Republika e Kosovës
Republika Kosova - Republic of Kosovo

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

ANNUAL REPORT 2022

Pristina, March 2023

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INTRODUCTION

Dear all,

It is a special honour to present to the Assembly of the Republic of Kosovo the Annual Report of Activities of Energy Regulatory Office (ERO) and energy sector carried out during 2022.

The Annual Report of Energy Regulatory Office was compiled in line with legal provisions of the Law on Energy Regulator and is submitted to the Assembly of the Republic of Kosovo for information, review and approval purposes.

The report presents a detailed overview of activities and main achievements of ERO and the energy sector, along with the Financial Report of ERO for 2022. The report contains data and information on the most important events in energy market, review of energy tariffs, financial reporting of ERO, as well as data on regulated activities in the energy sector in the Republic of Kosovo.

ERO, as an independent agency, established by the Assembly of the Republic of Kosovo according to Articles 119.5 and 142 of the Constitution of the Republic of Kosovo, focuses its activity on the security of supply at affordable prices, protection of energy customers, as well as sustainable functioning of energy enterprises.

The year 2022, same as 2021, is considered as one of the most challenging years for the energy sector in Kosovo, due to the unprecedented increase of electricity prices in international markets.

ERO has undertaken the required actions within its mandate for overcoming the crisis of electricity prices, with the purpose of providing sustainable energy supply, carrying out an extraordinary review of electricity tariffs.

After a long process of several months, ERO during 2022 has determined the input values for the regulatory period 2023-2027 which are the main parameters used to calculate the Maximum Allowed Revenues of the Transmission and Market System Operator and the Distribution System Operator. The main parameters that have been determined by ERO during 2022 are: the Weighted Average Cost of Capital, the Loss Reduction Target, the Allowed Curve of Losses and the Efficiency Factor.

The joint market Kosovo - Albania has taken a special place in the activities of ERO during 2022, with an aim of functionalizing the coupling of energy market. It shall be mentioned that in 2022 the first joint meeting was held between the Regulator of the Republic of Kosovo and the Regulator of the Republic of Albania, where both Regulators have approved Rules of ALPEX, and upon the approval of these rules, the entire regulatory framework on the establishment of Kosovo-Albania joint market has been completed.

During 2022, as a need to encourage the construction of energy projects, ERO has revised and completed the Rule on Authorization Procedure on construction of new capacities from RES, in order to facilitate the current procedures, to include other procedures to issue the authorization for other energy projects as well to develop a competitive energy market. All these actions have been carried out to encourage new investments, to guarantee safety and stability of the energy sector in the Republic of Kosovo.

In order to facilitate the process of liberalization of electricity market, respectively by promoting competition in the electricity market, ERO during 2022 has licensed, extended or recognized nine (9) retail and wholesale electricity supply licenses, where three (3) of them are through the principle of reciprocity and the Memorandum of Understanding with the Energy Regulatory Authority of Albania.

Same as in previous years, also during this year ERO has cooperated closely with the parliamentary committees of the Republic of Kosovo, relevant ministries of the Government of Kosovo, Competition Authority, Energy Community Secretariat in Vienna, Energy Regulators Regional Association, Council of European Energy Regulators, and many other institutions.

On my behalf and of the other members of the Board of the Energy Regulatory Office, I want to express my gratitude to all the staff of ERO and the energy sector, for their work and dedication in providing services to customers during this year of the energy crisis.

Finally, ERO remains committed on the path towards energy transition, in line with the goals towards integration into the European energy market, always placing the customer at the centre of its policies.

Respectfully,

Ymer Fejzullahu,

Chairman of the Board

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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
TENGT	Thermal Energy and Natural Gas Department
LLD	Legal and Licensing Department
CPD	Customer 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 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
GPNL (PHLG)	Permanent High Level Group
GWh	Gig watt hour
HC	Hydropower Plant
MAR	Maximum Allowed Revenue
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
AEC	Albanian Energy Corporation
KfW	German Development Bank
CM	Council of Ministers
km	Kilometre
KOSTT	Transmission, System and Market Operators

PSRC	Public Services Regulatory Commission Kentucky
kV	Kilovolt
kW	Kilowatt
PL	Power line
MAP	Ministry of Public Administration
PPA	Power Purchase Agreement
MESP	Ministry of Environment and Spatial Planning
MVA	Megavolt ampere
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
SKE	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 (Regulator)

1 EXECUTIVE SUMMARY

Energy Regulatory Office (hereinafter the Regulator), in line with the legal requirements deriving from the Law on Energy Regulator (Law no. 05/L-084) presents the Annual Report 2022, for review, to the Assembly of the Republic of Kosovo. The Annual Report contains information on the activities related to the scope of the Regulator, as well as the functioning of the energy sector, analysing the data of the licensees, including the development of energy market in Kosovo.

Part of this report is also the financial report of the budget of the Regulator for 2022.

ERO Board, regarding different decision-making issues, has used the virtual means of electronic communication.

Energy sector in Kosovo, in the second half of 2021 was characterized with a sensitive increase of electricity prices, based on the prices on HUPX – Hungarian Electricity Exchange, which is taken as a reference due to its geographical proximity and liquidity – reached the value of 271.66 €/MWh, while an annual average for 2021 was €113.86/MWh (in the second half it reached the amount of €376/MWh).

Blocking transmission lines for commercial operation and non-allocation of transmission capacity at the interconnection border between KOSTT and EMS has contributed to the increase of electricity prices, consequently blocking the transmission lines for commercial operation. The lack of cross-border transmission capacities has caused serious difficulties for traders, such as the disruption of energy trade at this border, therefore reflecting the increase in the price of cross-border capacities at other borders and the price of energy imports, for Kosovo and Southeast Europe, and has caused difficulties in balancing the system.

Upon the commencement of operation as an Independent Regulatory Area within Continental Europe, from 14 December 2020 with the entry into force of the Connection Agreement between KOSTT and transmission system operators (TSOs) from Continental Europe, system balancing will be the full responsibility of KOSTT, which means covering all deviations from the Kosovo system.

The supply of the four northern municipalities of Kosovo, even during 2022 was carried out by KOSTT using the revenues from its own budget and the Government grant. The total cost of electricity supply in the four northern municipalities of the country is 63,177,300 €, of which 57,500,000 €, were from the Government grant, and paid 57,500,000 €, while the remaining part is owed to deviations caused to the European network of electricity transmitters.

This report presents the detailed data on the performance of the Energy Sector for 2022.

Total production of electricity in 2022 was 6,315 GWh, of which 5,678 GWh are from thermal power plants, while 637 GWh are from HC and other RES, and there is an increase of 1.7% compared to the total production in 2021.

The overall demand for electricity in the system in 2022 was 6,547 GWh, which represents a decrease of 4.90% compared to the demand in 2021. This demand was mainly met by local production, where thermal power plants have the largest participation, while the other part is covered by imports.

