Balance 2020	6 210,8	581,0	546,4	603,3	559,6	607,3	389,8	405,9	440,5	527,8	485,1	488,6	575,5
Report tot./bil	101,4%	100,1%	96,3%	100,6%	97,9%	89,5%	96,5%	105,0%	109,3%	101,0%	112,2%	111,4%	102,5%

Gross production of thermal power plants in 2020 was 6,663 MWh, of which 680 MWh or 10.2% is consumed by the power plants as own consumption. Part of this consumption (for both generators TPP Kosova A and TPP Kosova B) is realized directly from the plants, while the rest is exported into the transmission system and then consumed by the power plants.

The figure below presents the participation of generators in the overall electricity generation in 2020.

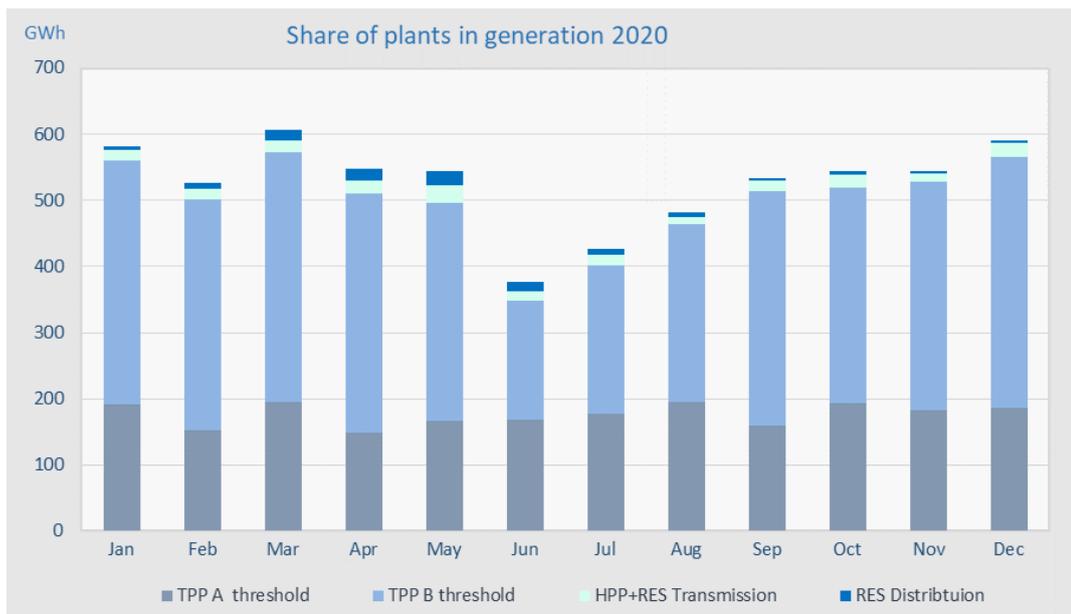


Fig. 6.4 Production of generating units in 2020

The generation of RES connected to the transmission network in 2020 was 203.5 GWh and is lower by 17.3% compared to 2019. While the production of RES connected to the distribution network was 114.1, and is for 32% higher compared to 2019, because four hydro-generators with a total capacity of 14.86 MW started operation.

The following tables present electricity generation from RES connected to the transmission network, respectively to the distribution network.

Tab. 6.7 Generation from RES connected to the transmission network in 2020

RES in Transmission	Installed Capacity	Production	Share of production*
	MW	MWh	%
HPP Ujmani	35,00	63 335	31,12
HPP Kaskada Lumbardh	32,15	48 991	24,07
Air Energy/Kitka	32,40	91 184	44,81
Total RES	99,55	203 511	100%

* Share of generating units towards RES production in transmission

Tab. 6.8 Generation from RES connected to the distribution network in 2020

RES in Distribution	Installed Capacity	Production	*Share of production
	MW	MWh	%
Hydroline	4,58	13 003	11,40
Dikanci	4,02	8 628	7,56
Radavci	1,00	3 855	3,38
Burimi	0,95	1 438	1,26
Eurokos-JH	4,80	27 076	23,73
HPP Brezovica	2,10	4 390	3,85
HPP Orqusha	4,00	10 677	9,36
HPP Lepenci 3	9,99	28 160	24,68
HPP Eko Energji	1,00	1 271	1,11
HPP Dilli com	0,31	1 116	0,98
Wind	1,35	903	0,79
Solar-C	0,10	129	0,11
Solar-Feti	0,10	50	0,04
Solar Onix	0,50	655	0,57
Solar Birra Peja	3,00	4 187	3,67
Solar Frigo Food	3,00	4 176	3,66
Solar plant "Eling"	0,40	626	0,55
Solar plant Green Enerj	3,00	3 751	3,29
Total RES	44,20	114 092	100%

* Share of generating units towards RES production in distribution

Operation of generating units

The planned overhauls for TPP Kosova A and TPP Kosova B in 2020 have been postponed for technical reasons which have resulted from the restrictions due to COVID 19. This has affected the operation of these units to be higher than that provided in the energy balance, which has also resulted in higher production.

Compared to last year, the number of interruptions from the operation of lignite generating units has been lower. The table below shows all types of interruptions and availability of thermal power plants for 2020, where it is noticed that the availability of generating units TPP Kosova A3 and TPP Kosova A4 was at a good level.

Tab. 6.9 Interruptions of generating units 2020

2020	TPP Kosova A			TPP Kosova B	
	A3	A4	A5	B1	B2
Planned Interruptions	1	3	2	2	1
Unplanned Interruptions	8	3	3	1	8
Failures	3	1	1	3	8
Total Interruptions	12	7	6	6	17
Working hours	3 609	7 190	5 598	7 660	7 716

The operation hours of the generating units of TPP Kosova A and TPP Kosova B in graphical form are shown in the figure below, with variations by units, where it is noticed that B2 unit operated 88.08% of the year.


Fig. 6.5 Operation of generating units in 2020

The figure below presents the production of generating units for the period 2010 - 2020.

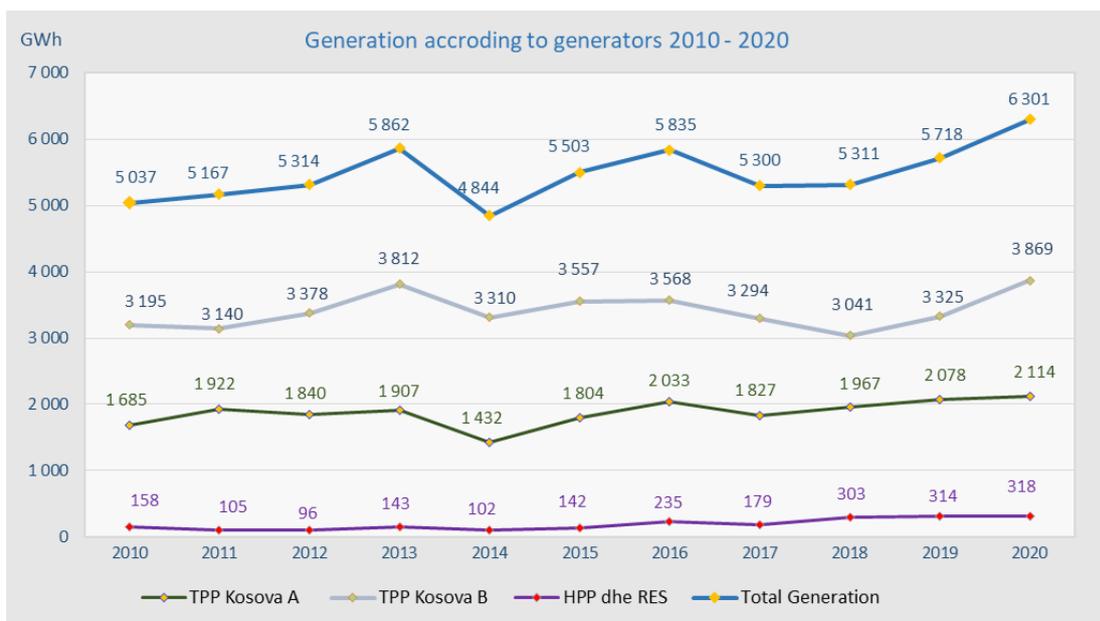


Fig. 6.6 Electricity generation, 2010 – 2020

6.4 Transmission System

Transmission as a regulated energy activity is responsible for the operation, management, maintenance, development and construction of the transmission network and transmission lines and the balancing of the system, as well as to ensure the long-term capability of the network in order to meet reasonable requirements for electricity transmission.

The transmission network of the power system of Kosovo is quite developed and offers sufficient security of the system and is well connected to the regional and European system through interconnection lines with:

- Albania, North Macedonia, Montenegro and Serbia– with 400 kV lines;
- Albania and Serbia – with 220 kV lines; and
- Serbia - with two lines 110 kV.

The 400 kV interconnection line SS Kosova B - SS Kashar (Tirana) finalized in 2016 was put into regular operation in December 2020 upon the commencement of implementation of the agreement for Secondary Frequency/Power Regulation between KOSTT and TSO of Albania for operation as a regulatory area/block within ENTSO-E.

The transmission network of the Kosovo power system meets the local transmission needs as well as the N-1 criterion, except for the line Prizren 2 - Rahovec which remains with radial supply.

The following tables show the transformation capacities and transmission network lines according to the voltage level:

Tab. 6.10 Substations at the Transmission System

Transformation (kV/kV)	Owner	No. of SS	No. of TR	Power (MVA)
400/220	KOSTT	1	3	1200
400/110	KOSTT	2	4	1200
220/110	KOSTT	3	9	1350
220/35	Feronikel	1	2	320
220/35/10(20) (Besiana)	KOSTT	1	1	40
220/10(20) (Besiana)	KOSTT	-	1	40
220/10(20)	KOSTT	1	2	80
110/35/10(20)	KOSTT	6	7	277,5
110/35/6.3	Trepça	1	2	126
110/6.3	Trepça	-	1	31,5
110/35	Ujmani	1	1	20
110/6.3	Sharri	1	2	40
110/10(20)	KOSTT	16	26	949,5
110/35	KOSTT	11	19	641
110/10	KOSTT	6	8	252
35/110 (Deçan)	Kelkos	-	1	40
Total		51	89	6 608

Tab. 6.11 Transmission network lines

Voltage (kV)	Owner	Length (km)
400	KOSTT	279,5
220	KOSTT	238,5
110	KOSTT	892,5
Total		1 410,5

The following scheme presents basic information on the number of substations (SS), transformers (TR) and transformer power (VA), line length, and the power plants connected at the relevant voltage level.

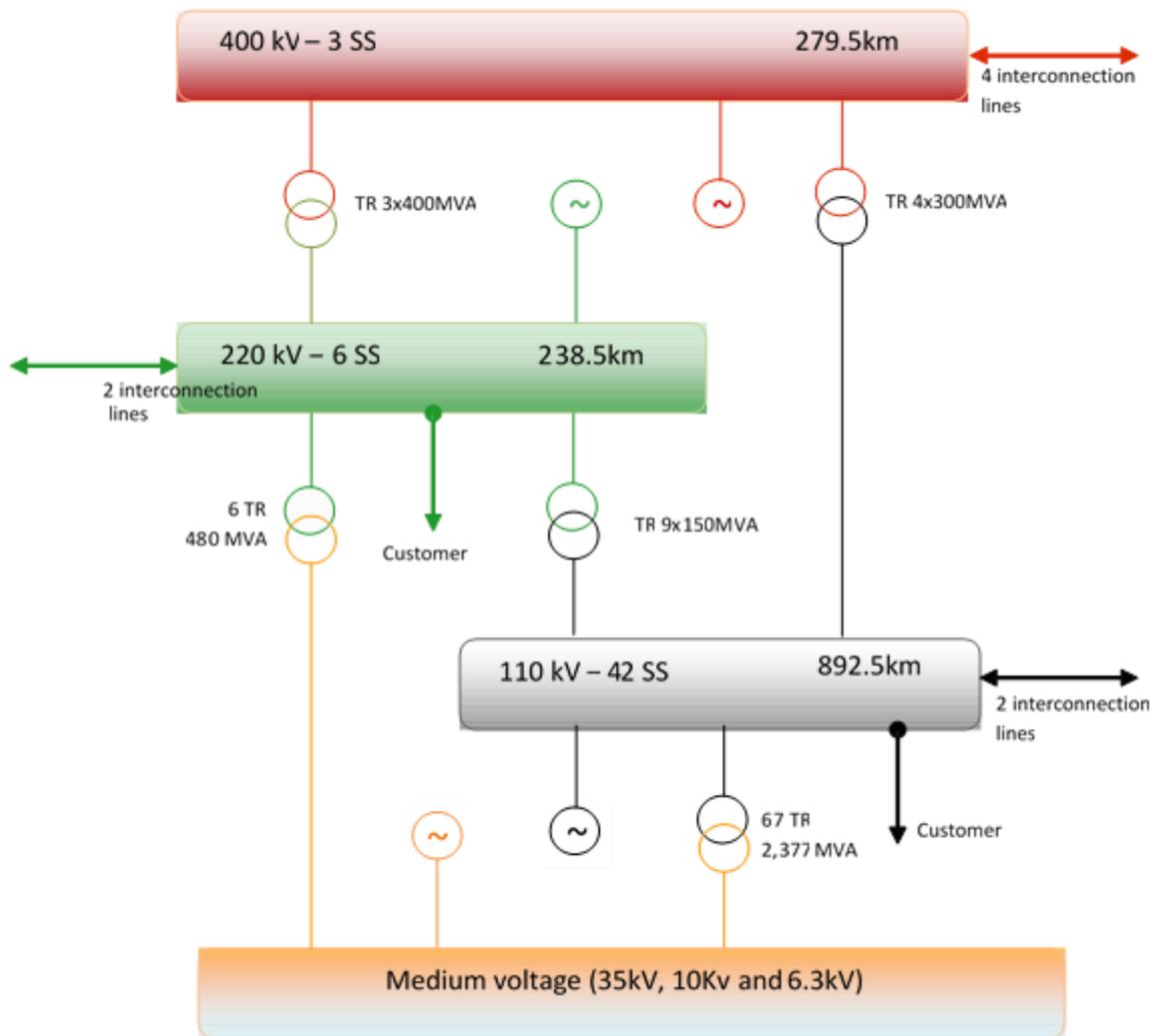


Fig. 6.7 The basic data of transmission network

6.4.1 Electricity flows in the transmission system

The transmission system in Kosovo is well interconnected with the regional and European system through interconnection lines with neighbouring countries and has sufficient capacity to cope with the energy flows in the system, to cover customer demand from domestic production and imports but also for eventual exports of electricity surpluses, as well as for energy which transiting from other countries.

It should be noted that the transit of electricity charges the network by increasing losses, network amortization, as well as the need for maintenance of the transmission network, for which the operator is compensated through the ITC Mechanism. Electricity transit in Kosovo network in 2020 was 1,918 GWh or about 31.1% compared to demand.

The figure below shows the energy flows through all interconnection lines in both directions (entry, exit).

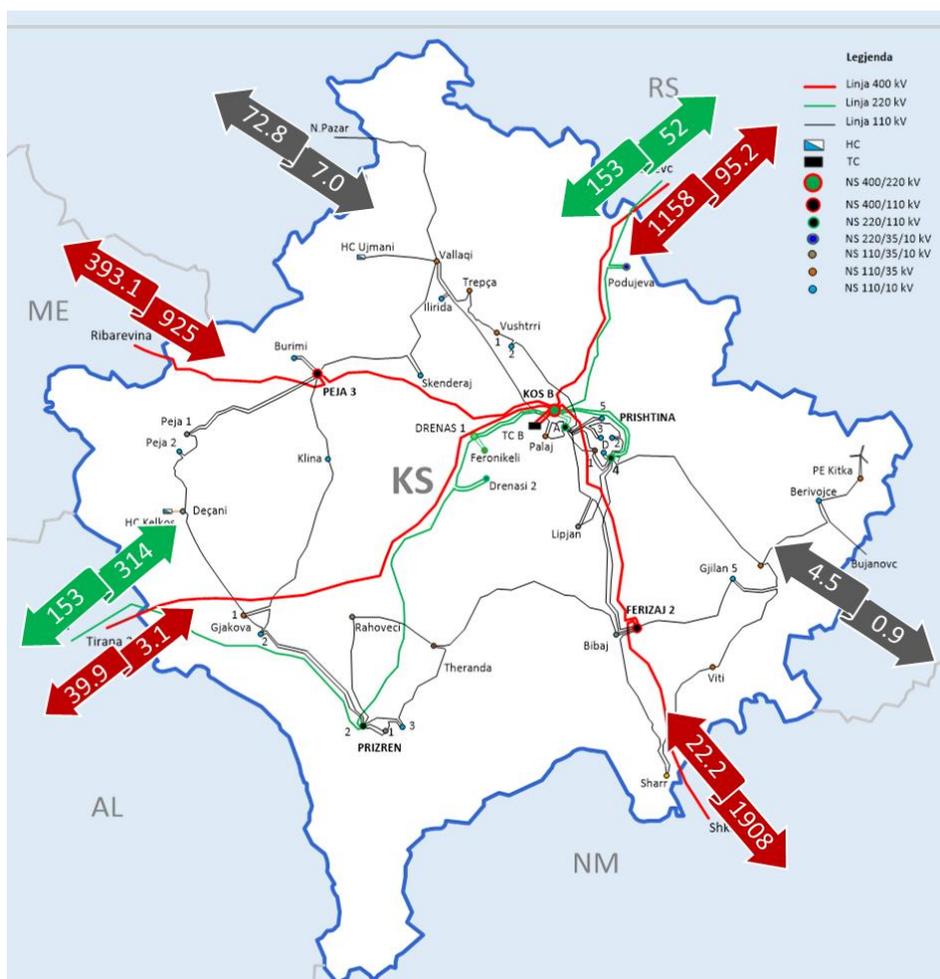


Fig. 6.8 Energy flows through interconnection lines

6.4.2 Investments in the transmission system

During 2020, investments were made in the transmission network mainly to support load and generation. Below are the main projects divided into:

Projects completed in 2020 which have one-year warranty period

Management of the projects, which are ongoing of the EBRD project group and were completed in 2020:

Due to delays in obtaining construction permits there are delays in the implementation of projects based on the contract.

The continuity of works is until Q2 2021 for the projects:

- 110 kV single air line SS Rahoveci – SS Theranda has been completed,
- 110 kV double line and cable line, SS Fushë Kosova is expected to be completed in Q2 2021,

Projects that started in 2018/2020, are being implemented and are ongoing, and should be completed in 2022

The projects financed by KOSTT, are presented below:

- Works on connection of water and sewerage to the city network in **SS Prizren 1, SS Prizren 3, SS Lipjan, SS Viti, SS Ferizaji 1 (ongoing for other SS)**;
- Renovation of Command Buildings in: - SS Deçani, **SS Lipjani, SS Burim**, SS Viti, - SS Prishtina 3, **SS Prizren 3, SS Gjakova 2, SS Besiana and SS Vitia, SS Gjakova 1 (ongoing for other SS)**;
- Supply of spare parts for lines, hangers and clamps, OPGW, joint-box and other accompanying equipment;
- Supply of spare parts to substations;
- Supply of 20 pieces of Meter Data Collection equipment for 110/x kV distribution substations;
- SS Prishtina 4- Rehabilitation of Personal Consumption, AC/DC Cabinets, Cables
- Rehabilitation of AC 400V alcoves;
- Supply and installation of signal signs of lines according to the request of Civil Aviation;
- Supply and installation of UPS in the central building of KOSTT;
- Realization of uninterrupted supply of infrastructure for safe operation of the real-time transmission system of the OS.
- Inclusion of new substations in the SCADA / EMS system in QND and QEND;
- Microsoft licenses and IT system migration;
- Hardware supply.

6.4.3 Maximum loads and electricity demand in the power system

In order to analyse the functioning of the power system, the value of maximum load (peak) is also important, and this usually takes as a sample five (5) maximum loads realized in different hours and different days of the year. The following table shows the maximum load (peak) values for 2020.

Tab. 6.12 Values of maximal loads (peak) in 2020

Maximal Load Pmax (MW)	Date	Hour
1 249	21.12.2020	11
1 239	19.12.2020	18
1 231	31.12.2020	19
1 228	27.12.2020	23
1 207	24.12.2020	23

The maximum load in the Kosovo power system was recorded on 21 December 2020 at 23:00 am in the amount of 1,249 MW, which is a bit lower than the maximum load in 2019, in an amount of 1,253 MW.

Demand varies in daily and seasonal periods, and the summer peak was 973 MW, whereas the summer minimum was recorded on 09 August 2020 at 04:00 in an amount 288 MW.

As mentioned above, due to the inflexibility in the energy system and especially the inflexibility of the existing thermal power plants, there are cases when on the same day, even at the same hour we have imports and exports of electricity. But, generally within the same day, in daylight hours (high tariff) the production does not cover the demand and electricity needs to be imported, while at night (low tariff) there are surpluses of electricity which must be exported.

The diagram below shows the average per hour of demand, production and exchange of electricity, which shows their relation during different daily periods.

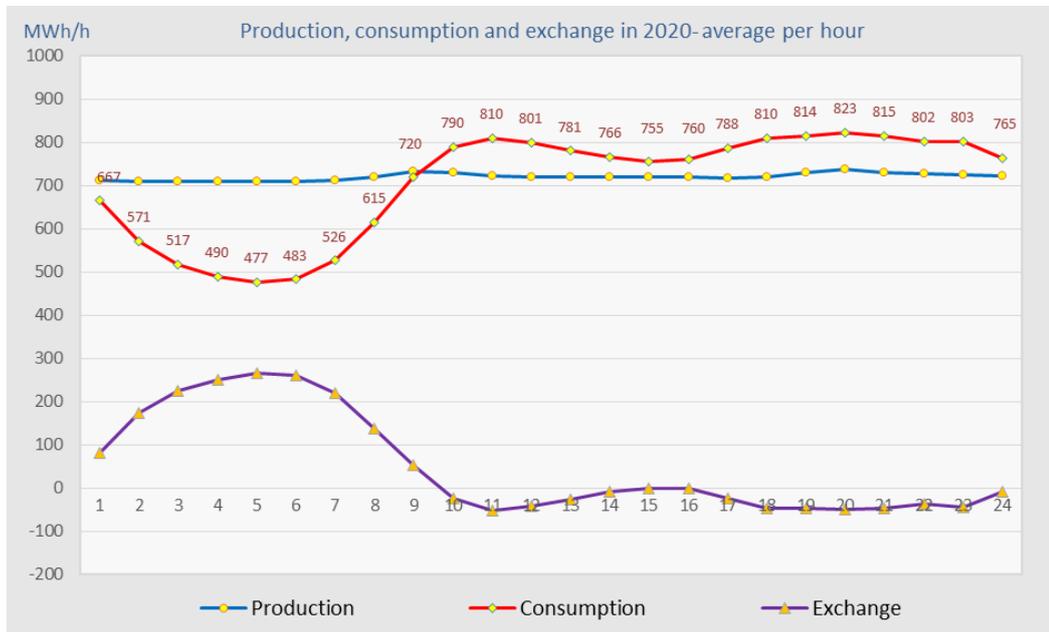


Fig. 6.9 The daily chart as an annual average for hours for 2020

The difference between the average of maximum and minimum daily consumption, during the months of 2020 is shown in the chart below.

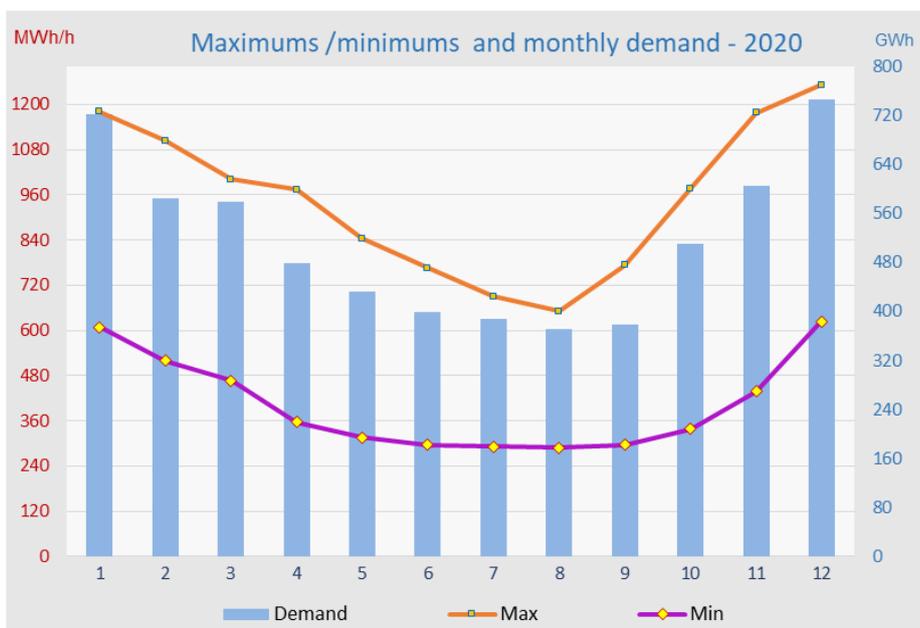


Fig. 6.10 Monthly average of the demand and maximum/minimum daily loads in 2020

Outages due to the lack of electricity

Based on the reports of the operators, during 2020 there were no power outages due to the lack of energy.

It should be noted that the Board of ERO at the end of 2018 has issued a decision to prohibit outages due to the lack of energy, except in cases when plants are jeopardized.

As it can be seen from the diagram below, despite efforts to eliminate supply outages due to electricity shortages, there have been outages over the years, but have decreased significantly in recent years with no outages being reported in the last two years.

The figure below presents outages due to the lack of electricity through years.

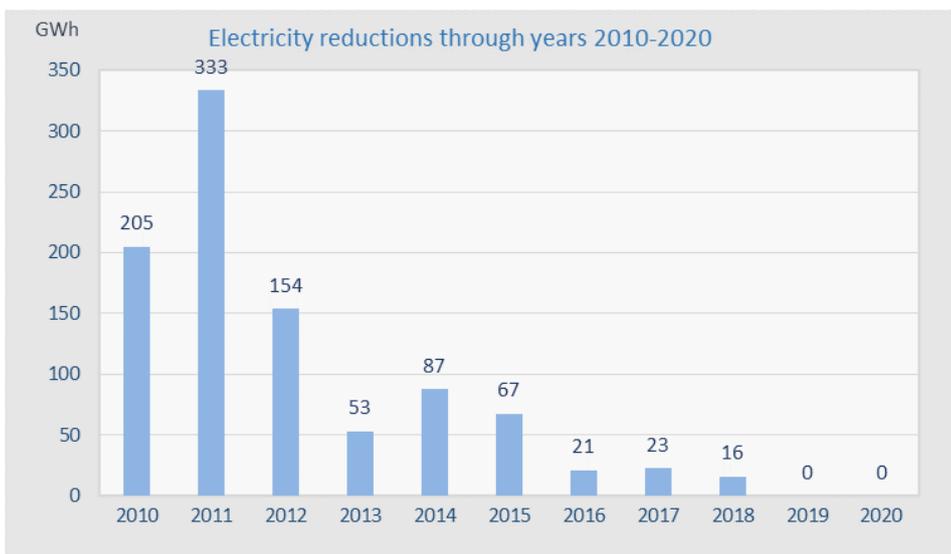


Fig. 6.11 Consumption outages through years 2010 - 2020

6.4.4 Electricity demand and transmission system losses

The total electricity demand in 2020 was 6,167 GWh and represents an increase of 2.8 % compared to 2019, which was 6,001 GWh whereas compared to the forecast of Electricity Balance for 2020, the electricity demand is 3.71% lower.

Table 6.13 shows the total demand and transmission losses realized in 2020 and compared to Electricity Balance 2020.

Tab. 6.13 Overall demand and transmission losses in 2020

2019	Gross demand- Realization	Gross Demand- Balance	Ratio realization/ba lance	Transmission losses- Realization		Transmission Losses- Balance	
	MWh	MWh	%	MWh	%	MWh	%
January	714 797	723 741	98,76	13 542	1,89	13 637	1,88
February	582 624	609 366	95,61	10 617	1,82	11 620	1,91
March	583 109	592 801	98,37	9 792	1,68	10 177	1,72
April	486 813	485 032	100,37	7 638	1,57	8 683	1,79
May	442 828	469 162	94,39	6 721	1,52	8 420	1,79
June	402 453	416 016	96,74	6 263	1,56	7 571	1,82
July	376 035	438 532	85,75	6 222	1,65	8 346	1,90
August	367 493	454 815	80,80	6 836	1,86	8 605	1,89
September	372 688	429 290	86,81	6 785	1,82	8 003	1,86
October	502 963	493 611	101,89	8 503	1,69	8 902	1,80
November	597 388	568 768	105,03	10 284	1,72	10 099	1,78
December	737 548	722 906	102,03	14 134	1,92	12 944	1,79
Gjithsej	6 166 739	6 404 043	96,29	107 335	1,74	117 005	1,83

The electricity demand has been steadily rising until 2011, whereas starting from 2011 the demand is stabilized, with small fluctuations from year to year, and in the last year there is an increase which can be seen in the figure below.

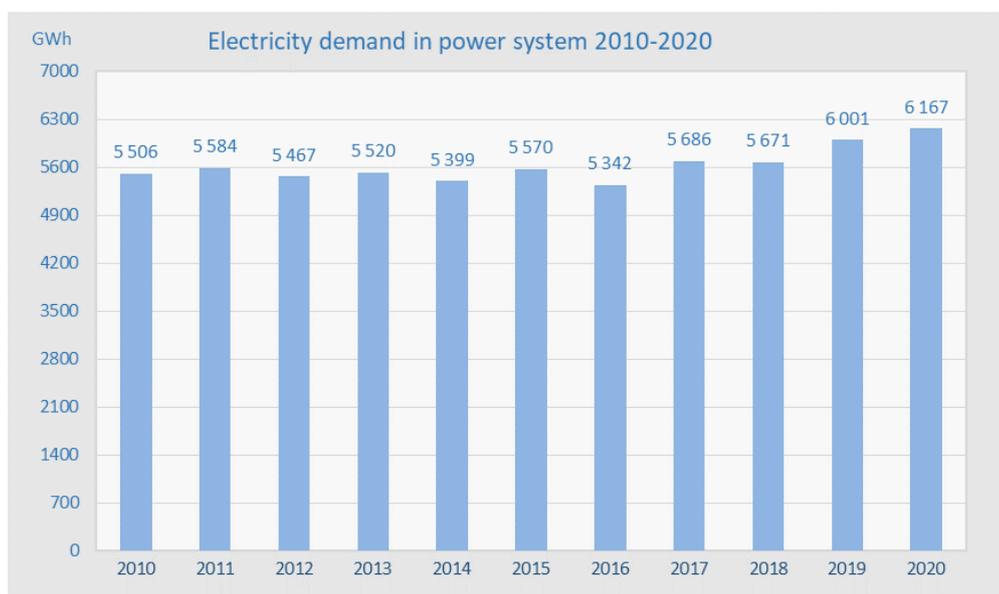


Fig. 6.12 Overall demand in the power system 2010-2020

The total electricity demand is divided into the consumption of customers connected to the transmission network, consumption in the distribution system (including losses), own-consumption for generation plant needs, and transmission losses, as shown in the table below divided by categories for 2020.

Tab. 6.14 The demand by categories and energy losses

Electricity Demand 2020	Total
	MWh
Gross consumption in distribution*	5 549 466
Unregulated customers	396 124
KEK's internal consumption	113 814
Transmission Losses	107 335
Overall Demand	6 166 739
Own-expenses of KEK from transmission	146 295

(*) Electricity received in distribution from transmission + generation in distribution.

Electricity received from the transmission network for own consumption for the needs of power plants in 2020 was 146 GWh, of which 108 GWh for generators of TPP Kosova A and 37 GWh for TPP Kosova B.

Electricity demand varies according to the consumption period but also according to customer categories, and this is shown in the following table, including the losses in the transmission and distribution network (technical and commercial losses).

Tab. 6.15 Share of different categories in the overall demand 2020

2020/GWh	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Household consumption	2 778	327,9	244,5	252,5	235,8	200,6	182,3	176,5	179,3	168,6	210,5	257,6	341,7
Commercial consumption	963	102,3	87,5	66,6	49,2	63,5	73,7	79,2	77,9	75,7	89,5	86,6	111,3
Industrial consumption	796	75,3	68,6	73,3	68,4	72,6	69,5	42,6	41,2	50,2	74,0	75,9	84,0
Commercial losses	712	87,4	92,2	102,7	62,9	47,1	26,9	27,0	19,7	27,4	58,5	87,6	73,2
Technical losses	697	96,9	69,3	67,5	52,4	42,3	36,1	37,0	35,1	35,8	52,9	68,7	102,9
Transmission losses	107	13,5	10,6	9,8	7,6	6,7	6,3	6,2	6,8	6,8	8,5	10,3	14,1
KEK Int. Con.	114	11,5	10,0	10,7	10,5	10,0	7,8	7,6	7,5	8,2	9,1	10,7	10,2
Total	6 167	714,8	582,6	583,1	486,8	442,8	402,5	376,0	367,5	372,7	503,0	597,4	737,5

The electricity demand, presented in table 6.15, varies by months, and in some categories this change is quite noticeable, such as. household consumption and commercial losses that are higher in the winter season, which is mainly due to the use of electricity for heating.

The losses in the transmission system are at an acceptable level owing to the investments made by KOSTT and are approximately at the same level as the losses in the transmission networks in the region and Europe.

Figure 6.15 shows the share of losses in the transmission network towards the overall demand of the Kosovo power system.

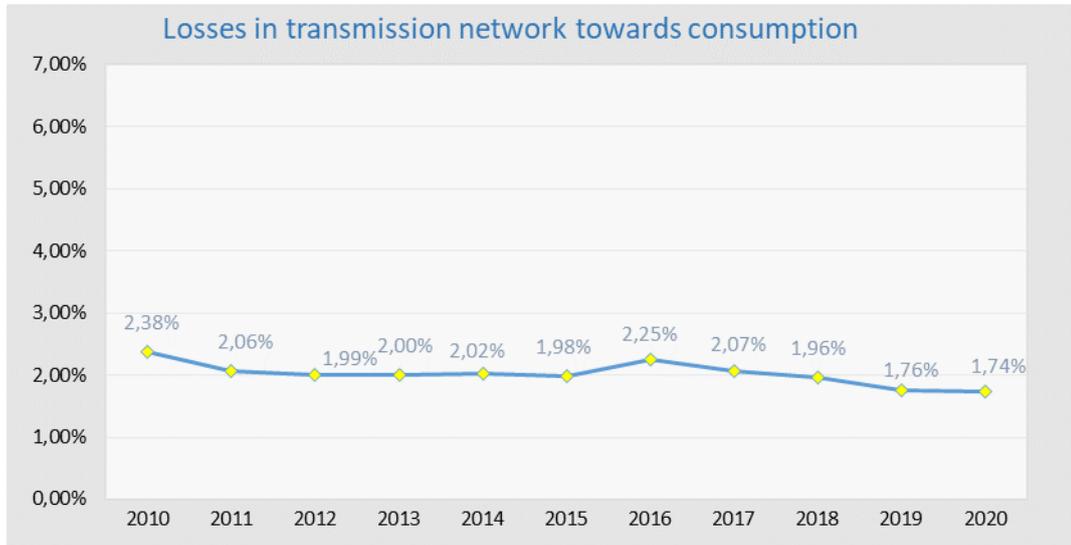


Fig. 6.13 Share of losses in transmission network 2010-2020

The losses shown in the figure above present the share of losses calculated towards the domestic demand whereas the level of transmission losses is affected by all the energy entered into the transmission system. Therefore, in order to calculate the share of losses towards the transmission network load, other sources, such as transit, as well as energy for generators own costs, should be included in addition to domestic demand. The share of transmission losses calculated in this form is 1.18%.

6.5 Electricity Distribution System

The distribution network, as a regulated energy activity, is responsible for the operation and maintenance of the distribution system and the management of the generators connected to the distribution system.

Distribution network consists of voltage lines of 35 kV, 10(20) kV, 6 kV dhe 0.4 kV, as well as relevant substations of the level 35/x kV, 10(20)/0.4 kV and 6/0.4 kV.

Basic data of substations and lines, including capacity, transformation and length of lines of distribution system are presented in the tables below.

Tab. 6.16 Substations and transformers by voltage level at DSO

Transformation (kV/kV)	Owner	No. of SS	No. of TR	Installed Capacity (MVA)
35/10	KEDS	44	94	662
35/10	Privat	11	15	68
35/20	KEDS	2	5	41
35/6 kV	Privat	5	8	43
35/0.4kV	Privat	17	23	22
10(20)/0.4	KEDS	2 511	2 606	1 329
10(20)/0.4	Privat	2 582	2 592	1 254
10/20	KEDS	1	1	109
10/0.4	KEDS	2 865	2 865	868
10/0.4	Privat	1 247	1 253	606
6(3)/0.4	KEDS	66	66	13
6/0.4	Privat	1	1	1
Gjithsej		9 353	9 530	5 017

Tab. 6.17 Lines at DSO

Voltage (kV)	Owner	Aerial Network (km)	Cable Network (km)	Total (km)
35 kV	KEDS	482	137	619
10(20) kV	KEDS	1 536	521	2 057
10 kV	KEDS	4 165	904	5 069
6 kV	KEDS	42	8	50
3 kV	KEDS	4	1	5
0.4 kV	KEDS	17 484	2 561	20 045
Gjithsej		23 713	4 132	27 845

The scheme below presents basic information on the number of substations (SS), transformers (TR) and transformer power (VA), line length, and the plants connected at the relevant voltage level.

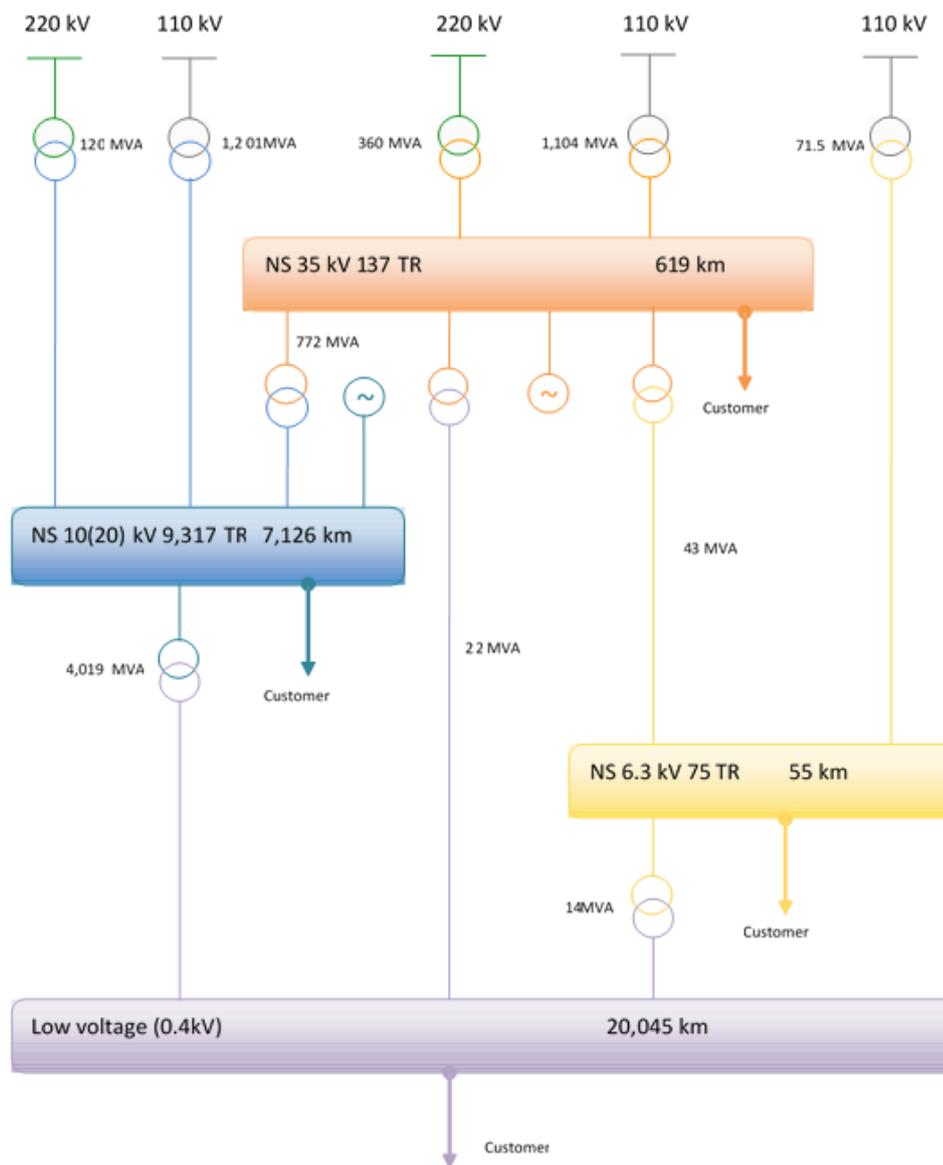


Fig. 6.14 Basic data of the distribution system

6.5.1 Investments in the Distribution System

The Distribution System Operator continuously invests in the distribution network based on the allocated investment budget approved by the Energy Regulatory Office, and thus increases the operation of the distribution system to provide reliable electricity supply, as well as increase of existing network capacity. Investments include projects in the medium and low voltage network as well as projects in the digitalization and modernization of the network such as SCADA, smart PLC meters, etc.