The total amount of electricity sold to final customers was 4,930.4 GWh, of which 3,116 GWh or 63.4% are for household customers, while the rest 1,804 GWh or 36.6% are for non-household

customers. The billing of non-family customers also includes the billing of unregulated customers, which in 2022 was 113.3 GWh.

For the category of the household customers, an average price of energy is 6.14 €cent/kWh, whereas for non-household customers, an average price of energy is 9.27 €cent/kWh.

Losses in transmission system are at an acceptable level of 1.26% towards energy entering transmission, and are at approximately the same level with losses in transmission networks in region and Europe.

Technical losses in distribution system are still quite high, and in 2022 comprised 12.21%, whereas unauthorized consumption of energy (hereinafter commercial losses) comprise 10.42 % of distribution demand, of which unbilled energy in four northern municipalities of Kosovo comprises 5.85 % (362 GWh).

The following table presents the main data realized in 2022 compared to the balance of 2022 and the realization of 2021, which shows that in order to balance the system-supply towards the demand, the need for imports and exports arises.

Tab. 1.1 Main data realized in 2022

	Unit	Production	Demand	Import	Export	Losses	
						Transmission	Distribution
Realization2022	**GWh**	**6,315**	**6,547**	**761**	**787**	**118**	**1,403**
Balance 2022	GWh	6,598	7,008	1,573	1,026	137	1,440
Realization/Balance	%	95.71	93.43	48.39	76.69	86.32	97.40
Realization 2021	GWh	6,207	6,885	1,311	835	120	1,538
Ratio 2022/2021	%	101.74	95.10	58.07	94.23	98.54	91.19

With respect to thermal energy sector, the situation remains mainly unchanged. The cogeneration project of DH Termokos has provided good results, therefore increasing heat quality for the customers connected to the network, whereas the biomass cogeneration project of DH Termokos has been finalized.

- The production of thermal energy in 2021/2022 in DH Termokos was 288 GWh_{Th} whereas DH Gjakova 12.7 GWh;
- The consumption of thermal energy in 2021/2022 in DH Termokos was 256. 6 GWh_{Th}, whereas DH Gjakova 10.17 GWh;
- Losses of thermal energy in 2021/2022 in DH Termokos were 12.84 % (in the thermal energy transport network), whereas DH Gjakova have been evaluated 20%.

There is no natural gas infrastructure and market in Kosovo, however energy laws and energy strategy foresee the development of the infrastructure of natural gas through the connection with gas infrastructure projects in the South-East Europe, through TAP (“Trans-Adriatic Pipeline) and gas interconnection Project North Macedonia – Kosovo.

With respect to the development of generation projects from renewable sources, during this year after the finalization of projects under Authorization by ERO Board, and following technical acceptance, one (1) project from Wind Turbines, the WIND PARK SELAC 3 project with a total installed

power of 34.47 MW. During this year, ERO has also handled requests/applications for generators to obtain the status of prosumer for self-consumption, which after meeting legal requirements in accordance with Authorization Rule and Support Scheme, were allowed to continue with the construction of generating capacities for self-consumption and in total have been installed 4.2 MW.

Following obligations of the Energy Community Treaty in order to create and operate a competitive electricity market, Kosovo and Albania have established Albanian Energy Exchange ALPEX, through which both countries envisage implementation of European Targeted Market Pattern, for the day-market advance (DAM) and intraday (IDM), characterized differently and as wholesale markets based in bilateral transactions and contracts concluded between two market participants outside the energy market (Over the Counter -OTC), or otherwise as an organized market of the day advance and intraday, organized by Albanian Energy Exchange- ALPEX.

ALPEX shall provide a transparent platform on energy trading, increase competition at the retail price level and settle price signals that will encourage new private sector investment, as well provide easier entry of new suppliers. and better absorption capacity of generation from renewable energy sources (REs). This trading platform is a big step in the establishment of the regional energy market of Western Balkans, which will ultimately benefit customers of Kosovo, Albania but, ultimately the entire region, and is the most efficient way to help maximize the use of cross-border capacity of electricity and transmission at the lowest possible price.

On 27th December 2022, Kosovo Energy Regulatory Office (ERO) and the Energy Regulatory Authority of Albania (ERRE) held a joint meeting in Pristina in order to approve trading rules and procedures for ALPEX, which was the final step in the framework regulations needed to enable the operation of energy exchange between the two countries.

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 Government, the Competition Authority, and all other stakeholders of the energy sector in the country and beyond.

Energy Regulatory Office (ERO) is an independent agency which is separated in legal and functional terms from any other natural or legal person. The duties and functions of the Regulator 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 improvement of 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, to ensure non-discriminatory access to all energy network users at prices reflecting real economic costs.

1.1 Board of the Regulator

The Board of the Regulator consists of 5 members including the chairman, who are appointed as fulltime 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.

At the end of 2022, Energy Regulatory Office consisted of the following members:

Ymer Fejzullahu, Chairman of the Board

Selman Hoti, Board member

Izet Rushiti, Board member

Lutfije Dervishi, Board member

Gani Buçaj, Board member

For decision-making purposes, in line with the authority given under the legislation in force, the Board of ERO 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 2022 held a total of fifteen (15) public sessions, in which 193 decisions were taken regarding the:

- Market monitoring and energy sector activities;
- 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.

All the reviewed and approved documents were initially published for public discussion, as required by law, in order 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 (TENGD)

The Board of ERO has supported the professional development of ERO staff aiming at the specialization of employees in the respective profiles within their responsibilities, through different trainings organized inside and outside the country.

1.2 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 the 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.

1.2.1 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.

1.2.2 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 as well as the 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, 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.

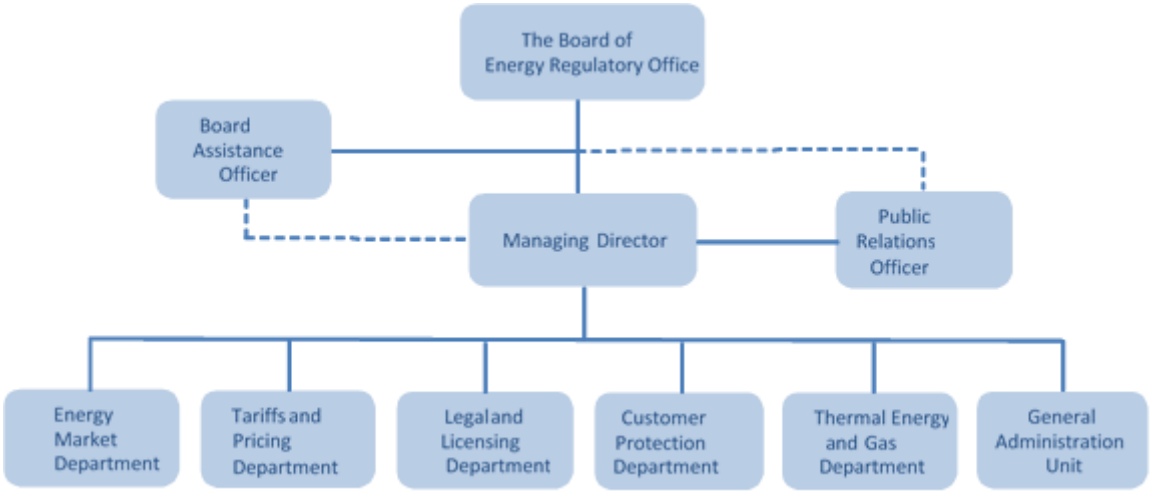


Fig. 1.1 Organizational Scheme of the Regulator

The total number of employees, as of the end of 31 December 2022, is 26 employees. This number includes 5 Board members and 21 staff members employed within the professional departments and Administration Unit. The educational structure of ERO staff consists of eleven 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 job positions in 2021 is provided in the table below.

Tab. 1.2 Organizational structure

Job positions	Planned positions	Employees	Vacant positions
ERO Board	**5**	**5**	0
Managing Director	1	1	0
Public Relations Officer	1	0	1
Board Assistance Officer	1	1	0
Administration Unit			
Head of the Administration Unit	9	9	0
Chief Finance Officer			
Procurement Manager			
Administrative Officer			
Data Management Officer			
Database Development Expert			
English Translator/Interpreter			
Receptionist			
Housekeeper/Driver			
Legal and Licensing Department (LLD)			
Head of Legal and Licensing Department	3	3	0
Legal and Monitoring Issues Expert			
License Monitoring Analyst			
Prices and Fees Department (PFD)			
Head of Prices and Fees Department	4	2	2
Economic Expert for Regulatory and Fees Issues			
Fees and Prices Analyst			
Fee Structure Analyst			
Energy Market Department (EMD)			
Head of Energy Market Department	4	3	1
Energy Supply and Market Structure Analyst			
Power System Analyst			
Market Monitoring Analyst			
Thermal Energy and Gas Department (TEGD)			
Head Thermal Energy and Gas Department	2	1	1
Thermal Energy Analyst			
Consumer Protection Department (CPD)			
Head of Consumer Protection Department	3	1	2
Consumer Protection Officer			
Standards Compliance Analyst			
Total	**33**	**26**	**7**

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

1.3 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 competences. 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.

2 ACTIVITIES OF ENERGY RREGULATORY OFFICE

2.1 Licensing of energy activities

The parties which are interested to carry out energy activities in Kosovo, must be granted a license from the Energy Regulatory Office, so that they can operate further for the production, distribution, supply, trade, etc., of electricity in Kosovo. With regards to the extent to how many MW or kW a license is required, this issue is described in more detail in the legislation in force, more specifically in Article 28, paragraph 2 of the Law on Energy Regulator and also in Article 3, paragraph 1 of the Rule on Licensing of Energy Activities in Kosovo (Rule ERO/No.07/2017, dated 31.03.2017).

Based on the legal provisions of the legislation in force, 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.

As stipulated in the above-mentioned paragraph, there are cases which do not require the issuance of license from the Energy Regulatory Office, as it is estimated that these activities do not have a large impact on the power system of Kosovo. Therefore, 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.

Although the Regulator does not issue a License for the three points mentioned above, however it is involved in these activities where generators for these activities cannot be built without obtaining an Authorization for Construction of Generating Capacity, issued by the Regulator.

Since its establishment until now, the Regulator has licensed about ninety (90) enterprises for various energy activities with different duration of license, depending on the lifespan of assets, of which about sixty (60) of them still have active licenses in the energy market in Kosovo, which are under the monitoring of Energy Regulator regarding their activities.

Even during 2022, as in previous years, interest of the Parties in licensing has not been absent, but compared to 2021, intensity of the Parties to obtain a license for energy activities has been on the decline, respectively the number of licenses handled in the process or release was much lower around 43%.

Focus of licenses issued by the Regulator has also been for various activities such as the supply of electricity in Kosovo, followed by the licensing of the activity of wholesale supply (trade) of electricity, extension of licenses, etc.

2.1.1 Licensing of electricity generation activities

Based on Article 29 of the Law on Energy Regulator, the electricity generation activity cannot be carried out without a license issued from the Regulator for the generators with a higher capacity than 5 MW.

The requests for licensing of energy generation activity have always been prevailing, including 2022, where as a result of this, the Regulator has continuously received applications for licensing of energy generation activity (from lignite, wind, water, solar, biomass etc.)

The Regulator, in addition to licensing of the generators which were constructed before the establishment of the Regulator, has also licensed other new generators which were constructed through the Authorization Procedure for Construction of New Capacities, led by the Regulator. Therefore, the license is obtained only by the generators above 5 MW who fulfil the criteria for licensing. Despite the requests for issuance of temporary licenses, during this year the Regulator did not issue temporary licenses for generation of electricity from hydro power plants, thus implementing the applicable legislation.

Below is presented a table with the data of enterprises that were granted an electricity generation License, their license was extended or are under the licensing process for electricity generation activity.

Tab. 2.1 Enterprises that were licensed, their license was extended or are in the process of licensing of electricity generation activity

No.	Name of the company	Description of licensed activity	License number	Address, headquarters of the licensee	Validity of the license
1	Matkos Group LLC (HPP Sharri)	Electricity generation (from water	ZRRE/Li_74/21	St.Shpetim Robaj, Pristina, Republic of Kosovo (Shterpce),	23.02.2021 – in process
2	"KelKos Energy" LLC (HPP Deçani)	Electricity generation (from water)	ZRRE/Li_49/20	St. Demë Ali Pozhari, No. 41, 51000 Deçan, Republic of Kosovo	12.11.2020 - 11.11.2059 - issuance Of license 15.10.2021-supsended with ruling Judgement of competent court 17.11.2022-in force after the issuance of Judgement in case no.KI202/21
3	"KelKos Energy" LLC (HPP Belaje)	Electricity generation (from water)	ZRRE/Li_50/20	St. Demë Ali Pozhari, No. 41, 51000 Deçan, Republic of Kosovo	12.11.2020 - 11.11.2059 – issuance of license 15.10.2021-suspended With Decision/ Judgement of competent court 17.11.2022-in force After the issuance of Judgement in case no.KI202/21
4	"KelKos Energy" LLC (HPP Lumbardhi II)	Electricity generation (from water)	ZRRE/Li_64/18 ZRRE/Li_64/20	St. Demë Ali Pozhari, No. 41, 51000 Deçan, Republic of Kosovo	14.10.2019 - 13.10.2020 temporary license 14.10.2019 – in licensing process...