The realization of investments of 2020 includes projects that are planned for 2020 and projects which are realized and planned within the scope of previous years. Projects are selected by analyzing the need for investment in the most critical areas by evaluating them through priority criteria to achieve key investment objectives, such as:

- Reduce of technical and commercial losses;

- Reliable and qualitative supply of electricity;
- Increase of the existing network capacities and network modernization.

The projects were selected by analysing the technical criteria such as: losses, network load, voltage failures, number of outages, energy demand, consumption increase, network aging and number of customers.

In addition to the implementation of medium voltage projects from previous years, medium voltage projects of 2020 were directed to the most critical areas such as Pristina, Drenas, Dragash, Lipjan, Viti, Gjakova, Kline, Peja, Suhareka, Prizren, etc. These projects were implemented to solve the problems of rapid consumption growth, network overload and improvement of other technical parameters. Some of these projects were intertwined with the urban plans of the municipalities of the Republic of Kosovo.

Reinforcement projects in the low voltage network are focused in Prishtina, Drenas, Podujeva, Fushë Kosovë, Besi, Deçan, Mitrovica, Dukagjini area, and in some other municipalities such as Kamenica, Viti, Gjilan, etc. In LV projects, despite investments in the 0.4 kV voltage level, the medium voltage network has also been strengthened in accordance with future exit plans. In the investments in MV and LV all lines have been changed as well as substations and other equipment that did not meet the technical criteria. These projects aim to improve the level of voltage and quality electricity supply.

Investment projects 2020

2020 investment projects are presented in two parts, as "*Projects within the scope of previous years continued/completed in 2020*" and "*Investment projects planned for 2020*".

It is important to note the impact of COVID-19 pandemic on the implementation process of investment projects for 2020 which has caused the planned target for project completion to be delayed.

Projects within the scope of previous years completed in 2020

They include medium voltage projects (at 10 kV and 20 kV) and low voltage projects of previous years which were in the process of implementation during 2020.

Investments in 10 kV exits

The project: Investment in 35kV and 10 kV in Ferizaj (Planned year: 2019)

New 35 kV lines are planned between HV/MV and MV/MV substations, as part of emergency investments, thus creating a ring topology in the 35 kV network. Also, there will be interventions in the 10 kV exits, thus creating a ring topology in the 10 kV network. The total number of customers who will benefit from the investment is 23,283. Projects at the 35 kV level have been completed during 2020, while at the 10 kV level a large part of the projects have been completed during 2020 and are expected to be completed in the first quarter of 2021.

Conversion of exits at 20 kV voltage level

Project: Investments in 20 kV network in Fushë Kosovë (Planning year: 2019)

To respond to the demand of increased load in Fushë Kosovë/Kosovo Polje, KEDS has planned the network at the level of 35 kV in support of future load. The increase in the number of 35/10 (20)

kV transformers in the existing substation of Fushë Kosovë did not support the expected load according to the energy approvals, therefore the new 35 kV lines and two new 35/20 kV substations were added in the city center. The 10 kV exits are planned to be converted to the voltage level of 20 kV, using the topology of rings between substations. 15,134 customers will benefit from this project. Projects at the 35 kV level, as well as at 20 kV, are expected to be completed in the first quarter of 2020.

Investments in low voltage network

Some low voltage (LV) projects have been transferred from other years to 2020. The implementation of these projects has started in the planned year, but due to some obstacles and difficulties these projects have been completed in 2020 or are still in process.

The number of projects transferred from previous years in 2020 is 148, and 5 projects have been completed.

Planned investment projects in 2020

Investments in medium voltage network (MV)

In 2020, medium voltage projects were directed to the most critical areas such as Prishtina and Drenas to solve the problems of rapid consumption growth, network overload and improvement of other technical parameters. Investments include conversion projects at the 20kV voltage level.

Project: Investments in 20 kV network in the center of Prishtina (planning year: 2020)

In 2020, KEDS was in the process of investing around 17 million euros for the Prishtina network. With the Investment Projects of 2020 in Prishtina, the exits are planned in a new topology which will operate at the voltage level of 20 kV. The purpose of these investments is topological rehabilitation, design of alternative supply exits, network reliability, reduction of energy losses and improvement of supply quality. Moreover, KEDS will solve the problem of loads at problematic exits by doubling the capacity of the lines and balancing the load on the exits, in which case 81,825 customers will benefit.

In Prishtina, Mati - Aktash – Neighbourhood of Muhaxhers – Sunny Hill - Kodra e Trimave - Çamëria - Taslixhe - Qafa Neighbourhood- Arbëria - Tophane - Sofia are the areas included in KEDS investments for 2020. A total of 94 exits are supplied by substations Prishtina 2, Prishtina 3, Prishtina 5 and Prishtina 7 110/10 (20) kV and all have radial configuration.

The exits included in the 20 kV conversion are supplied by:

- SS Prishtina 2 110/35/10 kV
- SS Prishtina 3 110/10 kV
- SS Prishtina 5 110/10 kV
- SS Prishtina 6 110/10 kV
- SS Prishtina 7 110/10 kV

2020 investment projects in Prishtina are still in the process of implementation.

Project: Investments in 20 kV network in the center of Drenas (planning year: 2020)

In recent years KOSTT has built a new substation (2x40 MVA) in Drenas and supplies a total of 11 exits at the voltage level of 10 kV. Through the investment projects of 2020 in Drenas, the exits

are planned in a new topology that will operate at the voltage level of 20 kV. The purpose of these investments is topological rehabilitation, design of alternative supply exits, network reliability, reduction of energy losses and improvement of supply quality. Furthermore, KEDS will solve the loads at the problematic exits by doubling the capacity of the lines and balancing the load on the exits. 10,666 customers will benefit from medium voltage projects in Drenas.

Investments in low voltage network

Investments in low voltage in the Investment Plan 2020 were realized in the regions of Prishtina, Drenas, Podujeva, Fushë Kosovë, Besi, Deçan and Mitrovica. The total number of projects in the LV network reaches 181 including 21,136 customers.

The identification of the most urgent projects was carried out by analysing the technical criteria such as: losses, network load, voltage failure number of outages, network aging and number of customers.

Investments made in low voltage projects include:

- New transformers in areas that need investment,
- Replacement of existing transformers with new ones to increase capacity,
- Rehabilitation of low voltage network,
- Reinforcement of the medium voltage network within the scope of LV projects, in accordance with the future plans of MV exits,
- Placement of MMOs, which means moving the meters out on the pole or in the ground cabinet of the meters,
- Connecting customers to meters located outside the house.

In conclusion, for all investments of 2020, including investments transferred and planned in 2020, in the MV and LV network, the following materials have been used:

Tab. 6.18 Lines at DSO

Type of material	Amount	Unit
Transformers	218	piece
Pillars	10,044	piece
Meter box	7,682	piece
LV Panel	148	piece
Kiosks	26	piece
Alcoves	429	piece
Cables	1,201,429	m
Conductor	304,789	m

Investments from the System Operation Department during 2020

Projects and works carried out during 2020 by the System Operation Department

The investment projects of 2020 are presented in two parts, as the projects at the medium voltage level 10 (20) [kV] and the projects at the low voltage level at 0.4 [kV]. The classification of these projects is made by the nature of the project, 10 [kV] projects include:

1. Displacement and new network in medium voltage network;

2. Establishment of new lines;
3. Investments in distribution plants for easier operation, etc.

0.4 [kV] projects include:

4. Reconstruction of low voltage network;
5. Displacement and installation of SS 10/0.4 [kV]
6. Implementation of smart PLC meters etc.

The first part of 2020 is characterized more by investments in 0.4 [kV] projects, where the reconstruction of the low voltage network and other works in these projects has been carried out. While the second half of the year is mainly related to investments in medium voltage, respectively 10 [kV] exit discharges, distribution facilities, creation of new lines, also at the end of the year was intervened in discharge of overloaded exits 0.4 [kV] and in change of overloaded transformers.

Investments in 10 kV projects

During 2020, the System Operation Department, owing to the implementation of 10 [kV] projects, has invested in new lines, and also invested in discharging overloaded 10 [kV] exits and relocating the network. Based on the urban plans of municipalities, new distribution facilities have also been established which facilitate the operational work.

New segments 10(20) kV

Project: LP 10 [kV] Kabashi - where the length of the new electrical network is about 6.1 km.

Project: LP 10 [kV] Shiroke-Sopije- a new line with a length of about 1.2 km has been built from the village of Shiroka to the village of Sopija and 3285 customers have benefited from this investment.

Project: LP 10 [kV] Restelica - the outdated network with wooden poles and difficult mountainous terrain was eliminated, where the new network was implemented along the road, with segment length of about 5.1 km long; around 3,409 customers benefited from this investment.

Project: LP 10 [kV] Bablaku-Businesses has supplied 66 substations 10/0,4 [kV] and the majority of these substations 10/0.4 [kV] were of businesses, whereas the length of this line was about 55 km. Through this investment which has been made from the village of Tern to SS 35 [kV] Ferizaj II, businesses have been separated from household customers, a completely new segment has been worked with a length of about 4.5 km. About 1539 customers have benefited from this investment.

Project: Magure 10 [kV] cable line was completed in 2020 and the main beneficiary was the Police of the Republic of Kosovo in Magure.

Projekti: Linja 10 [kV] në Studenqan - Project: 10 [kV] line in Studenqan - the construction of a new aerial segment with a length of about 1.45 km was carried out, where a part of 370m was terrestrial. Around 2244 customers have benefited from this investment.

Discharges of 10 kV exits

The System Operation Department, in addition to working on the establishment of new 10 [kV] lines, has also worked on discharging existing exits between the creation of segments and supply rings.

Project: Discharge of the 10 [kV] exit Rexhep Bislimi - was implemented in the extension of the 10 (20) kV terrestrial cable to a length of 2428 [m], in which case the load that was at one exit was distributed to the new exit. 4055 customers have benefited from this project, which was completed in the second half of 2020.

Project: Discharge of the exit of Viti - a new segment has been built in the Business part, where Kufce Exit has been discharged and the quality electricity supply was provided to the customers and businesses of that area.

Project: Discharge of the exit of Dubrava - a project has been implemented which has discharged the load by dividing the load even with the exit of Tomoc from SS Gurakoci and Mostjiri from SS Istogu. This investment was completed in 2020.

Project: Discharge of Ekstras exit - This has been necessary due to exit overload, which Pmax has exceeded 6 MW. In 2020, the cable was laid at a length of 3150 m using the existing canal. The load of this exit is distributed to the uncharged Businesses exit and narrow barriers were eliminated.

Project: Discharge of Jagoda exit - it was invested in the MV network by passing some substations 10/0.4 [kV] with the Leshan exit, the load balancing has been done in these two exits, i.e it has improved the electricity supply to 561 customers. This project was completed in 2020.

Project: Discharge of the exit of Klina 3 - there were investments in a new line which has enabled a part of the cargo to pass with the exit of Dresnik from SS Istog, in which case 2199 customers have benefited. The investment was made by laying a terrestrial cable in MV with free extension along the river.

Project: Discharge of J35 Veterniku 2 exit - this exit is overloaded and often affected by breakdowns, therefore also taking into account that it supplies an industrial-business area (Veternik-Qagllavie), DSO has worked by investing in the laying of a new cable in MV in the segment from the bridge in Veternik to the overpass in Llapnasell. 1299 customers have benefited from this investment.

Relocation of 10 kV lines

Project: Relocation of LP 10 [kV] Gjakove-Prizren - these investments were made in 2020, and were requested by Municipalities or even the Ministry. The Municipality of Gjakova has invested in the cable channel while KEDS in the supply of ground cable 150 [mm²]. The lines, which were of MV and LV with Al/Fe and plait cable, were eliminated from the road by replacing them with terrestrial cable throughout the entire length, while the LV lines were realized partly with underground cable and in air line.

Project: Relocation of LP 10 [kV] Prugovci- the segment at Berishet - is dislocated along the road lane because the existing condition of the network has posed a general risk to the neighbourhood along the route near the LP. With this investment completed in 2020, the

breakdowns have been reduced by eliminating a highly depreciated network with a length of *650 meters*.

Project: Relocation of LP 10 [kV] Llapushniku- Novoselle segment- the investment in LP has been realized for a length of *1.2 km*, where about *100 customers* have benefited by eliminating the depreciated network and the electricity supply has been stabilized.

Implementation of distribution plants

Project: Distribution plant Shupkovci - has been quite depreciated and very unsafe in operation and has always been the point of short circuit generation in the system. It has been invested by building a new highly functional plant respecting the standards and technical norms in operation and load distribution as well as monitoring-control with SCADA system. This investment was completed in 2020.

Project: Distribution plant- Radavc –has been invested in the placement of the distribution plant at the exit of Radavc, creating the possibility that the area which is most affected by the breakdown to be located automatically, as well as to enable safe operation under load in case of breakdowns or planned works in the MV network. This investment was realized in 2020.

Investments in 0.4 projects [kV]

Investments in low voltage in the investment plan 2020 were directed to regions such as: Podujevë, Klinë, Istog, Suharekë, Gjakovë, Skenderaj, Viti, etc., and the total number of projects is **112**.

The identification of the most urgent projects was carried out by analysing the technical criteria such as: losses, network load, voltage drops, number of outages, network aging, as well as the number of customers.

Investments in low voltage projects include:

1. New transformers in areas in need of investment;
2. Replacement of existing transformers with new ones; for capacity building;
3. Rehabilitation of low voltage network;
4. Reinforcement of the medium voltage network within the scope of LV projects, in accordance with the future plans of MV outputs;
5. Expansion of the MV network for the connection of new transformers;
6. Placement of PLCs, which means moving the meters out on the pole or in the meter cabinets;
7. Connecting the customer to the meters located outside the house.

Realization of PLC projects

To reduce commercial and technical losses during 2020, 33 PLC projects were implemented in seven districts, affecting 4,144 customers.

Projects aimed at improving power flow and improving low voltage drops

Within this work activity, carried out by System Operation Department, the following is realized:

- Installation of new TS with all accompanying elements;
- Extension of the 10 kV network and relocation in some cases;
- Extension of the new 0.4 kV network and improvement of the existing network;

Project: Voltage reinforcement in Bifurkacioni neighbourhood - the reconstruction of the low voltage network has been done, where the whole network with conductors has been replaced with new poles and cable network, the smart PLC meters have also been installed. Around 48 *customers* have benefited from this investment.

Project: Voltage reinforcement TS Planqor- at the Minorities - the low voltage network has been reconstructed. Around 58 *customers* of that part have benefited from this investment.

Project: Voltage reinforcement in Balance - the reconstruction of the entire low voltage network has been completed, the replacement with new poles and cable network has been done, the smart PLC meters have also been installed. Around 135 *customers* have benefited from this investment.

Project: Voltage reinforcement in Begunce –the reconstruction of the low voltage network has been done, where in addition to improving the voltage, the risk for customer of that side was also eliminated. A total of 244 *customers* have benefited from this project.

Project: Voltage reinforcement in Buroje - the voltage has been reinforced and the damaged network has been eliminated, also the smart PLC meters were placed here. A total number of 66 *customers* have benefited from this investment.

Project: Voltage reinforcement in Akrashtice - There have been investments in the low voltage network which has been in poor condition, and the goal of improving the network, eliminating the risk, improving the voltage, etc. has been achieved. In addition to this, smart PLC meters were also placed as part of this project. A total of 68 *customers* have benefited from this project.

Project: Voltage reinforcement in Bernicë e Epërme - the reconstruction of the damaged low voltage network was carried out as well as the reduction of losses and the realization of the installation of smart meters. A total of 72 *customers* have benefited from this project.

Project: Voltage reinforcement in Pirq - works were carried out in low voltage network and medium voltage network, where the existing network with damaged poles and in terrains unsuitable for intervention was eliminated. The bare conductor network has been eliminated and replaced with plait cables. Around 77 *customers* have benefited from this project.

Realization of projects in the installation of new transformers - below are some of the projects completed during 2020, in which the installation of new transformers has been done.

Project: Installation of TS in Cerovik - a new TS was installed due to the overload of the old TS, the low voltage network with a length of 2000m was reconstructed and a considerable number of new concrete pillars were installed. Around 180 *customers* have benefited from this project.

Project: Instalimi of TS in Gjinoc - The transformer was installed with its accompanying parts; this project was developed in cooperation with the charity association "Jetimat e Ballkanit", where the beneficiary in this case was the nursing home in this village of the Municipality of Suhareka.

Project: Installation of TS in Krushë e Madhe - a completely new transformer has been installed along with all the accompanying elements and a new underground network, which will provide the necessary energy capacities for the regular operation of the cooperative "Women of Krusha". This project was completed at the end of the first half of 2020.

Project: Installation of TS in Budakovë - the transformer has been installed, where the medium voltage line was also improved as well as the reduction of voltage drops in this mountainous part of the municipality of Suhareka, therefore the danger for the community from the aging network has also been eliminated. Around 75 customers have benefited from this investment.

Project: Installation of TS in Llaushë-Podujevë –the reconstruction of the low and medium voltage network has been done as well as the installation of smart PLC meters and the new transformer with transformer power of 250 [kVA]. Around 105 customers have benefited from this investment.

Maintenance and rehabilitation of MV and LV - has been one of the main works carried out periodically throughout 2020 in order to improve the electricity supply. In the framework of maintenance and rehabilitation of the network of MV and LV are realized:

1. Replacement of MV and LV poles;
2. Cleaning the route of the MV and LV network as a preventive measure in creating conditions for operation of lines without being affected by external factors such as tree branches, etc .;
3. Replacement of conductors and their tightening, replacement of insulators, overvoltage dischargers, consoles and any other element, which during the preliminary inspection has been destined to fail very quickly and become a source of breakdown;
4. Relocation of 10 and 0.4 kV lines for the purpose of maintenance and easier repair of breakdowns;
5. Reinforcement of the foundations of transformer poles, poles of metal construction;
6. Adjustment of metal constructions of transformer blinds;
7. Replacement of damaged and overloaded transformers;

Cleaning of 6, 10, 20 and 35 kV distribution lines - the road cleaning process of 10, 20 and 35 kV lines has been systematically carried out in order to reduce external factors in causing breakdowns. The project covered the entire territory of the Republic of Kosovo and was concentrated in line segments where it was necessary to clean the lines from vegetation. The cleaning was carried out according to technical norms and during 2020 a total of 461 km were cleaned, of which 24 km of 35 kV voltage lines, 425 km of 10 kV lines and 12 km of 6 kV lines.

Investments in the metering point

The DSO has invested in the installation of new meters, replacing the mechanic ones with digital meters, with the possibility of remote reading. During 2020, there were investments in the following meters:

- 892 meters with direct metering with GSM GPRS communication;
- 14,705 meters with direct metering with PLC;
- 290 meters with semi-indirect and indirect metering, of which 121 are new meters and 169 replaced meters;
- 8,132 mechanical meters were replaced by digital meters;
- 24,298 meters dedicated to new connections.

Investments in SCADA

The SCADA project is planned to be built in three phases. The first and second phase of the project have already been completed, while for the third phase during 2020 all the necessary installations have been made in order to enable the integration of the last 29 substations in the SCADA system:

- In the first phase of the SCADA project, 21 SS were monitored and controlled;
- In the second phase of the SCADA project, 19 SS were monitored and controlled;
- In the third phase of the SCADA project - 29 SS were monitored and controlled.
- SCADA Main Control Center and servers were completed in 2018;
- Integration of DMS/OMS/Call Center/ GIS/CIS is in the process;

With the current situation and the latest installations, the entire distribution network is being monitored, controlled and managed by a single centre professionally.

6.5.2 Consumption and losses in distribution

Distribution energy flows include consumption, technical and commercial losses, which are calculated by district and by month of the year.

The DSO is organized in seven districts: Prishtina, Mitrovica, Peja, Gjakova, Prizren, Ferizaj and Gjilan. Based on the reports from the DSO, the highest consumption was realized in the district of Prishtina with 31% of the total consumption in distribution, while the lowest consumption is in the district of Gjilan with 8.4% of the total consumption.

Distribution energy flows by districts including electricity losses are presented in Table 6.19. Data for the Mitrovica district also include consumption in the northern municipalities, which is calculated in the category of commercial losses.