Matkos Group L.L.C (HP Sharri) –Matkos Group LLC (HPP Sharri) –applied at the Regulator for electricity generation license from the Hydro Power Plant "HPP Sharri", on 23 February 2021, for an installed capacity of **6.453** MW. This hydro power plant is still in the licensing process, however given that it has not fulfilled the environmental criteria required by the applicable legislation, this enterprise still remains in the licensing process, despite the fact that the hydro power plant has been constructed according to the authorization procedure led by the Regulator.

Kelkos EnergyS L.L.C (HP Deçani, HP Belaje and HP Lumbardhi II) –this enterprise fulfilled all the licensing requirements, according to the instructions of the Regulator, was licensed by the Board of the Regulator for electricity generation, for two (2) generating units from: hydro power plant Deçani, with an capacity of **8.06 MW** and the hydro power plant Belaje, with a capacity of **9.8 MW**, whereas the hydro power plant Lumbardhi II, with a capacity of **6.2 MW**, due to the absence of the criteria required by the applicable legislation, had not managed to obtain an electricity generation license, therefore remaining in the licensing process since 21 December 2018.

Despite the licensing of these two units (HC Deçani and HC Belaje) by the Regulatory Board for a period of forty (40) years 12.11.2020-11.11.2059 (including the one-year temporary license), these Hydropower plants of the enterprise Kelkos Energy Sh.P.K. from operation since 15 October 2021, as a result of the suspension of their operation, by Decision and consequently by Judgment of the competent Courts of Kosovo and remain out of operation until 17.11.2022 after the issuance of the Judgment by the Constitutional Court of the Republic of Kosovo (see case no.KI202/21[1]).

2.1.2 Licensing of electricity supply activity

The request for licensing of electricity supply activity in Kosovo is always going towards the growth. Therefore, similarly as in 2021, this year, after fulfilling conditions for licensing, five (5) energy companies have been licensed by the Board of the Regulator, whereas one remains in the licensing process.

As a result of reaching the memorandum "Memorandum of Understanding for Mutual Recognition of Licenses for the Activity of Trading and Supply of Electricity between the National Regulatory Authorities of the Republic of Kosovo and the Republic of Albania" (MoU) dated 7th December 2021 between the Energy Regulatory Office and the Energy Regulatory Entity of the Republic of Albania, for the Mutual Recognition of Licenses, two (2) of the licenses on electricity supply have been recognized by the Board of the Regulator of Kosovo, based on the above-mentioned Memorandum.

[1] https://gzk.rks-gov.net/ActDocumentDetail.aspx?ActID=66625

Tab. 2.2 Enterprises that were licensed, their license was extended or are in the licensing process of electricity supply activity during *2022*

No.	Name of the company	Description of licensed activity	License number	Address, headquarters	Validity of the license
1	"FUTURE ENERGY TRADING AND EXCHANGE DYNAMICS" LLC	Electricity supply		Kalabria, A1, CII, No.25, Pristina, Republic of Kosovo	13.04.2018 - 12.04.2023 -license issuance 12.09.2022 - In process for license extension
2	MCM COMMODITIES LLC	Electricity supply	ZRRE/Li_78/21	Mother Teresa, 10000 Pristina Republic of Kosovo	31.03.2022-30.03.2027 Issuance of license
3	Društvo Elektrosever D.O.O.	Electricity supply	ZRRE/Li_70/20	Filipa Visnjica bb, North Mitrovica, Republic of Kosovo	24.06.2022-23.06.2027 Issuance of license
4	ETMT ENERGY LLC	Electricity supply	(ZRRE/Li_84/22)	Mother Teresa, Str. 22 b., Nr.5, Pristina, Republic of Kosovo	12.10.2022-11.10.2027 Issuance of license
5	NOA ENERGY TRADE LLC Branch in Kosovo	Electricity supply		St. Rexhep Luci, 5, 10000 Pristina, Republic of Kosovo	In force from 02.12.2021, for the period of 5 years. (RECOGNIZED ACCORDING TO THE PRINCIPLE OF RECIPROCITY on 26.05.2022)
6	EZ 5 ENERGY LLC – Branch in Kosovo	Electricity supply		Rr.Kuvendi i Bujanit, Nr.10., 10000 Prishtinë, Republika e Kosovës	In force from 07.03.2019, for the period of 5 years. (RECOGNIZED ACCORDING TO THE PRINCIPLE OF RECIPROCITY on 13.07.2022)

FUTURE ENERGY TRADING AND EXCHANGE DYNAMICS L.L.C. **-** has been initially licensed by the Regulator in 2018 for a period of five (5) years on the activity of electricity supply, the supply activity has started in 2022.

Since the license would expire in April 2023, during 2022 this enterprise has applied within the legal deadline on license extension and has submitted the necessary documents, which are in the process of review by the Regulator.

MCM COMMODITIES L.L.C **–**this enterprise, upon completing all documents, has been licensed by the Board of the Regulator for a period of five (5) years, as in the above table.

Društvo Elektrosever D.O.O. –which had applied during 2021 for certain Municipalities in the North of Kosovo, has been licensed this year by the Board of the Regulator for the activity of electricity supplies for a period of five (5) years.

Unlike other electricity supply licenses, which have a license for the entire territory of the Republic of Kosovo, this enterprise has been issued a license for the four (4) Serb-majority Municipalities of the Republic of Kosovo and North Mitrovica, Zveçan, Zubin Potok and Leposavic, as defined in the Article 5 of the "Energy Agreement" of 2013 year.

Enacting clause of the Decision V_1515_2022[2] dated on 24th of June 2022 on the issuance of the license also envisages terms of fulfilment of conditions by the Licensee, prior entering into function.

Should be emphasized that an enacting clause of the Decision includes obligations that "Drustvo Elektrosever" D.O.O. and other stakeholders involved in the Agreement and Conclusions shall fulfill within the deadlines set as in an enacting clause, and which obligations are integral part of the "Energy Agreement" of 2013 and "Conclusions of the EU Facilitator on the Implementation of the 2013 Energy Agreement" of 2015, and "Guidelines on the Implementation of Energy Agreements", dated 21.06.2022. Hence, the licensing of this enterprise is as a result of international agreements and talks held in Brussels.

Even within the deadlines foreseen in the Decision V_1515_2022 on licensing, during this year, all the points specified in the provision of the Decision have not been completed, and as a result the Licensee remains out of functioning until they are completed.

ETMT ENERGY L.L.C –this enterprise, upon completing all documents, has been licensed by the Board of the Regulator for a period of five (5) years.