Tab. 6.19 Consumption and losses in distribution, by districts in 2020

Districts	Load in Districts	Billed Energy	Technical Losses		Commercial Losses		Total Losses	
	MWh	MWh	MWh	%	MWh	%	MWh	%
Pristina	1 722 407	1 382 855	216 404	12,56	123 148	7,15	339 553	19,71
Mitrovica	836 423	360 810	71 850	8,59	403 763	48,27	475 613	56,86
Peja	604 120	445 293	87 420	14,47	71 407	11,82	158 827	26,29
Gjakova	493 209	381 443	82 107	16,65	29 660	6,01	111 767	22,66
Prizreni	694 864	566 202	93 830	13,50	34 832	5,01	128 662	18,52
Ferizaji	729 777	600 043	92 149	12,63	37 585	5,15	129 734	17,78
Gjilani	468 666	403 546	53 154	11,34	11 966	2,55	65 119	13,89
Total	5 549 466	4 140 191	696 914	12,56	712 361	12,84	1 409 275	25,39

Table 6.20 presents the demand (load), billed energy as well as technical and commercial losses in distribution by months.

Tab. 6.20 Consumption and losses in distribution in 2020

Month	Load	Billed Energy	Technical Losses		Commercial Losses		Total Losses	
	MWh	MWh	MWh	%	MWh	%	MWh	%
January	651 441	467 160	96 906	14,88	87 374	13,41	184 281	28,29
February	526 463	365 054	69 254	13,15	92 154	17,50	161 408	30,66
March	522 431	352 254	67 497	12,92	102 679	19,65	170 177	32,57
April	427 306	311 950	52 449	12,27	62 907	14,72	115 356	27,00
May	381 930	292 546	42 330	11,08	47 054	12,32	89 384	23,40
June	349 837	286 855	36 126	10,33	26 856	7,68	62 982	18,00
July	352 658	288 732	36 955	10,48	26 972	7,65	63 926	18,13
August	344 246	289 456	35 125	10,20	19 665	5,71	54 790	15,92
September	339 866	276 702	35 763	10,52	27 401	8,06	63 164	18,58
October	446 852	335 467	52 883	11,83	58 502	13,09	111 385	24,93
November	537 003	380 737	68 679	12,79	87 587	16,31	156 267	29,10
December	669 432	493 277	102 947	15,38	73 208	10,94	176 155	26,31
Total-Realized	5 549 466	4 140 191	696 914	12,56	712 361	12,84	1 409 275	25,39
Total, according to B	5 206 188	4 150 932	658 688	12,65	707 033	13,58	1 365 721	26,23

Technical losses according to the data sent by the DSO reach the value of 12.56%, the aging of the network, length of lines, quality and type of conductors and transformers, loading equipment and maintenance have an impact on the high level of these losses.

Non-technical (commercial) losses, not including losses (consumption) in the four northern municipalities, were 378 GWh and accounted for 6.8% of total distribution demand. Unbilled energy in the four northern municipalities of Kosovo was 335 GWh or 6.03%.

Therefore, the total non-technical losses to the total distribution demand, including the losses in the four northern municipalities of Kosovo, in 2020 were 712.3 GWh, or 12.84% of the total distribution demand.

Total losses in the distribution system are measured and represent the difference between the input energy of the distribution and the billed energy. Since technical and commercial losses cannot be measured separately, then the division of these losses is carried out through the calculation of technical losses through the relevant software, while commercial losses are further calculated as the difference between total and technical losses.

The demand for electricity in distribution in 2020 was realized in the amount of 5,549 GWh, while in 2019 it was 5,321 GWh, which represents an increase of approximately 4.27%.

The demand in the distribution system has a continuous increase, same as as the general demand, and this increase is presented in Figure 6.15, where the data from 2010 to 2020 are presented.

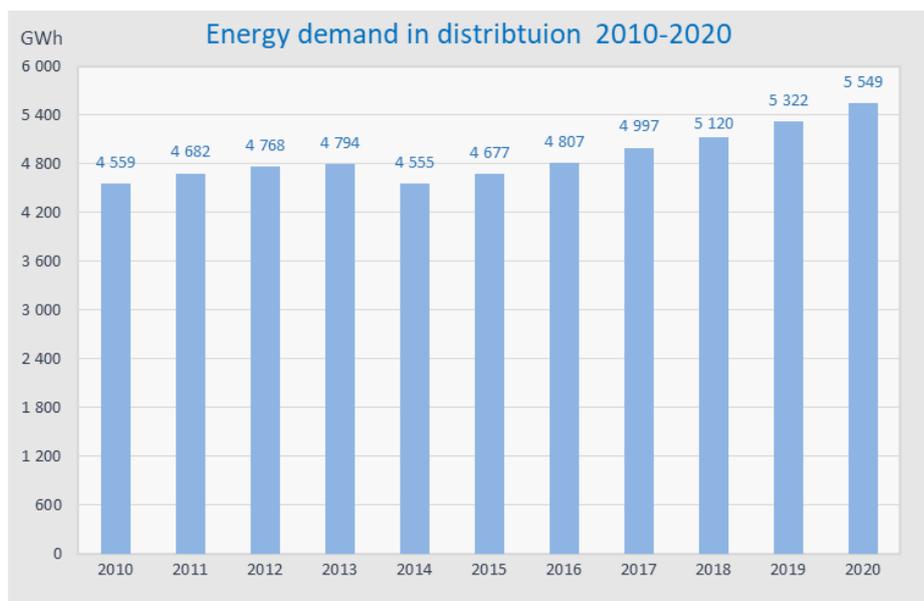


Fig. 6.15 Electricity demand in the distribution system 2010-2020

Despite the investments made so far in the distribution network, electricity losses still remain high and pose a worrying problem for the electricity sector. Losses also have a negative impact on customer supply and the financial viability of supply and distribution operators, as well as the entire energy sector.

The cost of electricity losses up to the level set by the Regulator is covered by the customer tariff. The distribution system operator made continuous efforts to reduce distribution losses, but despite the reduction of losses over the years, the DSO has not managed to meet the targets set by the Regulator, which means that the cost of exceeding these targets is borne by the DSO itself.

Below is the graph with data on technical, commercial losses and total distribution losses from 2010 to 2020, which shows the trend of loss reduction but also fluctuations in the level of technical and commercial losses.



Fig. 6.16 Technical and commercial losses in distribution for the period 2010-2020

In general, electricity losses at DSO, including the losses (consumption) in four northern municipalities have decreased from 25.9% in 2019 to 25.4% towards distribution demand.

6.6 Electricity supply

Electricity supply for final customers during 2020 has continued to be realized by KESCO which is a supplier charged with the Public Service Obligation, supplying customers at regulated prices and customers at unregulated prices for whom a special account has been kept.

The share of household customers in the total billed consumption still remains dominant with about 61.23%, followed by commercial consumption with 20.55%, then by industrial consumption with 17.54%, and finally by consumption in public lighting with 0.68%. Gross demand increased by 2.76% compared to last year, household consumption increased by about 10.43%, while commercial and industrial consumption decreased by 5.95% and 8.92% respectively.

The figure below shows the share of consumption categories compared to total consumption (presented with and without losses).

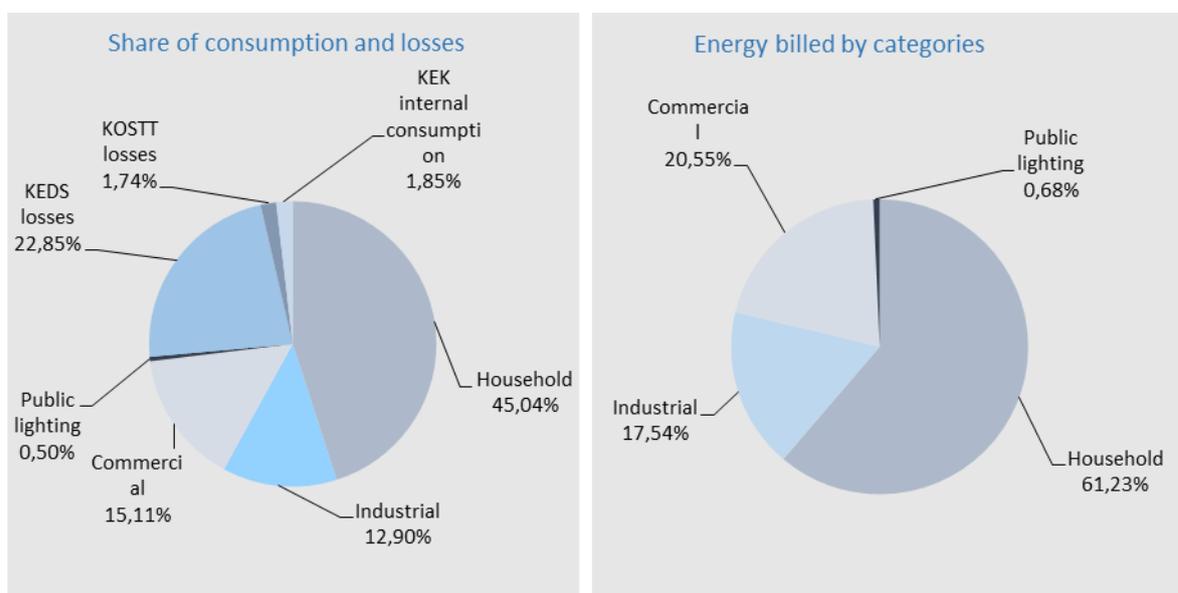


Fig. 6.17 Share of consumption categories – with and without losses 2020

6.6.1 Billing and collection

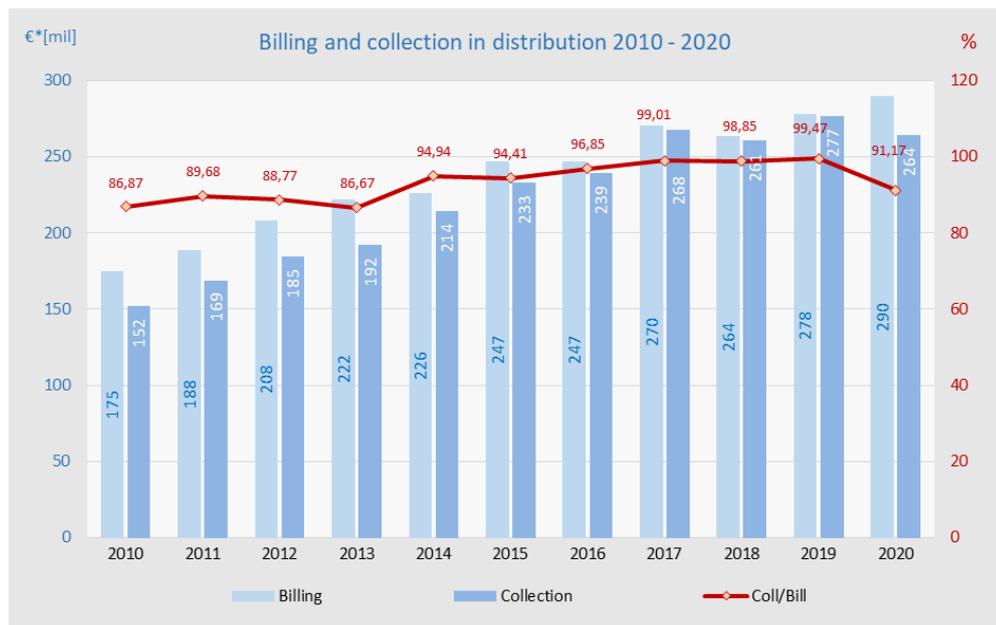
The energy billed in the distribution system in 2020 was 4,140 GWh and represents about 74.6% of the load of the distribution system, which compared to 2019 is higher by 4.9%.

Table 6.20 presents billing, energy collection and gross collection in distribution as well as the ratio between billing and collection for energy by months for 2020, which shows that in some months this ratio is higher than 100%, which means that in these months the electricity billed for the previous months was collected.

Tab. 6.21 Billing and collection by months in distribution for 2020

Shpërndarja 2020	Ngarkesa	Realizimi	Faturimi	Arkëtimi	Ark/Fat
	MWh	MWh	€	€	%
Janar	651,441	467,160	31,569,560	26,123,550	82.7%
Shkurt	526,463	365,054	25,394,037	24,909,645	98.1%
Mars	522,431	352,254	24,015,908	18,874,895	78.6%
Prill	427,306	311,950	21,218,329	17,746,927	83.6%
Maj	381,930	292,546	20,610,263	18,384,979	89.2%
Qershor	349,837	286,855	20,942,030	20,540,620	98.1%
Korrik	352,658	288,732	21,245,161	24,280,514	114.3%
Gusht	344,246	289,456	21,252,698	20,844,704	98.1%
Shtator	339,866	276,702	20,521,321	20,643,870	100.6%
Tetor	446,852	335,467	23,549,000	21,634,161	91.9%
Nëntor	537,003	380,737	26,622,927	21,544,200	80.9%
Dhjetor	669,432	493,277	32,750,527	28,584,239	87.3%
Gjithsej	5,549,466	4,140,191	289,691,762	264,112,305	91.17%

The billed and collected (gross) electricity in distribution as well as the ratio between billing and collection from 2010 to 2020 is shown in the figure below.


Fig. 6.18. Billing and collection in distribution during 2010-2020

The level of collection only for the energy in distribution for 2020 was 91.17%, which is 4.8 percentage points lower than last year as a result of COVID 19, and when the customers connected to the transmission network to whom the collection is 100% are calculated, then the total collection reaches 94.24%.

Consumption categorized by voltage level and groups of customers using electricity for 2020 is given in Table 6.21.

Tab. 6.22 Electricity billed according to tariff categories 2020

Kategorië (GWh)	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
220 kV (Ferronikeli)	318,0	33,5	32,8	33,9	34,5	36,1	31,0	2,7	2,1	11,1	31,8	32,8	35,7
110 kV (Trepça)	21,3	2,0	1,9	1,8	1,7	1,7	1,6	1,8	1,5	1,7	1,8	1,6	2,2
110 kV (Sharrcem)	56,9	2,8	0,8	4,5	5,2	6,4	6,0	5,1	5,4	5,0	4,9	5,0	5,8
35 kV	47,5	3,7	3,3	4,1	3,6	3,8	3,6	4,2	3,9	4,1	4,4	4,1	4,8
10 kV	351,9	33,2	29,9	29,1	23,4	24,7	27,2	28,8	28,3	28,3	31,1	32,4	35,4
Household	2 777,7	327,9	244,5	252,5	235,8	200,6	182,3	176,5	179,3	168,6	210,5	257,6	341,7
0.4 kV I	368,3	33,6	30,0	28,0	21,6	23,8	27,7	30,3	29,4	28,8	39,1	31,6	44,5
0.4 kV II	563,8	65,6	54,6	36,3	25,2	37,6	43,9	46,9	46,4	44,5	47,3	52,0	63,4
Ndriqimi publik	31,0	3,2	2,9	2,3	2,3	2,0	2,1	2,1	2,1	2,4	3,1	3,0	3,4
Total billed	4 536,3	505,5	400,6	392,4	353,3	336,7	325,5	298,3	298,4	294,5	374,0	420,1	537,0
KEK Consumption	113,8	11,5	10,0	10,7	10,5	10,0	7,8	7,6	7,5	8,2	9,1	10,7	10,2
DSO Losses	1 409,3	184,3	161,4	170,2	115,4	89,4	63,0	63,9	54,8	63,2	111,4	156,3	176,2
KOSTT Losses	107,3	13,5	10,6	9,8	7,6	6,7	6,3	6,2	6,8	6,8	8,5	10,3	14,1
Total	6 166,7	714,8	582,6	583,1	486,8	442,8	402,5	376,0	367,5	372,7	503,0	597,4	737,5

Electricity billed in the transmission and distribution system in 2020 was 4,536 GWh, which expressed in monetary value (including VAT) is 309.8 mil €, whereas the gross collection is 291.9 mil €.

The following table presents billing, collection, and the ratio between collection and billing.

Tab. 6.23 Billing and collection in 2020

2020	Load	Realization	Billing	Collection	Coll/Bill
	MWh	MWh	€	€	%
Regulated customers	5 549 466	4 140 191	289 691 762	264 112 305	91,17%
Unregulated customers	418 356	418 356	20 066 906	27 801 482	138,54%
Total	5 967 822	4 558 547	309 758 668	291 913 787	94,24%

Below is a table with data on the number of customers by category, billing and average consumption for metering points by category.

Tab. 6.24 Number of customers and billing according to categories for 2020

Consumption by categories 2020	Metering point (PM)	Total billing	Consumption for PM	Share in consumption
	copë	MWh	MWh	
220 kV (Ferronikeli)	1	317,980	317,980	7.01%
110 kV (Trepça)	1	21,275	21,275	0.47%
110 kV (Sharrcem)	1	56,869	56,869	1.25%
35 kV	36	47,537	1,320	1.05%
10 kV	410	351,852	858	7.76%
Household	537,577	2,777,699	5	61.23%
0.4 kV I	2,695	368,287	137	8.12%
0.4 kV II	85,928	563,790	7	12.43%
Public lighting	2,715	31,026	11	0.68%
Total	629,364	4,536,314	398,462	100.00%

Average price of electricity

The average selling price of electricity is based on tariffs for regulated electricity activities and varies depending on the category of customers, the voltage level to which customers are connected and the use of electricity at different tariffs according to the season and time in which energy is consumed. This average selling price (excluding VAT) is shown in Figure 6.19. The average selling price also varies by district depending on the concentration of commercial/industrial activities that use electricity in certain periods.

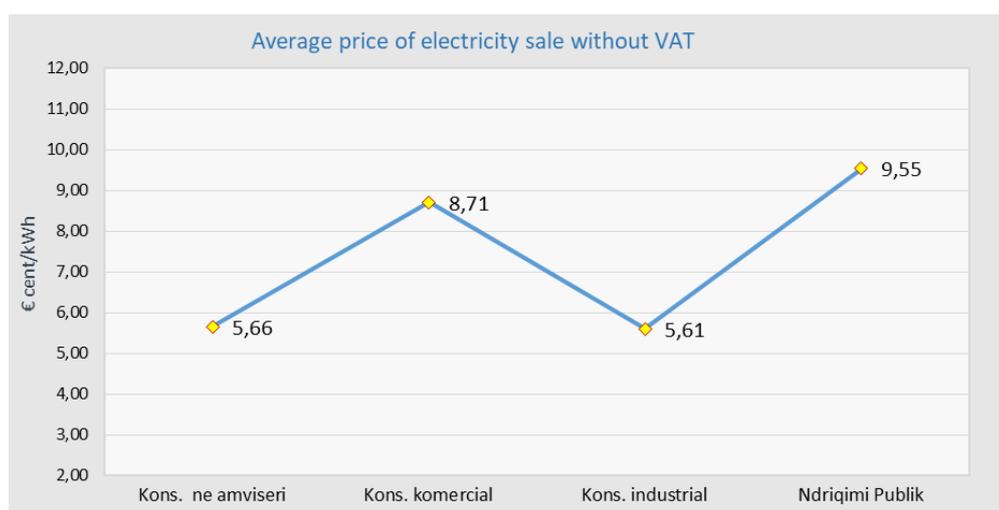


Fig. 6.19 Average price of electricity sale 2020 (without VAT)

For the category of household customers, the average energy price is 5.66 € cents/kWh which is slightly lower than in 2019 when it was 5.68 €cents/kWh, while for non-household customers the average energy price is 7.30 € cents/kWh which is also slightly lower than the average price in 2019 which was 7.33.

The figure below shows the average electricity prices for household and non-household customers for the last ten years, prices which do not include VAT.

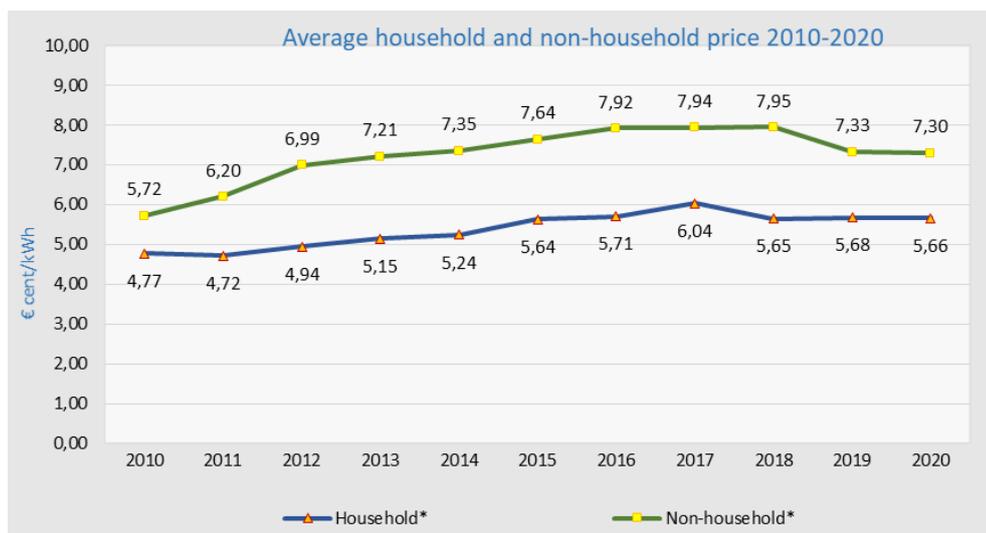
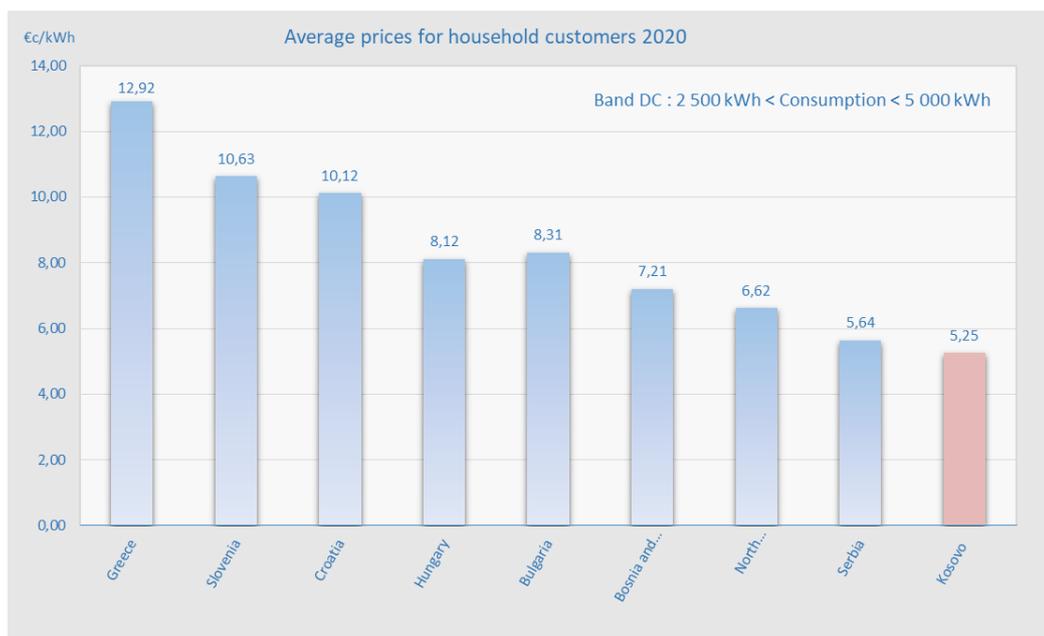


Fig. 6.20 Average price of electricity sale (without VAT) through years

Compared to the countries of the region and based on data released by Eurostat for the first half of 2020, Kosovo has the lowest average price without VAT for household customers. Eurostat data categorized by household consumption 2500-5000 kWh/year, for the first six months of 2020 for some countries, as data for the second half are still missing, are presented in the figure below.



*Burimi i të dhënave nga EUROSTAT

Fig. 6.21 Average prices for household customers for the first six months (without VAT)

6.7 Electricity import and export

In general, most of the total demand for electricity in the Kosovo power system is covered by domestic generation dominated by power plants, while the rest is provided by imports which are realized through cross-border lines.

The share of imports in the total energy demand was 13.61%, marking a decrease of about 1.87 percentage points compared to last year, which was about 15.47%.

Through interconnection lines from the regional system to the power system of Kosovo, 2,587,395 MWh have entered, while 2,715,414 MWh exited, where 128,020 MWh represents the difference between input-output, while this is divided into net imports and deviations to the regional system.

The table below shows the electricity flows on the interconnection lines with neighbouring countries.

Tab. 6.25 Electricity flows in interconnection lines for 2020

Flows of interconnection lines MWh	400 kV		220 kV		110 kV		Total	
	Receipt	Delivery	Receipt	Delivery	Receipt	Delivery	Receipt	Delivery
Albania	3 091	39 939	314 288	153 033			317 379	192 972
Macedonia	22 191	1 908 387					22 191	1 908 387
Montenegro	924 712	393 109					924 712	393 109
Serbia	1 157 622	95 183	153 107	52 068	12 384	73 695	1 323 112	220 946
Total	2 107 616	2 436 618	467 395	205 101	12 384	73 695	2 587 395	2 715 414
Balance	329 002		-262 294		61 311		128 020	

The import realized for 2020 was 839,209 MWh, with which the energy deficiencies were met, especially at peak times in the winter season when the demand was unaffordable for the domestic generation.

This amount includes the electricity imported for regulated and unregulated customers, the losses in the transmission network and losses in the distribution network, which is provided through commercial contracts and through the exchange of energy for energy between KEK and KESH.

Electricity imports for 2020 was 89,283 MWh lower than in 2019 which was 928,492 MWh.

Electricity imported under commercial contracts during 2020 was 812,823 MWh, with an average price of 51.47 €/MWh, and compared to last year, this year the average import price is lower by 4.60 €/MWh.

Data on electricity imports and exports are presented in the following table.

Tab. 6.26 Electricity import and export in 2020

Import/Export MWh	Import with contracts	Import as an exchange	Total import	Export with contracts	Export as an exchange	Total export	Net Imp/Exp
January	138 667	0	138 667	33 766	0	33 766	-104 901
February	81 489	0	81 489	71 026	796	71 822	-9 667
March	43 679	0	43 679	98 125	690	98 815	55 136
April	41 822	0	41 822	128 080	4 870	132 950	91 128
May	48 979	1 900	50 879	170 289	6 288	176 577	125 698
June	69 384	1 150	70 534	43 755	2 634	46 389	-24 145
July	29 970	0	29 970	93 897	5 502	99 399	69 429
August	17 628	0	17 628	140 283	0	140 283	122 655
September	18 989	20 154	39 143	223 580	914	224 494	185 351
October	76 773	1 800	78 573	157 753	2 741	160 494	81 921
November	85 440	0	85 440	72 905	372	73 277	-12 163
December	159 973	1 382	161 355	29 657	4 712	34 369	-126 986
Total	812 793	26 386	839 179	1 263 116	29 519	1 292 635	453 456

Electricity exported with commercial contracts during 2020 was 1,253,687 MWh with an average price of 31.00 €/MWh. In addition to contracted export, there was an amount of energy exchanged (energy for energy) between KEK and KESH. The amount of energy exported as an exchange is 29,519 MWh. The total export of electricity for 2020 was 1,283,206 MWh, which is higher than in 2019.

As seen from the data presented above, in 2020 Kosovo was a net importer of electricity in the amount of 443,997 MWh, presented by months in the figure below.

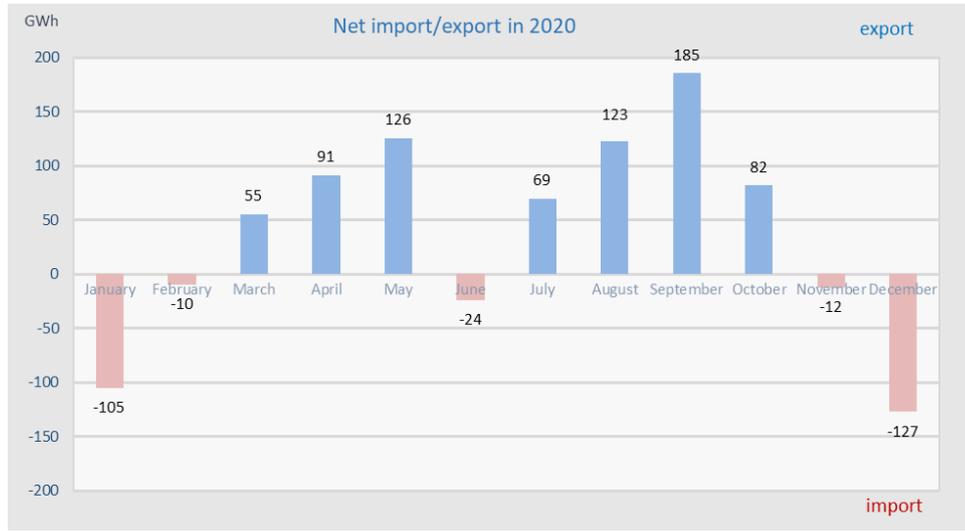


Fig. 6.22 Electricity export and import in 2020

There are electricity surpluses mainly at night hours (at low tariff times), when even in regional systems surpluses appear, which affects the export prices to be significantly lower than import prices.

The price of electricity imports and export during the years 2000 - 2020 has increased and decreased. The figure below shows the import and export prices from 2010 to 2020.

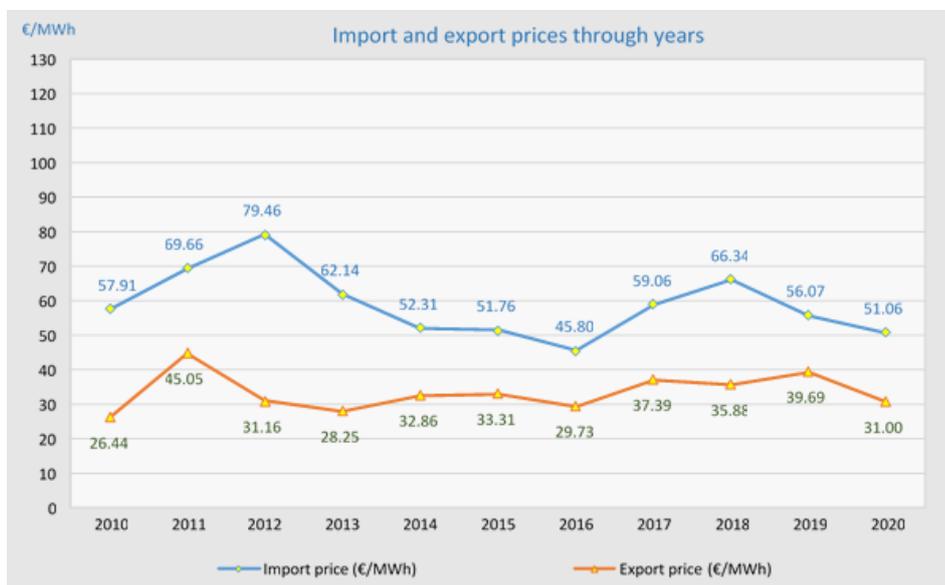


Fig. 6.23 Average price of import and export through years

6.8 Quality standards of electricity supply and services

The standards of electricity supply and service quality are regulated in the Rule on Electricity Service Quality Standards, which was approved by the Board of ERO on 05.06.2019. The purpose of the Rule is to determine the quality indicators of electricity service for customers, related to the services provided, uninterrupted electricity supply and voltage quality.

The electricity supply services included in this rule are:

- service quality;
- uninterrupted supply; and
- voltage quality.

The Rule on Electricity Service Quality Standards presents individual and general indicators of the quality of electricity service, uninterrupted supply indicators, as well as voltage quality indicators.

It should be noted that the quality standards of electricity supply and service are an important element of the energy sector regulation. These standards are set so that the quality of electricity supply and service, as well as the quality of voltage to customers is continuously improved by the energy enterprise.

During this reporting year, the standards of electricity supply and service quality were monitored according to the following areas:

- Continuity of supply;
- Voltage quality; and
- Commercial Quality.

6.8.1 Continuity of supply

Continuity of supply is related to the availability of the power system, respectively displays the number and duration of outages per customer within a year.

Power outages are recorded by the Transmission System Operator (TSO) and the Distribution System Operator (DSO). Based on the Rule on Electricity Service Quality Standards, power outages are classified as short and long outages. Any interruption of power supply lasting up to 3 minutes is classified as a short interruption, and any interruption longer than 3 minutes is classified as a long interruption. It is worth noting that according to the Rule in question and international standards, only long outages are registered and reported by system operators. Long outages are classified as planned and unplanned.

Continuity of supply is measured by indexes:

- SAIDI - System average interruption duration index;
- SAIFI - System average interruption frequency index;
- ENS - Energy Not-Supplied; and

- AIT – Average Interruption Time

During 2020, the continuity of electricity supply was monitored by the Regulator for both system operators: Transmission System Operator (TSO) and Distribution System Operator (DSO).

6.8.1.1 Measuring indexes reported by TSO

According to the Rule on Electricity Service Quality Standards, the general supply indicators that the Transmission System Operator must record and report are:

- Average time of interruptions – AIT;
- Energy not-supplied- ENS.

The average interruption time (AIT) in the transmission network represents the cumulative duration of power outages per customer.

The energy not-supplied (ENS) is the energy that would have been supplied by the system if there had been no power outage.

The overall metering indexes reported by the TSO for electricity supply and service quality standards for 2020 are presented below.

- AIT – for planned interruptions was 15.3 minutes or 0.255 hours;
- AIT – for unplanned interruptions was 63.9 minutes or 1.065 hours;
- ENS - for planned interruptions in the transmission system was 0.255 GWh; and
- ENS - për for unplanned interruptions in the transmission system was 1.083 GWh.

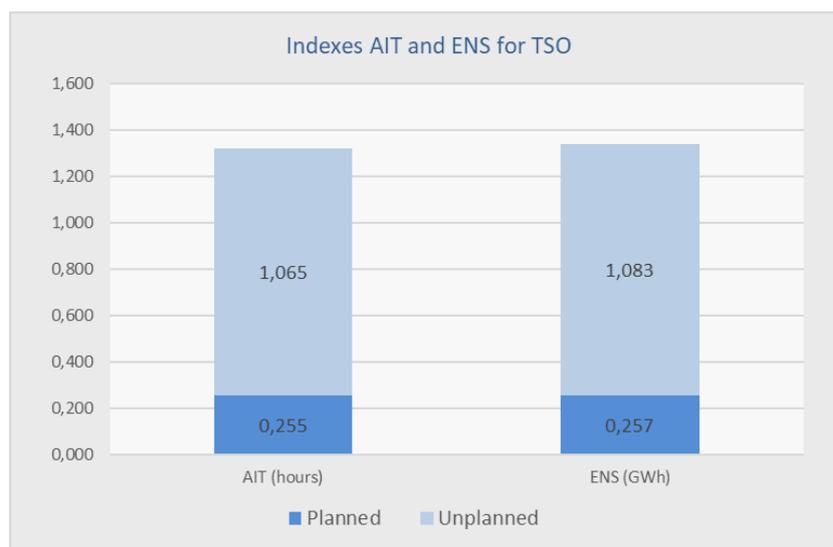


Fig. 6.24 Measuring indicators AIT and ENS for KOSTT for 2020

The figure below shows the measuring index reported by TSO on electricity supply and service quality standards, namely on energy through 2015-2020.

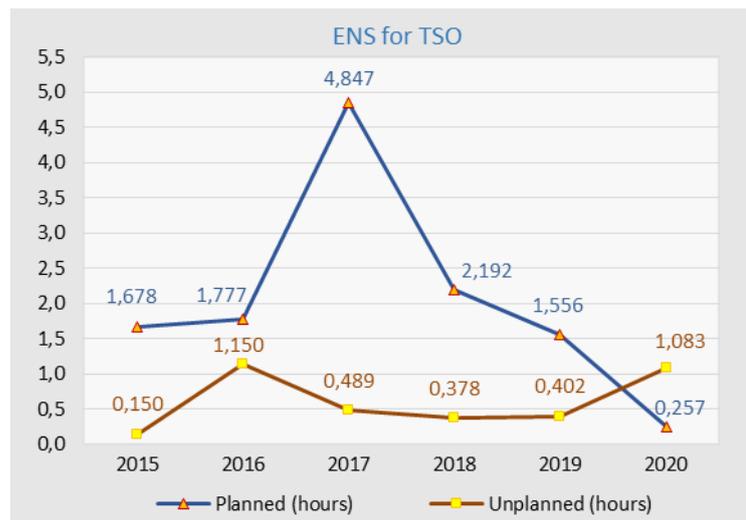


Fig. 6.25 ENS measuring index for TSO for the period 2015-2020

According to the data reported for the ENS measuring index, during 2020 there is a decrease or improvement of this index by -46.12% compared to 2019, respectively there is a decrease of -505.45% in planned outages, while an increase of 169.40 in unplanned outages.

6.8.1.2 Measuring indexes reported by DSO

The measuring indexes reported by the DSO on quality standards of electricity supply and service for 2020 are presented below.

- SAIDI - for planned interruptions in the distribution system was 22.15 hours;
- SAIDI - for unplanned interruptions in the distribution system was 53.46 hours;
- SAIFI - for planned interruptions in the distribution system was 5.98;
- SAIFI - for unplanned interruptions in the distribution system was 47.02;
- ENS - for planned interruptions in the distribution system was 14.83 GWh; and
- ENS - for unplanned interruptions in the distribution system was 44.16 GWh.

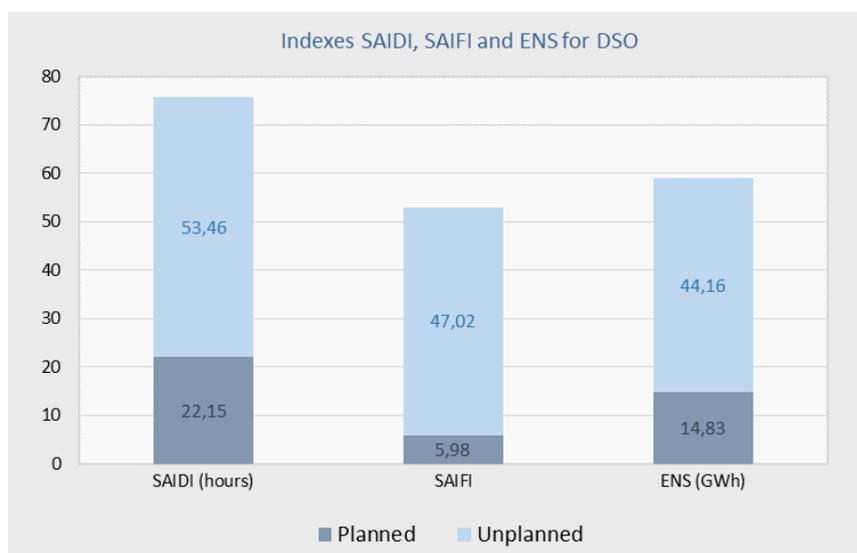


Fig. 6.26 Measuring indexes SAIDI, SAIFI and ENS for DSO for 2020

The following figures show the measuring indexes reported by the DSO for electricity supply and service quality standards during the years 2011 - 2020 for the SAIDI and SAIFI index, while for the ENS index through the years 2015 - 2020.



Fig. 6.27 Indicators SAIDI, SAIFI and ENS for OSSH for the period 2011-2020, and 2015 - 2020

Based on the data presented above, it is noticed that the measuring indexes SAIDI, SAIFI and ENS in 2020 in general have had a significant improvement compared to 2019, as a result of investments made in the distribution network.

According to the data reported for the SAIDI measuring index during 2020, it is noticed that there has been no improvement of this index compared to 2019, which means that in 2020 there is an increase of outages by 9.87% compared to 2019. During a more detailed analysis in relation to SAIDI index, it is noticed that in 2020 there is an increase of planned outages of 8.21% compared to 2019, as well as an increase for unplanned outages of 10.57% in 2020 compared to 2019.

From the analysis of the SAIFI measuring index, it is noticed that during 2020 there is an improvement of this index compared to 2019, which means that in 2020 there is a decrease in the frequency of power outages per customer - SAIFI and that for - 1.92% compared to 2019. It is worth mentioning that during the more detailed analysis of the SAIFI index, it is observed that in 2020 there is a reduction of -13.04% in the frequency of planned outages (SAIFI) per customer, compared to 2019, as well as a reduction of -0.51% in the frequency of unplanned outages per customer, compared to 2019.

During 2020, there has been no improvement of energy not-supplied (ENS) compared to 2019, which according to data shows that in 2020 there is an increase of 33.31% compared to 2019. During the more detailed analysis of the SAIDI index it is noticed that in 2020 there is an increase of 38.08% of energy not-supplied for planned outages, compared to 2019, while an increase of 31.78% in energy not-supplied for unplanned outages, compared to 2019.

6.8.2 Voltage quality

The voltage quality is related to the technical aspect of the power system and is compared to the nominal voltage, which during this period was mainly monitored through registry of customer complaints regarding voltage quality.

During 2020, the number of complaints submitted by costumers to the DSO regarding the voltage quality was 302 complaints, out of which 212 or 70.20% were resolved, 25 or 8.28% are under the review process, while 65 complaints or 21.52% remain unresolved.