NOA ENERGY TRADE L.L.C Branch in Kosovo –licensed in Albania for the activity of electricity supply, which can carry out the same activity with the same license in Kosovo, since the Board of the Regulator has recognized the license on the basis of the Principle of Reciprocity, which preceded to the Memorandum of Understanding with Albania. Deadline for carrying out the activity by this enterprise is the one defined in the license issued by the Board of the Regulator of the Republic of Albania.

EZ 5 ENERGY L.L.C. -Branch in Kosovo – also licensed in Albania for electricity supply activity, which can carry out the same activity with the same license in Kosovo, since the Board of the Regulator has recognized the license on the basis of the Principle of Reciprocity, similar to the aforementioned company NOA ENERGY TRADE LLC Branch in Kosovo.

2.1.3 Licensing of electricity wholesale supply (trade) activity

Similar to the previous year, this year the Regulator has also received a significant number of applications on licensing the activity of wholesale supply (trading) of electricity, although with lower intensity, unlike previous years (except 2021) where the application, respectively the licensing of this activity had decreased.

As in the activity of electricity supply, in addition to the licensing of the activity in accordance with the Rule on Licensing of Energy Activities in Kosovo and other legislation into force, there have been requests, respectively licensing on the basis of the principle of mutual recognition of licenses.

Law on Electricity foresees that licenses issued on the trading of electricity in other Contracting Parties of the Energy Community shall be recognized in Kosovo. Such licensed suppliers will be entitled to the market electricity without the need for additional license.

[2] https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Vendimet/Vendimet%202022/V_1515_2022_Vendim_Drustvo%20Elektrosever.pdf

Traders and suppliers registered in other Party of the Energy Community are entitled to participate in the electricity market, according to the principle of reciprocity and in accordance with the applicable market rules, balancing rules and fiscal rules.

In this regard, the Regulator has also amended the Rule on Licensing of Energy Activities in Kosovo, Rule ERO/No.02/2022[3] in which, among other things, regarding the principle of reciprocity, it is provided that as far as the legislation in force of the Republic of Kosovo allows, no application on licensing will be required for Wholesale Supply (trade) of electricity and Supply of electricity, in case an enterprise has a license issued by a Regulatory Authority of other Contracting Party of the Energy Community/a Member State of the European Union, or another country with which a bilateral agreement on the mutual recognition of licenses has been signed between the Regulator and the relevant Regulatory Authority, as well under the condition that they submit to the Regulator the evidence provided for in the present rule.

Tab. 2.3 Enterprises that were licensed, their license was extended or are in the licensing process for electricity wholesale supply (trade) activity in 2022

No.	Name of the company	Description of licensed activity	License number	Address, headquarters	Validity of the license
1	Interenergo d.o.o-Kosova LLC	Wholesale supply (trade) of electricity	(ZRRE/Li_56/16)	Sali Çeku gogaj Building, app.14, Deçan, Republic of Kosovo	27.02.2017-26.02.2022 Issuance of the license 27.02.2022-26.02.2027-Extension of the license
2	MFT Energy Kosoco L.L.C (ZRRE/Li_86/22)	Wholesale supply (trade) of electricity		St.Mujo Ulqinaku, NO.5,AP.10, Pejton, Pristina, Republic of Kosovo	12.11.2022-11.11.2027 Issuance of the license
3	SONEL 888 LTD Branch in Kosovo (ZRRE/Li_85/22)	Wholesale supply (trade) of electricity		Ali Vitia BII-Office Administration K.III/3/1, Pristina, Republic of Kosovo	12.11.2022-11.11.2027 Issuance of the license
4	NRG power LLC Branch in Kosovo (trade name NRG Power LLC)	Wholesale supply (trade) of electricity		St.Garibaldi No. 5/9, 10000 Pristinë, Republic of Kosovo	In force from 13.07.2022, For a period of 5 years. (RECOGNIZED ACCORDING TO THE PRINCIPLE OF RECIPROCITY on 29.12.2022)

From the table above, it is seen that during this year the Regulator has issued two (2) licenses for electricity wholesale supply (trade), has extended one (1), and also according to the principle of reciprocity and the Memorandum of Understanding with the Regulatory Authority of Albania, has recognized one (1) license.

[3] https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Licencat/2017.03.31_2022_Amendament_Rregulla_per_Licencimin_e_Aktiviteteve_te_Energjise_ne_Kosove.ALB.pdf

2.1.4 Licensing of thermal energy production activity

Likewise, electricity activities, the Regulator is competent for licensing of thermal energy activities, as well.

Considering that the licensing of energy enterprises of various electricity and thermal energy activities has started in Kosovo since 2006, the term of many licenses has expired. Legislation in force allows extension of the license term, in case the enterprise applies six (6) months prior to the expiration of license term. Many thermal energy licenses have expired during 2021 year, and those that have met conditions have already had their licenses extended, after providing necessary documents for the relevant activity.

The table below presents the enterprises which applied for extension of licenses for generation and co-generation of thermal energy (from biomass). One has its headquarters in Prishtina, whereas the other one in Gjakova.

Tab. 2.4 Enterprises that were licensed, their license was extended or are in the licensing process for thermal energy production activity

No.	Name of the company	Description of licensed activity	License number	Address, headquarters	Validity of the license
1	District Heating JSC	Thermal energy production (from biomass)	ZRRE/Li_75/21	Rezina, Gjakovë, Republic of Kosovo	19.11.2021-18.11.2051-Issuance of the license thermal energy from biomass 26.02.2021 –in licensing process for cogeneration
2	District Heating "Termokos" JSC	Thermal energy production (from heavy fuel oil)	ZRRE/Li_10/17	St. "28 Nëntori" nn-Dardani Pristina, Republic of Kosovo	23.03.2021 –in licensing process

District Heating JSC –the table above shows that this enterprise, with its headquarters in Gjakova, was issued the license for thermal energy generation from biomass for a period of thirty (30) years. The issuance of this license for generation of energy from biomass (as a renewable source of energy) has been conducted for the first time in Kosovo from the Board of the Regulator, following the fulfilment of the criteria set for license extension of this activity. The construction of this generator was followed and built through the authorization procedure led by the Regulator, similar to the construction of other generators for generation of energy from renewable energy sources (wind, water, etc.). The same enterprise has also applied for co-generation of electricity and thermal energy, whereas as it can be seen from the table above, the Board of the Regulator has not issued the license for co-generation of electricity and thermal energy, due to the fact that this enterprise has not fulfilled the criteria for licensing of this activity and remains in the licensing process until the obtaining of the environmental permit and the fulfilment of other required criteria such as measurements of gas emissions.

District Heating "Termokos" JSC –the only enterprise in the capital city for production of thermal energy has not managed to fulfil the criteria for extension of license for production of thermal energy (from heavy fuel oil) despite having applied within the legal deadline for extension of this license during 2021, and consequently has not been licensed by the Regulator's Board and remains in process

until all legal requirements are met, according to applicable law. It is worth mentioning that this enterprise is supplied according to the Thermal Energy Supply Agreement from TPP Kosova B which transports thermal energy through the thermal energy transport network. The license according to which this activity is performed is the License for co-generation of Electricity and Thermal Energy, which was issued by the Board of the Regulator to KEK, TPP Kosova B, during 2017 with a validity period until 2026.