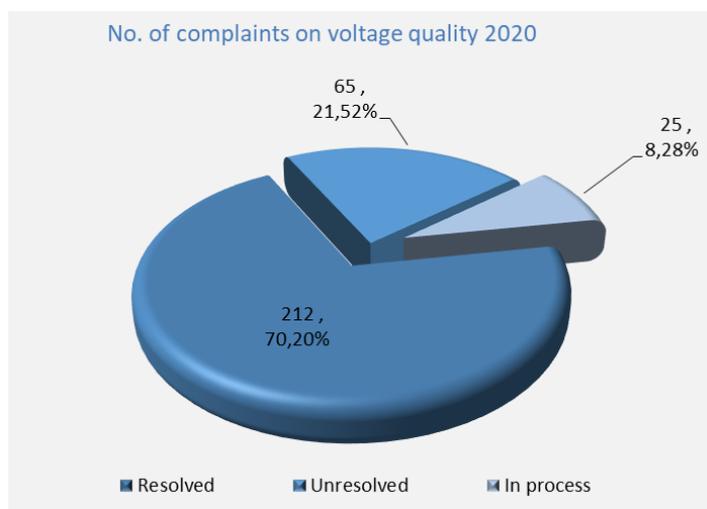


Fig. 6.28 Customer complaints on voltage quality 2020

Below is a figure showing the data of the status of resolved customer complaints on voltage level at DSO, for 2020.



Fig. 6.29 The status of resolved customer complaints in 2020

So, the figure above shows that DSO, from 212 resolved customer complaints on voltage quality, has approved 194 or 91.51% of complaints in favour of customers whereas has refused 18 or 8.49%.

The figure below shows customer complaints on voltage quality by years, where it is seen that until 2017 there has been a continuous increase of customer complaints regarding voltage quality, while in 2018 and 2019 there has been a decrease of customer complaints on voltage quality, however there is an increase of 8.63% of complaints on voltage quality in 2020 compared to 2019.

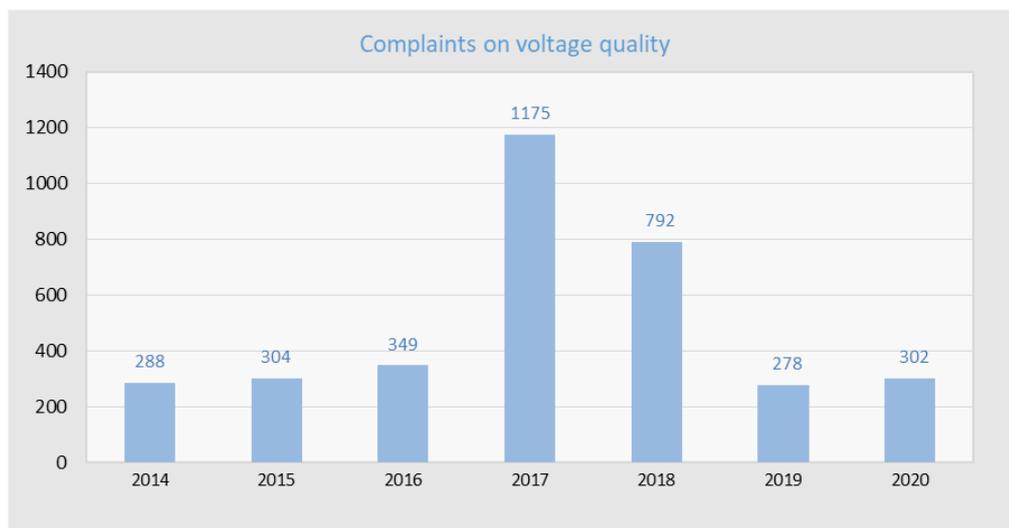


Fig. 6.29 Complaints on voltage quality by years

Voltage quality standards are defined in the Rule on General Conditions of Energy Supply, the Distribution Code and the Distribution Metering Code.

6.8.3 Commercial quality

Commercial quality determines the efficiency and accuracy of customer complaints and requests. The regulation of commercial quality takes into account the mutual relationship between customers and suppliers.

For the purpose of analysing commercial quality, the data obtained from the licensee are presented in three categories that directly affect customer issues. These categories are:

- New Connections;
- Electro-Energetic Consents; and
- Customer Complaints

6.8.3.1 New connections

In commercial quality standards, among other things, new connections are also incorporated, through which is recorded how quickly the energy enterprise takes measures for execution of new connections.

During 2020, a total of 24,526 regular requests for new connections were registered for tariff groups 4, 5, 6, 7 and 8, while 24,157 or 98.49% requests for new connections were approved, whereas the rest is in the registration process. It should be noted that there were 2,889 requests for new connections transferred from the previous year.

From the data of KESCO, it can be seen that from the total number of requests for new connections, the highest demand was from household customers (tariff groups 5, 6 and 7) with 19,292 or 78.66%, followed by 2,730 or 11.13% requests for new connections of the commercial tariff group 0,4 kV Category II - tariff group 4, whereas there were 340 or 1.39% of requests for tariff group 8 - Public lighting. It should also be noted that from the total number of requests for new connections, 2,164 or 8.82% of requests were of undefined categories, because the applicants when applying for new connection, did not specify the customer category in their request, therefore they were registered in this category.

Of the total number of applicants' registrations as customers in the "CCP" billing program, household customers amount for 20,689 or 85.64 %, followed by tariff group 4 (0.4 kV category II - commercial) with 3,068 or 12.70% of registrations, as well as the tariff group 8 (public lighting) with 400 or 1.66% of registrations.

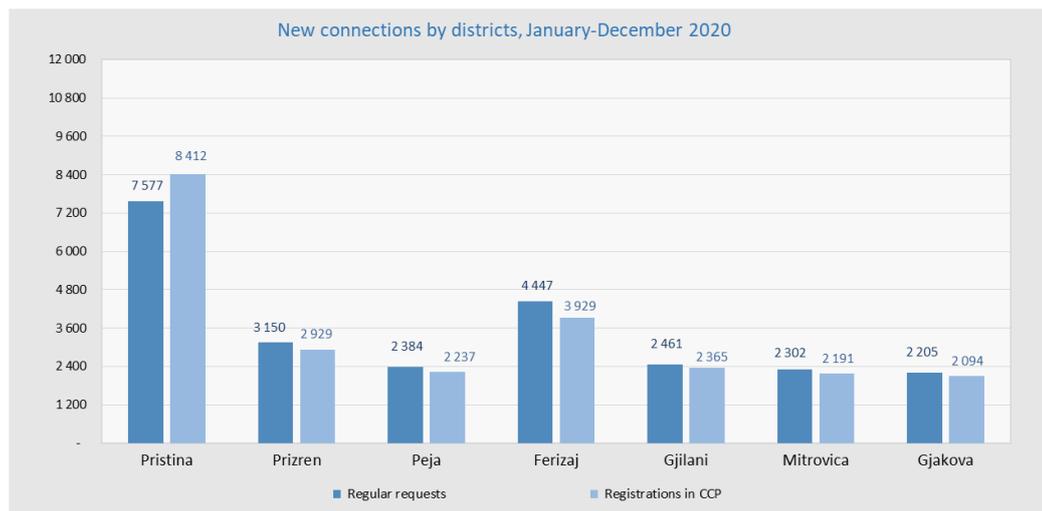


Fig. 6.30 New connections by districts for 2020

From the chart above, it is noticed that during 2020, from the total number of requests for new connections, most requests were registered in the Pristina district with 7,577 or 30.89 % of requests, followed by Ferizaj district with 4,447 or 18.13%, whereas the lowest number of requests for new connections were registered in the district of Gjakova, respectively 2,205 or 8.99%. It should also be emphasized that in relation to the registration of requests in the Customer Care Package, from the overall number, the highest number of registrations were in the Pristina district with 8,412 or 34.82%, followed by Ferizaj district with 3,929 or 16.26%, whereas the lowest number of registrations was recorded in the district of Gjakova with 2,094 or 8.67%.

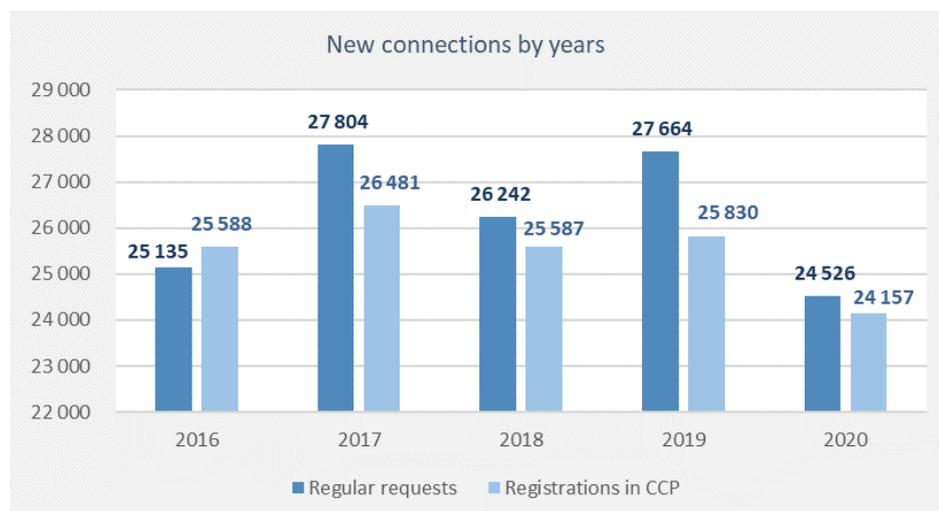


Fig. 6.31 New connections by years

The chart above shows that during 2020 there were 12.79% less requests for new connections than in 2019, and 7.00% less customer registrations than in 2018.

6.8.3.2 Electro-energy consents

From the presented data, it can be seen that during 2020, 1,417 requests for electro-energy consents were submitted to KEDS, whereas 25 requests were transferred from 2019.

Tab. 6.27 Electro-energy consents for 2020

Districts	January	February	March	April	May	June	July	August	September	October	November	December	Total
Pristina	25	28	16	10	7	28	16	26	32	44	24	29	285
Mitrovica	27	21	15	6	3	18	27	13	13	19	20	23	205
Peja	12	6	3	2	2	9	8	6	9	14	16	13	100
Gjakova	7	11	4	9	2	3	11	8	11	23	11	10	110
Prizreni	17	5	16	4	6	12	14	16	25	19	14	12	160
Ferizaj	37	13	22	9	26	29	40	35	42	48	53	44	398
Gjilani	18	14	12	6	11	18	15	13	14	9	17	12	159
Total	143	98	88	46	57	117	131	117	146	176	155	143	1 417

From the table above, it is noticed that from the total number of requests for electro-energy consents for 2020, most requests were registered in Ferizaj district, namely 398 or 28.09%, followed by Pristina district with 285 or 20.11%, whereas the lowest number of request was in the district of Peja, respectively 100 or 7.06%.

Tab. 6.28 Electro-energy consents by districts for 2020

Districts	Requests for EEC 2019	Reviewed - EEC	Reviewed - Information	Reviewed - Response	Transferred to other departments	In process
Pristina	285	240	30	8	4	11
Mitrovica	205	135	44	7	13	8
Peja	100	72	11	5	9	4
Gjakova	110	84	9	6	7	5
Prizreni	160	122	24	3	6	6
Ferizaj	398	314	37	15	24	15
Gjilani	159	113	28	11	11	1
Total	1 417	1 080	183	55	74	50

The table above shows that from 1,417 applicants' requests for electro-energy consents for 2020 and 25 transferred from 2019, 1,080 requests were reviewed and the electro-energy consent was issued, 183 requests were reviewed and the parties were provided information on their request for electro-energy consent, whereas according to KEDS data, 74 other requests were also reviewed, but according to the Department of electro-energy consents, within KEDS, it was concluded that these requests should not be issued the electro-energy consent, however they were delegated to other departments and the remaining part of them is under review.

Below is the chart of applications for electro-energy consents for the period 2014-2020, and the chart clearly shows that in each year there has been an increase of requests for electro-energy consents from applicants for connection, but in 2020 the number of requests has decreased, and this is due to the situation with the Covid-19 pandemic.

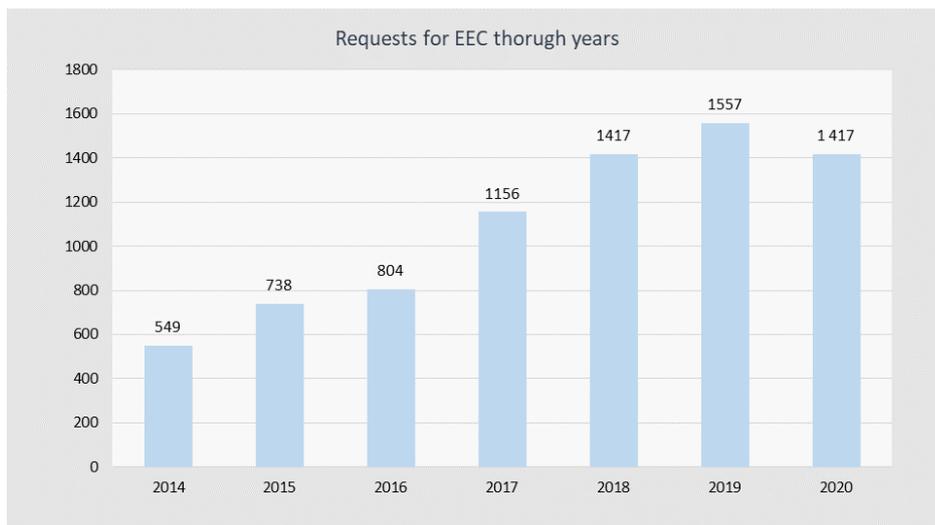


Fig. 6.32 Requests for electro-energy consents for the period 2014 – 2020

6.8.3.3 Customer complaints to the supplier- KESCO

According to KESCO's reported data, during 2020, there was a total number of 6,594 customer complaints registered at KESCO's Customer Department and 1,573 complaints transferred from the last year, whereas 5,971 were resolved/completed.

Below is a graph of registered and resolved customer complaints for 2020 by districts.

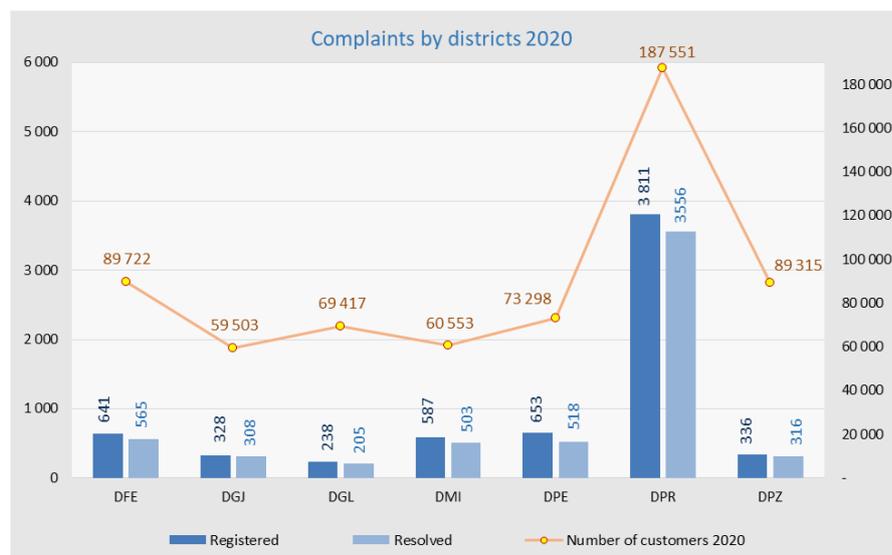


Fig. 6.33 Complaints and the number of customers by districts, 2020

The figure above shows that the highest share of customer complaints registered in KESCO during 2020 is in the district of Pristina with 57.79%, followed by the district of Peja with 9.90%, while the lowest share is in the district of Gjilan with 3.61%. It should be emphasized that the largest number of complaints in the district of Pristina is mainly due to the fact that the district of Pristina has the largest number of costumers in Kosovo. Also from the figure above it is seen that the highest share

of customer complaints resolved by the Customer Department in KESCO compared to the total number of complaints resolved at the country level is in the district of Pristina with 59.55%, followed by the district of Ferizaj with 9.46%, whereas the lowest share is in the district of Prizren with 5.29%.

Below is the report of customer complaints filed at KESCO with the number of invoices/customers by months.

Tab. 6.29 The report of complaints and number of customers by months in 2020

Month	Complaints	Number of bills/customers	Ratio complaint/customer
January	781	608 440	0,13%
February	536	610 324	0,09%
March	605	611 846	0,10%
April	664	612 616	0,11%
May	645	613 358	0,11%
June	463	614 855	0,08%
July	420	617 057	0,07%
August	347	619 353	0,06%
September	394	621 484	0,06%
October	519	624 063	0,08%
November	603	626 283	0,10%
December	617	629 359	0,10%
Total	6 594	7 409 038	0,09%

From the data reported by the supplier KESCO, the number of complaints registered during 2020 is 6,594, representing 1.05 % of the total number of customers, or 0.09% of the total number of annual bills.

The data show that the highest share of completed complaints in relation to registered complaints for the period January - December 2020 was realized in the district of Prizren (ratio of completed complaints/registered complaints) with 94.05%, followed by the district of Gjakova with 93.90%, while the lowest share is in the district of Peja with 79.33%.

The figure below shows the number of registered and resolved complaints by nature of complaints for 2020.

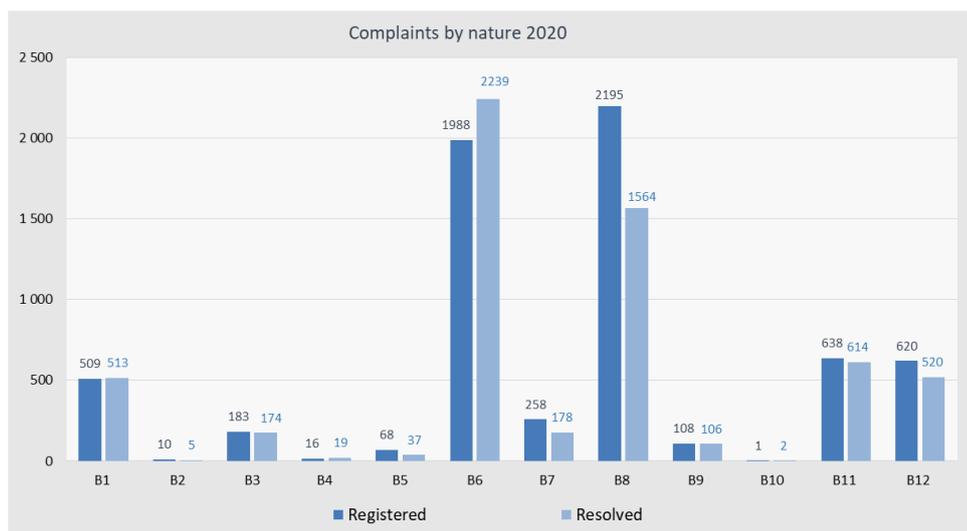


Fig. 6.34 Customer complaints by nature in 2020

Below are presented the descriptions of the nature of complaints submitted to the supplier- KESCO:

B1 - Unregistered payment – this nature of complaints concerns if the customer notices that the payment made by him/her is not registered in his/her account (his / her code), then the customer must address KESCO, and file a complaint for unregistered payment, attaching his receipt and other evidence.

B2 - Error in initial balance - this nature of complaints concerns when the customer has noticed that an error has been made during the transfer of the initial data, and as such seeks to improve the initial balance.

B3 – Nonreceipt of invoice - this nature of complaints has to do with the fact that electricity bills are not received properly or are not received at all, then based on this, the customer must submit a complaint of this nature at KESCO so that this does not happen in the future.

B4 – Over the limit - this nature of complaints is related to the customer complaining on being billed over the limit due to reading or billing errors.

B5 – Change of the lump sum - this nature of complaints has to do with the fact that in cases when the customer has been billed without being metered for a while, now upon the instalment of the electric meter, the customer wants to be billed according to the metering recorded on the meter.

B6 – Incorrect reading - this nature of complaints occurs when the metered electricity consumption (kWh) of the customer does not match the billed electricity consumption. In such cases, the customer must file a complaint of this nature.

B7 – Irregular reading - this nature of complaints has to do with the fact that the electricity meter that records the energy consumed is not being read regularly, month by month, and consequently there is an accumulation of electricity consumption in only one bill.

B8 – Inaccurate meter - In case the customer suspects that the meter is providing inaccurate metering, then such customer must address KESCO and file a complaint for inaccurate metering of the metering point.

B9 – Request for debt settlement - This nature of complaints relates to the fact that if a customer has privatized an enterprise and in the transactions of the privatized enterprise is a debt that belongs to the old enterprise, then such debt should be required to be settled and the name changed, then in such cases, the customer must submit all the documents of the privatization process and the data of the enterprise, in order to proceed with the complaint.

According to a court decision, KESCO JSC. is obliged to settle a debt in the customer's transactions, then the customer must address KESCO with all relevant documentation.

In cases when the customer has property, and such property has been occupied by other people and there is debt accumulated by other people, then the customer must address KESCO and submit the documents issued by the Kosovo Property Agency, which prove that the property has been occupied, then based on the provided documents the customer requests that the disputed debt be settled, however the undisputed debt must be paid.

B10 – Disconnection without notice - This nature of complaints has to do with whether the customer estimates that an outage has taken place without notice.

B11 - Others –when none of the above points is applicable to the nature of customer complaint, then the customer has to describe his own complaint.

B12 – Unauthorized use of electricity (Loss recovery) – this nature of customer complaints relates to complaints regarding the unauthorized use of electricity, such as uncontracted use of electricity and electricity theft.

From the data reported by KESCO for 2020, it is noticed that from the total number of customer complaints, the highest number of complaints were related to the inaccurate meter, namely 2,195 or 33.29 %, followed by complaints about incorrect reading, with 1,988 or 30.15 %, whereas the lowest number of complaints were related to the disconnection without notice, respectively only 1 complaint or 0.02%.

According to KESCO data, in 2020 the number of registered customer complaints related to reading errors at the metering point (incorrect reading and irregular reading) was 2,246 or 34.06% of the total number of filed customer complaints; in 2019 the number of complaints that were related to errors in reading the metering point was 1,589, in 2018 there were 1,500 complaints, in 2017 there were 3,955 complaints, and in 2016 there were 4,504. From the reported data it is noticed that in 2020 there is an increase of complaints regarding reading errors at the metering point (incorrect reading and irregular reading), due to the situation with the Covid-19 pandemic, when in some cases, the reading of the metering point by the employees authorized for reading was impossible due to the movement restrictions, therefore in some cases the reading and billing were done by evaluation, where may have been errors, but such errors were corrected by the Supplier. In general, it should be noted that the number of customer complaints on errors in the reading of the metering point is declining, and this is owing to the new way of reading at the metering point by hand-held unit ("Hand Held Unit"), which has significantly improved the reading of the metering points and has reduced the possibility of errors while reading the metering point, because the reading and billing are done at the same time.

Below is presented the figure with the data of complaints resolved by KESCO in 2020, or more precisely the status of resolved complaints.



Fig. 6.35 The status of resolved customer complaints in 2020

Thus, from the figure above it is noticed that KESCO, out of 5,971 resolved customer complaints, approved 2,125 or 35.59% in favour of customers and rejected 3,846 or 64.41%.

The total number of customer complaints registered in 2020 was 6,594, in 2019 it was 6,841, in 2018 it was 8,040, in 2017 it was 11,350, in 2016 it was 11,180, in 2015 it was 12,926, while in 2014 it was 17,655 as shown in the figure below.

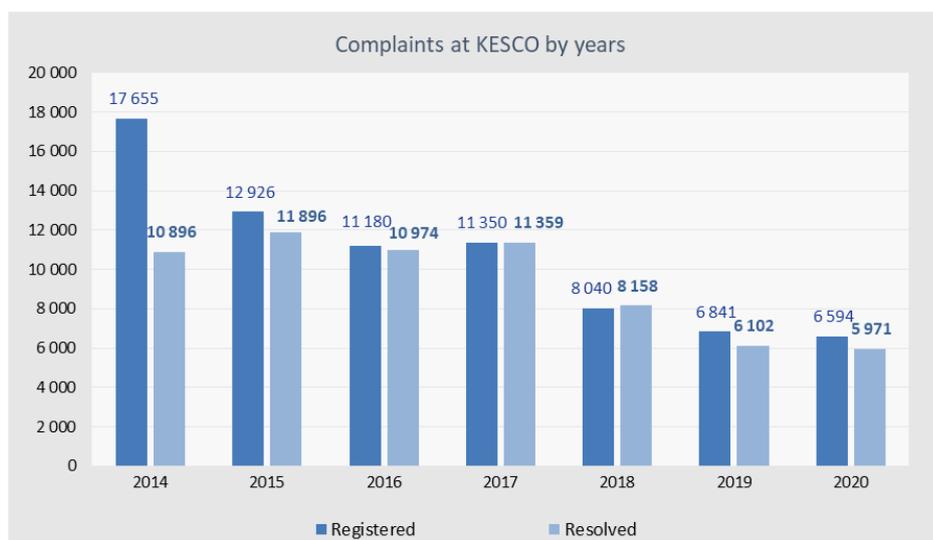


Fig. 6.36 Customer complaints in KESCO by years

7 THERMAL ENERGY SECTOR

The thermal energy sector in Kosovo consists of four systems: DH Termokos - Prishtina, DH Gjakova - Gjakova, DH Termomit - Mitrovica, and Zvecan. This sector has a very limited coverage locally, which meets approximately 3-5% of the total heat demand in Kosovo.

7.1 Technical characteristics of thermal energy systems

The Kosovo thermal energy sector consists of 4 thermal energy (district heating) systems with an installed generation capacity estimated to be around 332 MW_{TH}. The district heating Termomit, Mitrovica and Zvecan, due to known circumstances, do not meet the licensing/regulation and monitoring requirements of ERO, thus preventing the provision of the relevant updated data; therefore, detailed data for DH Termokos and DH Gjakova are provided below.

7.1.1 Thermal energy power plants

The thermal power plants of DH Termokos are comprised of the main heating plant with a total installed capacity of 120 MW_{TH}, and supporting heat plant at the University Clinical Center with a capacity of 14 MW_{TH}. Upon the connection of the thermal energy extraction station in units B1 and B2 of TPP Kosova B, to this capacity is also added the installed capacity of the 140 MW_{TH} cogeneration. It should be mentioned that the heating boilers at DH Termokos are not decommissioned but they will serve as a reserve capacity to be activated in the event of any eventual breakdown in TPP Kosova B units.

Gjakova city heating is equipped with two fuel oil boilers with a total installed capacity of 38.6 MW_{TH} - one with a capacity of 20 MW_{TH} and the other 18.6 MW_{TH}. It should be noted that the existing capacities in the old heating plant are extremely depreciated and inefficient, facts that should be taken into account in decision-making regarding their status after the activation of the new heating plant - the new biomass generation capacities.

7.1.2 Thermal Energy Distribution Systems

Kosovo thermal power distribution system is made of a primary distribution network which is extended up to the substation supply point, and from a secondary network which is extended from the substation to the end-users.

The primary distribution network of DH Termokos has a track length of about 41 km, respectively pipeline length of 41 km. An integral part of the distribution network is also the pumping station and heat exchangers located in the Sunny Hill and 465 active substations, which are the dividing point between the primary and secondary grids. In addition to the existing distribution network, in 2014 the thermal energy transportation network TPP Kosova B - DH Termokos was built in the length of about 10.5 km.

The primary distribution network of DH Gjakova is extended in a length of about 15.5 km, respectively with a pipeline length of about 31 km. An integral part of this network are also about 180 active substations, which are dividing points between the primary and secondary networks.

A summary of the technical characteristics of the district heating systems of DH Termokos and DH Gjakova is presented in the table below.

Tab. 7.1 Technical data of the district heating systems

Company (City)	Installed Capacity [MW]	Operational Capacity [MW]	Thermal Energy Network	
			Length of the Network (track) [km]	No. of substations
	2 x 58 = 116	2 x 49.3 = 98.6	Dis. network	
TERMOKOS (Pristina)	2 x 7 = 14	2 x 6.3 = 12.6	41,0	460
	1 x 4 = 4	3,6	Trans. network	(active-443)
	[Cogeneration] 2 x 70 = 140	2 x 68.7 = 137.4	10,5	
Sub-total	274,0	252,2	51,5	460
DH GJAKOVA (Gjakova)	1 x 20 = 20	1 x 14.8 = 14.8	Dis. network	302
	1 x 18.6 = 18.60	1x13.02 = 13.02	15,5	(active-180)
Sub-total	38,6	27,8	15,5	302
Total	312,6	280,0	67,0	762 (Active - 623)

7.2 Main developments in thermal energy sector

7.2.1 Developments in DH Termokos

In order to meet the growing demands for connection to the system of DH Termokos, during 2020 a number of rehabilitation and expansion projects have been developed, mainly in the distribution network, which are at different stages of development. Despite the obstacles caused by the COVID-19 pandemic, significant progress has been made in the development of these projects.

During 2020, the implementation of the European Commission Project IPA 2015 has continued: Rehabilitation of the network of substations, as well as expansion of the network and new substations. Within this project, by the end of the year, almost all construction and installation works have been completed that have included the following main components:

- Rehabilitation of the distribution network (replacement of old pipelines with new pre-insulated pipes) - 3.28 km track respectively 6.5 km pipeline; rehabilitation includes the regions: Center: 1 km track, Dardani: 0.79 km track, Sunny Hill: 1.18 km track, Ulpiana 0.24 km track and Kalabria, a very short segment of only 0.07 km.
- Rehabilitation of 100 thermal substations - Dardania: 26, Center: 9, Ulpiana: 21, Sunny Hill: 8, UCKK: 5 and 31 thermal substations at various institutions. The rehabilitation also includes the installation of 100 differential pressure regulating (control) valves.

- Expansion of the network in total 3.96 km track, respectively 7.92 km of new pipeline - Center: 0.66 km track, Sunny Hill: 0.048 km track, 0.574 km track, Dardania: 0.617 km track, Kalabria: 1,028 km track and Mati: 1,035 km track.
- 51 new thermal substations – Center: 9, Ulpiana: 4, Kalabria: 31, Mati: 5 and 1 thermal substations of the facility of Kosovo Customs Directorate.



Fig. 7.1 Views from the works in the rehabilitation of the network and substations

Upon the finalization of this project, there is expected to be a reduction of losses of the thermal energy distribution network and improvement of the quality of heating in some most problematic parts; also, the expansion of the network has increased the number of customers who benefit from thermal energy supply (district heating), respectively increased the area for heating of spaces covered by the district heating supply service of Termokos.

Despite some setbacks, during 2020 the implementation of the first phase of the MCC (Millenium Challenge Cooperation)- USA project of Metering the district heating within the 'Reliable Energy Spectrum' Program continued. With the signing of the Memorandum of Cooperation in September 2020, MCC and Termokos are committed to cooperation and coordination of activities of the first phase for implementation of the activity 'Prishtina Heat Save', which aims at consumed-based billing by creating a modern billing system for Termokos, in which case the efficient use of thermal energy is achieved. Otherwise, the project 'Metering of District Heating' in the estimated value of \$ 10.9 mil, as a donation from MCC - USA, contains:

- Installation of individual thermal energy meters respectively heat allocators;
- Installation of thermostatic valves and circulating pumps;
- Development of the software for billing and reading the thermal energy consumption;
- Assistance in improving billing services based on metered consumption.

The entire realization of this project will enable the metering of consumption and the implementation of billing based on the registered consumption metering, which aims the saving of thermal energy that will free the capacities for expansion of the customer base, respectively will enable the connection of a significant number of customers to the heating system who currently use electricity for heating their areas.

Following the financial agreement between the German Government and the Government of Kosovo for financial support under the Program for the energy sector VIII and IX - the project for rehabilitation

and expansion of the network of DH Termokos is being prepared. This project led by the German Development Bank (KfW) is in the preparatory phase and contains 2 main components:

- Rehabilitation and expansion of DH Termokos distribution network;
- Modernization of existing substations and construction of new substations as well as the construction of reservoirs for heat storage.

This project, which is in its initial preparatory phase, is expected to be worth approximately €14 million, funds pledged as donations from Germany, Luxemburg, Sweden, funds that will be allocated and managed through KfW, and a small amount from the Municipality of Prishtina.

Regarding development projects, it should be noted that these projects are included in the ten (10) year Development Plan of DH Termokos, approved by the Board of ERO. The Development Plan presents the effective measures that will be taken to guarantee the suitability of the system and to ensure the best possible supply of thermal energy (district heating), including plans for rehabilitation projects and expansion of district heating system infrastructure in the Municipality of Prishtina, during the next ten (10) years.

7.2.2 Developments in DH Gjakova - Fuel Change and Cogeneration Project

The main development project of DH Gjakova is the construction of a new Biomass Heating Plant that includes the electricity and thermal energy co-generation unit. During 2020, construction and installation works were carried out; Despite some delays caused by the COVID-19 pandemic, the works were carried out mainly according to the implementation plan. By the end of the year, the main construction and installation works have been completed, and it is expected that the testing phase for the thermal energy generation units will start in January 2021, while the testing phase of the co-generation unit is planned to start in March - April 2021. This project in the amount of about € 13.5 million, is financially supported by the European Commission - Office in Kosovo through IPA-2015 funds.

Main data:

- 2 heat-only production units: with a capacity of $2 \times 5.5 \text{ MW}_{\text{TH}}$
- 1 cogeneration unit of electricity and thermal energy with thermal capacity: 4 MW_{TH} ; and Electrical Capacity: $1.2 \text{ MW}_{\text{EL}}$
- Total thermal capacity: $15 \text{ MW}_{\text{TH}}$ and electricity capacity $1.2 \text{ MW}_{\text{EL}}$

The project, among others, includes the installation of relevant equipment for the new heating plant and connection to the thermal energy distribution network, respectively electricity.

This project will enable an operational and financial sustainability of DH Gjakova, where concretely the main impact is the replacement of fuel – heavy fuel oil with biomass. So far, due to high costs, heavy fuel oil has been largely subsidized by Kosovo Budget. In addition to quality supply of customers with district heating, this project also has a positive impact on increasing energy efficiency and environmental protection.

Following the efforts for rehabilitation of the district heating system and the improvement of the system performance, respectively the enterprise, at the end of 2020 the project “Improving the performance of the district heating system of Gjakova” has started; This project is financially supported by the State Secretariat for Economic Affairs of Switzerland (SECO), in the amount of € 5.5 million and by the Municipality of Gjakova in the amount of € 500.000 (five hundred thousand).

This project, which is the initial phase, aims to rehabilitate the distribution system and increase energy efficiency, as well as increase the operational and financial performance of the enterprise; contains 4 main components:

- Corporate development of the enterprise – district heating of Gjakova;
- Rehabilitation of distribution network and substations;
- Rehabilitation of the internal network (secondary network) and thermal substation of the Gjakova Regional Hospital; and
- Connection to the district heating system of new buildings - mainly public.

7.3 Performance of thermal energy enterprises

In the 2019/2020 season, DH Termokos has continued with the positive trend of sustainable production and supply of thermal energy, providing uninterrupted supply 24 hours, which is mainly due to sufficient production from cogeneration plants in TPP Kosova B, but also the realization of network rehabilitation projects and thermal substations.

Regarding DH Gjakova, it should be mentioned that, owing to subsidies from the Government of Kosovo, in 2019/2020 it has managed to start generation and supply of thermal energy. However, due to financial constraints, DH Gjakova has been forced to cut the heating season to around 3 months (December 2019- February 2020). Also, during this period it has provided reduced supply and has significantly reduced the heating area, respectively the number of supplied customers, focusing on more regular payers as well as in the network parts where there are less heat losses.

7.3.1 Production, supply and losses at DH Termokos

- Thermal energy production

Termokos has based the production of thermal energy on the cogeneration plants in TPP Kosova B; in fact, during 2019/2020 season, the entire generation of thermal energy was from cogeneration plants in TPP Kosova B, so it was not necessary to activate the heavy fuel oil boilers in Termokos Heating.

The amount of thermal energy extracted from cogeneration in the 2019/2020 season was 246,733 MWh_{TH}, which is 11,654 MWh_{TH} or 4.96% higher than the amount of thermal energy in the previous season (235,079 MWh_{TH}). While the amount of thermal energy received at the heat exchange station in DH Termokos was 242,029 MWh_{TH}, which also represents an increase of 12,369 MWh_{TH} or 5.39% compared to last season (229,661 MWh_{TH}).

The summarized data on generation of thermal energy from cogeneration are presented in the following table:

Tab. 7.2 Generation of thermal energy from cogeneration

Thermal Energy from co-generation– DH Termokos, 2019/2020 season			
Month	Unit	Extracted thermal energy (metered at TPP Kosova B)/Gross production	Received Thermal Energy (metered at DH Termokos)/Net production
October 2019	MWh _{TH}	8 449	8 317
November 2019	MWh _{TH}	31 057	30 530
December 2019	MWh _{TH}	44 182	43 398
January 2020	MWh _{TH}	52 762	51 707
February 2020	MWh _{TH}	43 209	42 345
March 2020	MWh _{TH}	39 735	38 940
April 2020	MWh _{TH}	27 339	26 792
Total	MWh_{TH}	246 733	242 029

- Thermal energy supply

DH Termokos, in the 2019/2020 season, has continued to provide sufficient amount and proper quality of thermal energy supply, which is mainly due to continuous improvement of the thermal energy generation and improvement of network maintenance and repairs.

The supply of customers with thermal energy (district heating) in this season is estimated to be 219,917 MWh_{TH}, which represents an increase of 10,384 MWh_{TH} or 4.96% compared to the previous season 2018/2019 (209,533 MWh_{TH}). This accomplished supply is quite satisfactory and has met the planning and objectives for a sufficient and quality supply.

- System losses

The thermal energy system of DH Termokos has its own specifics in terms of system losses, due to the integration of thermal energy from cogeneration. So, network losses include two components: losses in the transmission network TPP Kosova B - DH Termokos and losses in the primary distribution network.

Losses in thermal energy transmission network TPP Kosova B - DH Termokos, in the length of 10.5km, are determined by the measurements carried out at the thermal energy extraction station at TPP Kosova B and at the thermal energy receiving station at DH Termokos. From the measurements carried out in the period October 2019 - April 2020, it results that the quantitative losses in this period are 4,704 MWh_{TH} respectively 1.91%, which represents a decrease of 0.39% compared to the previous season. The following table provides details on losses in the thermal energy transmission network.

Thermal energy and losses in transmission network TPP Kosova B- DH Termokos – 2019/2020 season

	October	November	December	January	February	March	April	Total
Extracted thermal energy - metered at TPP Kosova B [MWh]	8 449	31 057	44 182	52 762	43 209	39 735	27 339	246 733
Received thermal energy - metered at DH Termokos [MWh]	8 317	30 530	43 398	51 707	42 345	38 940	26 792	242 029
Amount of energy losses [MWh]	132	527	784	1 055	864	795	547	4 704
Losses in [%]	1,56%	1,70%	1,77%	1,28%	1,46%	1,30%	1,30%	1,91%

Losses in primary thermal energy distribution network are normally determined by measurements of thermal energy at the entry of the distribution network and by the supply of thermal energy to customer substations. However, in the absence of a complete measurement of the thermal energy supply (in substations), for the calculation of supply, some approximations have been made using in the first place parameters such as: specific requirement for heating capacity (W/m²) and full load hours respectively specific consumption (kWh/m²). The estimated value of consumption is 219,917 MWh_{th}. Subtracting this value of consumption from the amount of thermal energy introduced in the distribution network (241,343MWh_{th}) results that the quantitative losses in the distribution network for the 2019/2020 season are 21,426 MWh_{th} or 8.88%. This level of losses represents an increase of 0.44% compared to last season (8.44%); This increase in losses is due to network rehabilitation works that have been carried out during a part of the heating season, where it was necessary to conduct hydraulic tests in certain segments of the network, as well as when new substations were installed, initially the secondary network is filled with water from the primary network.

The following table presents the summarized data on production, supply and total losses in the network - the thermal energy transmission network and distribution network:

Tab. 7.3 Energy performance of DH Termokos– 2019/2020 season

DH Termokos - Heating Season 2019/2020		
Description	Unit	Value
Gross Production in power plants	[MWh _{th}]	0
Gross production in cogeneration plants	[MWh _{th}]	246 733
Amount of losses in transmission network (TPP Kosova B- DH Termokos)	[MWh _{th}]	4 704
Share of losses in transmission network	[%]	1,91
Self-consumption	[MWh _{th}]	686
Net production of thermal energy	[MWh _{th}]	241 343
Amount of losses in distribution network	[MWh _{th}]	21 426
Share of losses in distribution network	[%]	8,88
Supply of customers with thermal energy	[MWh _{th}]	219 917

7.3.2 Production, supply and losses at DH Gjakova

- Thermal energy production

In the 2019/20 season, DH Gjakova has based the production of thermal energy on heavy fuel oil boilers. As noted above, this season the production of thermal energy has been quite reduced - gross production was 6,481 MWh_{TH} while net production of thermal energy 6,066 MWh_{TH}. For this production of thermal energy in this season 815 tons of fuel - heavy fuel oil is spent. It should be noted that, according to data reported by the enterprise, a low thermal efficiency of the heater of about 70% has been recorded.

- Thermal energy supply

DH Gjakova, during the 2019/2020 season has offered a reduced supply, due to the reduction of the heating season of around 50% and the reduction of the heating area. The supply of thermal energy customers in this season was 4,853 MWh_{TH}, which does not even closely meet the heating demand of all customers connected to the DH Gjakova system.