2.2 Monitoring of energy enterprises

One of the main competences of the Energy Regulator in relation to the supervision/monitoring of energy enterprises, is given by the Law on Energy Regulator, especially Chapter XII, Law on Electricity and secondary legislation.

Therefore, the Regulator, based on applicable legal provisions, this year, same as other years, has continued the monitoring of enterprises licensed for energy activities, ensuring that the enterprises are acting in compliance with license criteria, implementation of rules, individual acts and other decisions issued by the Regulator or other applicable legislation. The monitoring is carried out by requesting reports and data from the licensees, holding meetings as well as carrying out visits (monitoring) the licensees, with or without warning.

During 2022, the Regulator has monitored the licensed energy enterprises and enterprises that are in the process for construction of new capacities.

During 2022, ERO, in accordance with the competencies granted by the Law on Energy Regulator, did the monitoring in relation to: electricity purchases, payments and nominations for the Distribution System Operator (DSO); Electricity Suppliers (KESCO); Market Transmission System Operator (KOSTT); and Kosovo Electricity Corporation (KEK), as well monitoring of DSO regarding planned and unplanned power outages for the months of November-December 2021.

Fig. 2.1 Reporting of licensee monitoring reports to the Board of ERO

ERO, within monitoring the electricity purchases, payments and nominations has compiled Reports with findings which were presented to the Board of ERO for review.

Board of ERO has reviewed findings in the Reports prepared by ERO experts, and has decided that the Monitoring Reports regarding electricity purchases, payments and nominations to be sent to the Parties for comment.

Monitoring reports have been sent to the Parties for comment, where they are obliged to provide written answers regarding findings in the respective reports within 15 calendar days.

ERO, upon receiving answers, has assessed comments sent by KEDS SH.A. and KESCO regarding monitoring of electricity purchases, payments and deviations in energy nominations, where it has proven that KEDS SH.A. and KESCO have not been able to dispute/argue findings through the Monitoring Reports related to electricity purchases, payments and nominations, and in accordance with legal provisions, a Notice has been sent regarding violations found on electricity purchases, payments and nominations from KEDS JSC and KESCO.

ERO in accordance with provisions of the Article 57, paragraph 7 of the Law on the Energy Regulator, sent the above-mentioned notices to KEDS and KESCO in order to enable a written response regarding violations committed, within fourteen (14) days of receipt of this notice.

ERO from KEDS and KESCO has received written responses regarding violations found with the Notices mentioned above, where justifications regarding violations found by ERO, as well other justifications other than those found through Notices of ERO.

ERO, in the meeting held on 16.11.2022, has reviewed and analysed answers presented by KEDS and KESCO and came to the conclusion that answers do not dispute any argument, whether formal or material, of the violations identified from ERO.

ERO, through Decision V_1617_2022, imposed a fine on the Distribution System Operator (DSO) due to legal violations found on electricity purchases, payments and nominations in the amount of 2,753,000€ (two million seven hundred and fifty-three thousand Euros).

Whereas through the Decision V_1618_2022 to the electricity supplier (KESCO) has imposed a fine due to legal violations found on electricity purchases, payments and nominations in the amount of 8,475,000€ (eight million four hundred and seventy-five thousand Euros).

ERO has also assessed aggravating circumstances when imposing the fine, due to the fact that the purpose of this punishment is not to damage an enterprise, but to enhance it, that in the future actions for the benefit of the Licensee's own legal safety to the conditions of the License and the mandatory legal requirements in force and applicable are respected.

Regarding the amount of the fine, ERO has taken into account violations found, and cumulatively all violations, a fine has been proposed based on the revenues that an enterprise has accumulated during the previous fiscal year, which are based on the Auditor's Report of Independent Financial Statements for Specific Purposes of the Regulator and sent to ERO.

ERO has also conducted Monitoring of the Distribution System Operator (DSO), related to planned and unplanned power outages for the months of November-December 2021.

ERO, for the purpose of this monitoring, has analysed the data sent by the licensee KEDS S.A. and has prepared a "monitoring report to the Distribution System Operator regarding planned and unplanned power outages for the months of November-December 2021" where findings of this monitoring are recorded.

Report with findings was sent to the Party KEDS for a response, where upon receiving responses, the responses sent by the party have been assessed and a Notice of non-compliance was compiled for KEDS with the regulatory framework and further remarks on improvement.

Through this notice, ERO has obliged KEDS JSC. to eliminate irregularities found in the present notice. Otherwise, ERO may initiate administrative procedures to undertake other measures, up to the defining of fine.

ERO, based on the findings and conclusions presented in the Report of the working group and in accordance with the provisions of the Law on Energy Regulator and the Rule on Administrative Measures and Fines, obliges KEDS within a period not longer than thirty (30) days from the date of receipt of this notice, through a document called "Action Plan", to inform the Board of ERO regarding actions that will be taken to improve and eliminate irregularities mentioned above, as well actions to prevent repetition of the detected irregularities.

Regarding Monitoring of the Transmission System and Market Operator (KOSTT) and Kosovo Energy Corporation (KEK), Monitoring reports have been sent to the Parties for comment, where they are obliged within fifteen (15) calendar days to provide written answers regarding the findings in the relevant reports.

ERO, upon receiving answers, evaluated the comments sent by KOSTT regarding the monitoring of electricity purchases, payments and deviations in energy nominations and KEK regarding electricity purchases, which remained to be examined in the Board sessions during 2023, in accordance with legal provisions and deadlines, where procedural actions will be taken after the review.

The completed reports on the monitoring of energy enterprises are published on the website of the Regulator.

Monitoring according to the Reporting Manual in the Energy Sector– according to this manual, the licensed energy enterprises have submitted to the Regulator immediate reports, quarterly reports or annual reports, depending on the requirements prescribed in this manual or other requirements of the Regulator.

For some Articles of the license, of a more particular importance, i.e. breach of license terms that may have a serious impact on government policies, customers or the cost of compensation, the licensee must notify the Regulator immediately. In case such notification is not made in time, the Regulator has the right to impose administrative measures or fines in accordance with the Rule on Administrative Measures and Fines.

Monitoring of the Compliance Program of the Distribution System Operator (KEDS JSC)– this programme is in force since 2015 (V_750_2015), which is approved by the Board of the Regulator. Following the request of the Regulator, the same was modified and approved by the Board of the Regulator during 2020 (V_1223_2020), where according to KEDS Compliance Officer (approved by Decision V_1256_2020) has reported to the Regulator on the fulfilment of obligations set in this programme.

2.2.1 Administrative judicial disputes

During 2022, several decisions of the ERO have been challenged in the Basic Court in Prishtina, Department for Administrative Matters, through the suit-claim of interested Parties, as well with requests to postpone execution of decisions until the review of the suit-claim in the case of merit.

The disputed decisions are related to the decision V_1489_2022 on the retail electricity tariffs to be collected by the Public Service Obligatory Supplier (KESCO), from two different Parties.

Basic Court in Pristina, Department for Administrative Matters, through Decision A. No. 656/2022 dated 08.04.2022 with which the request of the plaintiff-proposer Democratic Party of Kosovo (PDK) has been approved, with address: Str. "Mother Teresa" No. 20, 10000 Pristina Republic of Kosovo, which according to the authorization is represented by the General Secretary Bajrush Xhemaijli, on the postponement of execution of decision V_1489_2022 dated February 08, 2022 with protocol No. 077/22, dated 16.02.2022 issued by the Board of the Energy Regulatory Office (ERO), until the Court decides with a final decision on the plaintiff's lawsuit.

ERO, as a respondent, has used all regular and extraordinary means provided by the Law on Administrative Conflicts, following all regular steps in the procedure, and upon submitting the request on extraordinary review of the court decision against the Ruling of the Basic Court in Pristina,

Department for Administrative Matters, A.no.656/2022 dated 08.04.2022 and certified by the Decision of the Court of Appeals of Kosovo, Department for Administrative Matters AA. no. 364/2022

dated 17.05.2017, the respondent Office of the Regulatory Energy Office (ERO), in accordance with provisions of the Article 24 of the Law (No. 03/L-202, Year V/No. 82/21 October 2010) on Administrative Conflicts at the Supreme Court of Kosovo, by the Judicial Panel of this Court through the Judgment ARJ no. 45/2022, dated 13 June 2022, hereby amended the Ruling of the Court of Appeals - Department for Administrative Matters A.A. 364/2022, dated 17.05.2022 and Ruling of the Basic Court in Pristina - Department for Administrative Matters A. No. 656/2022, dated 08.04.2022, thus was rejected as unfounded the request-proposal of the Party of the Democratic Party of Kosovo to postpone execution of the Decision of the respondent of the Energy Regulatory Office, prot. No. 077/2022 Decision V_1489_2022 dated 08.02.2022, until the decision according to the lawsuit with a final decision in the court proceedings.

Also, for the case in question, a request has been initiated in the Constitutional Court of the Republic of Kosovo by the interested Party, where ERO has submitted a response to such a request, within the legal deadlines, at the Constitutional Court of Kosovo, which is under processed.

Also, against this decision V_1489_2022, at the Basic Court in Pristina, Municipality of Obiliq also has submitted a suit-claim, inquiring through the request postponement of execution of the decision until the review of the case of merits in the meritorious review.

The first instance court and the second instance court have rejected such request of the plaintiff, even though the Plaintiff has submitted a request for extraordinary review at the Supreme Court.

Supreme Court of Kosovo through the Judgment ARJ.UZVP. no. 106/2022, dated 27.102.22, has rejected as unfounded the request of the Plaintiff Municipality of Obiliq for an extraordinary review of the court decision, submitted against the decision of the Court of Appeals in Pristina AA. UZh. No. 496/2022, dated 18.07.2022.

KOSTT JSC has also initiated a legal dispute, through which requested from the court the postponement of execution of the Article 5 of the License of the respondent ERO.

ERO, through a written response has rejected the claimant's request on postponement of execution, on the grounds that postponement of execution of the Article 5 of the License would be contrary to the public interest and damages would be irreparable for the claimant as the regulated energy enterprise, as well for each customer who is supplied with electricity, since the plaintiff from year 2017 is being subsidized by the Government and the Assembly of the Republic of Kosovo for the applicable mandatory legal costs.

The first instance court through decision A. No. 1156/22 has rightfully rejected as unfounded the request of KOSTT JSC., and likewise the Court of the second instance through the Ruling AA. No. 475/2022 has rejected as unfounded the complaint of the plaintiff KOSTT, while it has confirmed the decision of the first instance as right.

Legal entity AFA ENERGY LLC has also initiated a legal dispute, due to the rejection of ERO to extend authorization for construction beyond legal deadlines. However, also the first, second instance and the Supreme Court of Kosovo upon submitting the request on extraordinary review through ARJ Judgment no. 22/2022, has rejected such request of the Plaintiff as unfounded, and confirmed the decision of the second instance and that of the first instance.

An entity in question has submitted request to the Constitutional Court, where the respondent ERO has presented arguments and objections through written responses to the Constitutional Court, which is dealing with the case in question.

It is also worth to emphasize that from the Constitutional Court of Kosovo, we have received the notification related to the case No.ref.:1416/22/bb, dated 29 July 2022, by which has been requested that the Constitutional Court of the Republic of Kosovo to be notified if the submitter of the request, the company Elektrosever D.O.O. has been provided with a license by ERO, and if not, what are the reasons that pushed ERO to not provide the submitter of the request a license until now.

ERO through a written response, has informed the Constitutional Court that on 24 June 2022, with decision V_1515_2022, has issued the License on electricity supply to the company Društvo Elektrosever D.O.O. with No. of License ERO/Li_70/20, for the five-year period, from 24 June 2022 until 23 June 2027.

During 2022, ERO also has received the AA Judgment. No. 990/21 of the Court of Appeals in Pristina, by which the complaint of the respondent ERO was rejected as unfounded, whereas Judgment of the Basic Court in Prishtina - Department for Administrative Matters A. No. 1373/17, dated 15.09.2021 has been confirmed.

ERO within the legal deadlines, has also submitted the request for an extraordinary review of court decisions, to the Supreme Court, with the request to approve the request as grounded and to amend the Judgment of the Basic Court in Prishtina A. No. 1373/2017, dated 15.09.2021, and Judgment of the Court of Appeals in Prishtina AA. No. 990/21, dated 04.10.2022, since the same were issued in violation of substantive and procedural law, which have an impact on the fair resolvment of the issue.

Respectively, to be Approved request of the Respondent, the Energy Regulatory Office of the Republic of Kosovo, and to annul Judgment of the Basic Court in Prishtina A. No. 1373/2017, dated 15.09.2021, and Judgment of the Court of Appeals in Prishtina AA. No. 990/21, dated 04.10.2022, and the matter is returned to the Basic Court in Prishtina - Administrative Department, for retrial.

ERO is still waiting for the Judgment of the Supreme Court of Kosovo, regarding the review of the request for an extraordinary review of the court decision.

2.3 Renewable Energy Sources (RES)

The applicable Law on Energy No. 05/L-081 sets up the policies related to RES development, aiming to promote the sustainable and economical use of RES domestic potentials, in order to meet the energy demand, 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 carried out 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.