- System losses

With respect to losses in thermal energy production, it should first be mentioned that because some of the measurements are missing, namely, they are considered as unreliable due to the aging of the equipment, the determination of the losses includes some pre-assessed parameters such as efficiency boilers and the amount of own-consumption. The efficiency of boilers for the generation of thermal energy is estimated to be quite low, around 70%, causing a significant loss during the process of transforming the fuel energy into thermal energy, which is estimated to be 2,777 MWh_{TH}.

Losses in the primary distribution network are calculated as the difference between the amount of thermal energy introduced into the distribution network and consumption/supply. Due to the lack of metering of the amount of supplied thermal energy (in substations), some approximations have been made for calculation of supply, using in the first instance parameters such as: specific demand for heating capacity (W/m²) and full load hours, namely specific consumption (kWh/m²). So, the estimated value of consumption is 4,853 MWh_{TH}. By subtracting this consumption value from the amount of thermal energy introduced into the distribution network (6,066MWh_{TH}) it results that the quantitative losses in the distribution network for the 2019/2020 season are 1,213 MWh_{TH} or around 20%.

The following table presents the summarized data on production, supply and losses in the distribution network:

Tab. 7.4 Energy performance of DH Gjakova–2019/2020 season

DH Gjakova - heating season 2019-2020		
Description	Unit	Value
Amount of fuel- heavy fuel oil	[ton]	815
Calorific value	[MWh _{th} /ton]	11,36
Energy entered from fuel- heavy fuel oil	[MWh _{th}]	9 258
Boilers efficiency	[%]	70,00
Thermal energy gross production	[MWh _{th}]	6 481
Self-Consumption	[MWh _{th}]	415
Thermal energy net production/energy entering the distribution syste	[MWh _{th}]	6 066
Amount of losses in distribution system	[MWh _{th}]	1 213
Share of losses	%	20,00
Supply of customers with thermal energy	[MWh _{th}]	4 853

7.4 Overall production, supply and losses of thermal energy

The following table presents the summarized data on production, supply and losses for the entire thermal energy sector.

Tab. 7.5 Energy performance of thermal energy sector –2019/2020 season

Thermal energy sector - 2017/2018 season				
Description	Unit	DH Termokos	DH Gjakova	Total
Thermal energy gross production	[MWh _{th}]	246 733	6 481	253 214
Amount of losses in transmission network	[MWh _{th}]	4 704	0	4 704
Share of losses in transmission network	[%]	1,91	0,00	1,91
Self-consumption	[MWh _{th}]	686	415	1 101
Net production of thermal energy	[MWh _{th}]	241 343	6 066	247 409
Amount of losses in distribution network	[MWh _{th}]	21 426	1 213	22 639
Share of losses in distribution network	[%]	8,88	20,00	9,15
Supply of customers with thermal energy	[MWh _{th}]	219 917	4 853	224 770

7.5 Billing, collection and heating area

7.5.1 Billing and collection

With respect to billing, it should be mentioned that in the 2019/2020 season, the billing of thermal energy costumers was mainly based on the heating area (per square meter) whereas a smaller number of customers were billed based on the metered consumption. Concretely, at DH Termokos, 115 customers were billed with metered based consumption, mainly commercial and institutional customers; whereas DH Gjakova due to the lack of functional meters, bills almost completely according to the heating area.

DH Termokos, in the 2019/2020 season, has recorded an increase of billing compared to the last season, which is mainly due to the continuous improvement of supply. Actually, the billing in the 2019/2020 season was € 6,381,802, which represents an increase of € 93,006 or 1.5% compared to the 2018/2019 season (€ 6,288,796).). However, the planned level of billing was not reached even during this season which is mainly due to: i) billing deductions due to days without heat and due to low quality of supply (in some neighbourhoods in Prishtina); and ii) decrease on the heat area following the verification in the field.

From the total billing realized in the 2019/2020 season in an amount of € 6,381,802, the metered-based billing was € 2,352,997 while unmetered € 4,028,805; the ratio of metered and unmetered billing as well as the respective values are presented in the chart below.

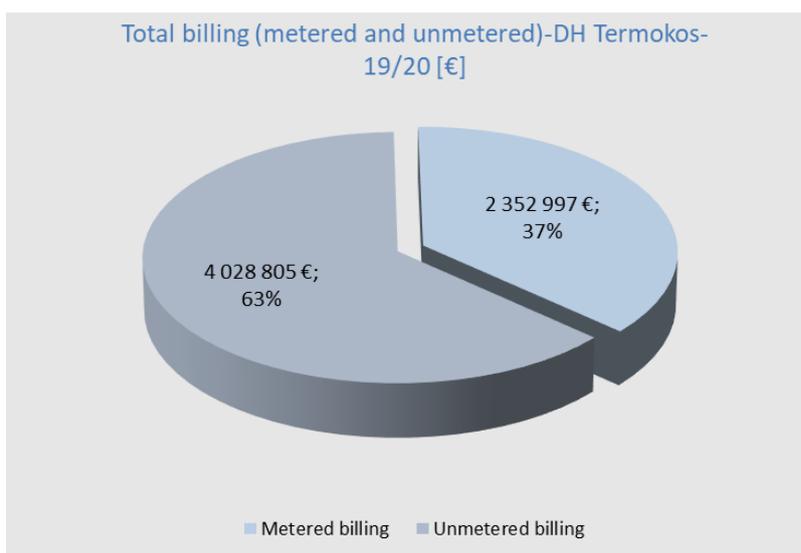


Fig. 7.2 Share of values of metered and unmetered billing in total billing

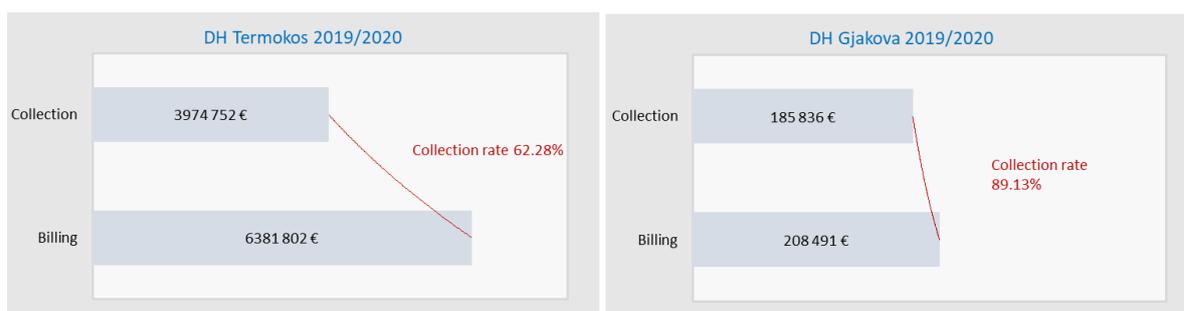
DH Termokos in the 2019/2020 season has collected the amount of € 3,974,752 which represents the total collection rate of 62.28%. It should be noted that the level of collection has marked a decrease of 8.58% compared to last season 2018/19 where the share of collection was 70.86%. It should be mentioned that in this season the collection of payments from the group of household customers is significantly lower (46.92%); while the collection of the payments of commercial and institutional customers was 76.05%, with a slight upward trend. Regarding the reduction of collection, one of the main factors is the COVID-19 pandemic, which has affected the payments of February - April 2020, especially for household customers.

As emphasized above, DH Gjakova, during the 2019/2020 season, has provided a reduced supply due to the halving of the heating season and the reduction of the heating area. Consequently, the billing in this season was quite small - € 208,491, while the collection as a monetary value amounted to € 185,836, which represents a level of 89.13% of collection.

Details about billing and collection are shown in the table and graph below.

Tab. 7.6 Billing and collection- 2019/2020

Heating Season 2019/2020	Heating Area [m ²]	Share	Billing [€]	Collection [€]	Collection Rate [%]
DH "Termokos" Pristina					
Household	765 830	57,42%	3 173 422	1 489 032	46,92%
Commercial and institutio	567 818	42,58%	3 208 380	2 485 720	77,48%
Total	1 333 648	100,00%	6 381 802	3 974 752	62,28%
DH "Gjakova" Gjakova					
Household	33 117	51,10%	89 563	76 927	85,89%
Commercial and institutio	31 695	48,90%	118 928	108 909	91,58%
Total	64 812	100,00%	208 491	185 836	89,13%

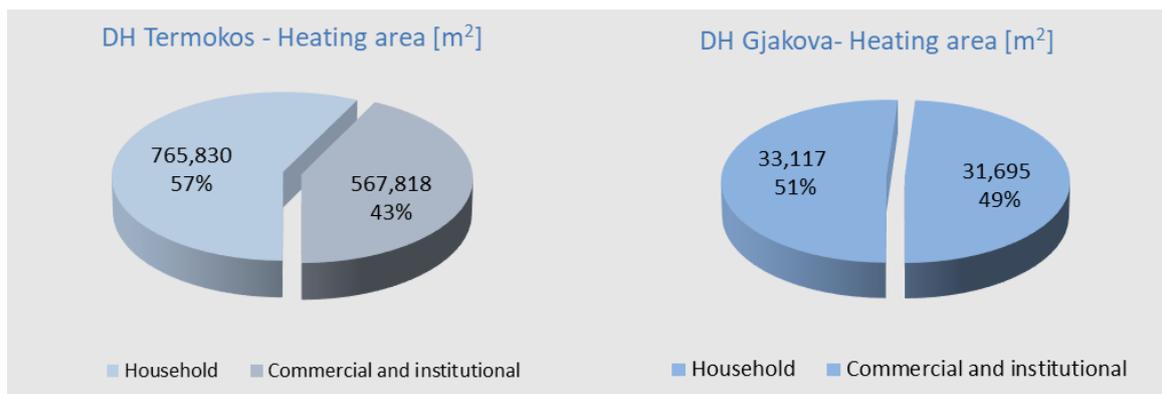

Fig. 7.3 Billing and collection for DH Termokos and DH Gjakova –2019/2020 season

7.5.2 Heating area

DH Termokos, in the 2019/2020 season has had a total heating area of customers of 1,333,648 m², which represents an increase of 39,400 m² or 3.04% compared to the heating area in the 2018/2019 season (1,294,248 m²).

Whereas DH Gjakova, for the reasons mentioned above, in 2019/2020 season has significantly reduced the heating area to only 64,812 m².

The following graphs show the heating area of DH Termokos and DH Gjakova, divided by customer groups.


Fig. 7.4 Heating area by customer groups in 2019/2020 season

8 NATURAL GAS SECTOR

8.1 Perspective of the development of natural gas sector in Kosovo

In order to open the prospect of developing the natural gas sector and meeting the obligations that Kosovo has towards the Energy Community Treaty, the Assembly of Kosovo, in June 2016, within the package of energy laws, has adopted the Law on Natural Gas, No. 05 / L-082.

This law has transposed the third package of relevant European legislation on natural gas, mainly:

- Directive no. 2009/73 / EC on the Common Rules on the Internal Market for Natural Gas; and
- Regulation no. 715/2009/EC on the Criteria of Access to Natural Gas Transmission Networks.

The Law on Natural Gas lays the groundwork for the legal and regulatory framework for the transmission, distribution, storage and supply of natural gas and the operation of gas transmission and distribution systems. Consequently, this law determines the organization and functioning of the natural gas sector and access to gas networks and market.

Kosovo's Energy Strategy 2017-2026 in Objective 4 included the development of natural gas infrastructure through connection to gas infrastructure projects in the South East Europe region, in particular with the TAP pipeline project ("Trans-Adriatic Pipeline") and with the Energy Community Gas Ring. In this regard, it should be emphasized that the gasification project, respectively the development of gas infrastructure is listed as a priority in infrastructure projects - energy field, approved by the National Investment Council and the Government of Kosovo.

It is estimated that the TAP pipeline project will have a positive impact on the development of gas infrastructure in the Energy Community respectively in the South East Europe region, providing opportunities for linking the planned regional projects such as the Ionian-Adriatic Pipeline (IAP), ALKOGAP and the Interconnection North Macedonia- Kosovo, projects that fulfill the so-called 'Energy Community Gas Ring'.

In mid-November last year, the Trans-Adriatic Pipeline (TAP) launched commercial operations becoming fully operational along 878 kilometers of its trajectory in Greece, Albania, the Adriatic Sea and Italy, enabling the first gas flows from gas sources "Shah Deniz II" in Azerbaijan. The initial capacity of TAP is planned to be 10 billion cubic meters (bcm) per year, with the possibility of increasing up to 20 bcm per year. TAP will allow interconnections along the pipeline to supply gas to other regional projects. Thus, with the state agreements with the "host" countries (Greece, Albania and Italy), the connection places and the amounts, respectively the gas capacities, are pre-determined.

In this context of regional developments in the gas sector, Kosovo has undertaken a number of activities related to current regional gas pipeline projects.

In addition to the Albania-Kosovo Pipeline project (ALKOGAP), for which the Pre-Feasibility Study was prepared in 2018, other initiatives have been undertaken for other projects of local or regional character - where the North Macedonia-Kosovo Pipeline should be emphasized. Progress in the development and implementation of these above-mentioned projects is considered important and a necessary precondition for the establishment and development of natural gas markets in Kosovo, Albania and North Macedonia. The following is an outline of these projects:

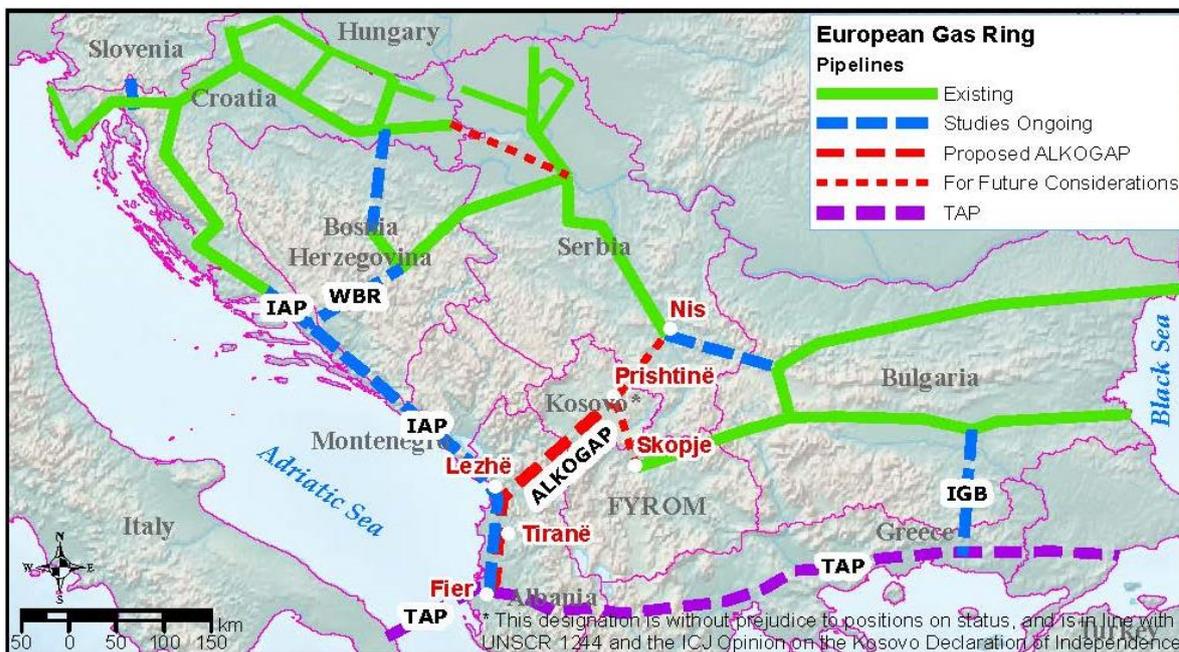


Fig. 8.1 Regional gas infrastructure projects and options for Kosovo's connection (including ALKOGAP and interconnection of gas North Macedonia- Kosovo)

The main development during 2020 is the study on the project: “Development of gas sector in Kosovo”, which was developed within the ‘Compact’ Program of Millennium Challenge Corporation (MCC). The Pre-Feasibility Study examines the most favourable options for natural gas supply, i.e the introduction of natural gas in Kosovo. The options are related to the development of the respective natural gas infrastructure, focusing on the interconnection with Macedonia, through which the interconnection continues in Greece to the LNG re-gasification terminal in REVITHUSA - south of Greece.

Work on drafting the pre-feasibility study began in February 2020, while the draft was finalized in July 2020. The study for this project has a significant number of components, where among the main ones are:

- Gas demand projections for the period of 20 years have included the sectors: residential, utilities (public and commercial/private), industrial, district heating and electricity generation (with gas fuel).
- Evaluation of the most favourable options for the introduction of natural gas and supply, where it should be emphasized that the most favourable option is considered the gas pipeline North Macedonia - Kosovo and the development of the internal natural gas network, for which the relevant estimations of investment cost have been made; the following figure presents this option:

- Financial Analysis and Cost-Benefit Analysis, where capital and operating investment costs are estimated in terms of analysing the profitability and sustainability of this infrastructure project, as well as the analysis of potential economic and financial benefits in relation to the project cost.

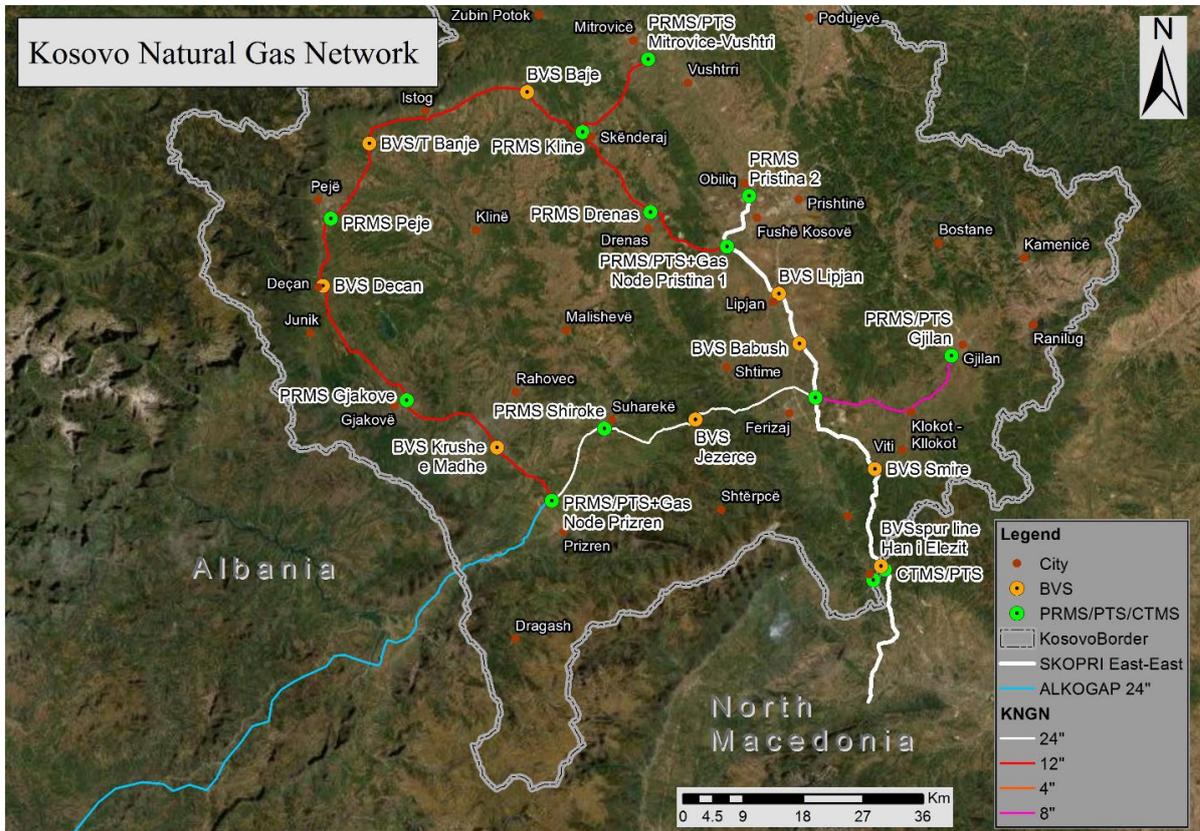


Fig. 8.2 Map of gas infrastructure development in Kosovo - source: MCC Pre-Feasibility Study: Development of the gas sector in Kosovo

It should be noted that ERO was involved in the ‘Project Stakeholders Group’ which followed the drafting of the study and contributed by providing relevant comments and inputs.

In terms of regional cooperation, ERO this year has also continued regular participation in the Gas Working Group of the Energy Community Regulatory Board (ECRB) and the Gas Forum, as well as in other regional events organized within of the Energy Community.

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