It shall be emphasized that Republic of Kosovo is a signatory Party to the Energy Community Treaty which was signed on 25 October 2005, ratified and entered into force on 1st of July 2006 and began to be implemented on 1st of July 2007. Based on this, Kosovo has received legal obligations to fulfill all obligations related to the energy sector, where the mandatory obligation to achieve RES targets by 2020, including the construction of new generating capacities from the pure sources.

In order to fulfill the legal obligations to reach the mandatory for RES targets, Ministry of Economic Development has issued Administrative Instruction no. 01/2013 and be supplemented and amended with AI No. 05/2017 by which has defined annual and long-term RES targets for Energy.

Administrative Instruction has foreseen that the mandatory target from Renewable Energy Sources until 2020 was 25% of the final gross energy consumption as defined in the Article 4 of the Decision of the Ministerial Council of the Energy Community No. D/2012/04/MC –EnC.

ERO, in order to support development of investments in the Renewable Energy, in 2016 year with Decision V-810-2016, has defined the “feed-in” fees on the production of electricity produced by RES. In which: electricity produced by water (hydropower plants <10MW) has a price of 67.47€/MWh, electricity produced by wind has a price of 85.0€/MWh, electricity produced by solid biomass has a price of 71.3€/MWh and electricity produced by solar/photovoltaic panels for targets up to 10 MW according to the previous instruction has been 136.4€/MWh.

Also, in order to achieve the RES objectives, the lifespan of the Energy Purchase Agreement between an investor and TSO/MO was guaranteed, where for the electricity produced by the photovoltaic panels and energy produced by the wind turbines have duration of twelve (12) years, whereas for other sources (hydropower and solid biomass) they will have duration of ten (10) years, with prices (feed-in tariffs) applicable and accepted in the support scheme. While for the generators of self-consumption has guaranteed the contract (MBE) of twelve (12) years, which is related to the supplier of the customer producer.

ERO at the end of 2020 year with the decision V_1321_2020 had decided to discontinue application of the Support Scheme with Incentive fees ("Feed-in") for the support of new projects, in the construction of new generating capacities for the production of electricity from Renewable Energy Sources (RES) for the targets 2021-2030.

Also, through that decision has been decided that admission of applications on obtaining authorization for the construction of new generation capacities, to be treated with an incentive fee "feed-in", by BRE, from the date of entry into force of the present Decision.

ERO has also emphasized that decisions on preliminary or final authorization for the construction of new generating capacities that were issued prior to the entry into force of this Decision, shall be handled according to the legal provisions of Rule No. 10/12017 on the Support Scheme and Decision V_810-2016 of 19 May 2016, issued by the Board of ERO.

Through the decision, ERO has emphasized that, in accordance with the legal obligations and in cooperation with Institutions of the Republic of Kosovo, will undertake actions for the development of projects from Renewable Energy Sources for the 2021-2030 targets through the various forms of

auctions, in the selection of beneficiaries from other forms through Premium Rates or similar, according to the best practices in favour of the public interest.

It shall be emphasized that the Energy Strategy of the Republic of Kosovo for the period 2022-2031 and the Draft Law on Renewable Resources are in the process of approval, where they also present obligations for ERO, on the implementation of Renewable Resources policies and drafting of the legal framework to achieve energy objectives.

ERO during 2022 as a need for the construction of energy projects has revised Rule No. 11/2017 on the Authorization Procedure for the construction of new capacities by RES. The goal of the review was to include the procedures on issuing an Authorization for other energy projects, on the development of a competitive energy market and that encourage investments to guarantee the safety and stability of the energy sector in the Republic of Kosovo.

ERO upon conducting public consultation process dated 16.11.2022 has approved: "Regulation No. 03/2022 on the authorization procedure for the construction of new generation capacities, new gas transmission and distribution systems, including interconnectors, direct pipelines for thermal energy and Direct Electricity Lines and Direct Pipelines for Natural Gas Transmission."

During 2022, ERO also has drafted the Draft/Regulation on self-customers with Renewable Sources, where principles and regulated mechanisms are defined on the support of electricity customers who want to generate electricity in their premises based on the renewable technology for the personal use.

Through the present draft/Regulation, possibilities have been created for the end customer operating within his premises located within narrow limits, to produce Renewable electricity for own consumption, as well which may preserve or sell the Renewable electricity produced by himself, provided that, for a self-customer of non-housing Renewable resources, these activities do not constitute his main commercial or professional activity.

ERO has completed public consultation procedures regarding this draft/regulation and during the beginning of 2023 is expected to be approved and to commence with implementation.

During 2022, ERO has handled projects that were in the process of being finalized according to the authorization in accordance with the Rule on the Authorization Procedure for the construction of new generation capacities based on BRE and the Rule for the Support Scheme from Renewable Energy Sources.

2.4 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 in order to obtain the authorization each applicant has been subjected to a regularity analysis and correct fulfilment of the legal, administrative, technical, financial documentation and environmental issues, as well as obtaining relevant permits 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 based on RES.

During 2022, ERO has received 2 applications from various legal entities on obtaining authorization for the construction of new generating capacities from RES with a total capacity of 6.75 MW. 114 requests on Authorization for self-consumption generators with a total capacity of 4.202 MW have been received and reviewed.

2.4.1 Applications that are under review process at the Regulator

ERO, 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.

Tab. 2.5 Enterprises that are under the review process for obtaining the preliminary authorization

No.	Legal entity	Type	Location	Installed capacity	Review process
1	SOLAR ENERGY GROUP EUROPE LLC	Solar	BEC - VRANIQ - Gjakova	150 MW	process
2	EV WIND PARK LLC	Wind	Wind Park ZATRIQ 1, Rahovec	35 MW	process
3	EV WIND PARK LLC	Wind	Wind Park ZATRIQ 2, Rahovec	35 MW	process
4	EUROKOS DD LLC	Hydropower plant	DRINI PSHP -REVERZIBIL/ Prizren	250 MW	process
5	DARDANA INVEST LLC	Wind	WIND PARK KITKA 2/Kamenica	33 MW	process
6	NIN TECHNOLOGY LLC	Biomass	Ferizaj	5.2 MW	process

2.4.2 Projects in the construction process according to Final Authorization

Projects which were designed and finalized according to the dynamic implementation plan and according to the deadlines set by the Rule No. 11/2017 on the Authorization Procedure, there are two (2) projects where according to the dynamic implementation plan in the re-procedure one (1) hydropower project with an installed capacity of 3.45 MW, and one (1) project from solar panels with a capacity installed of 3 MW. These projects are being implemented according to the regulated framework with the reference prices.

Whereas, the project of the company Bondcom Energy Point LLC., on the generation of electricity from the ERA Wind Park Bodakova with a capacity of 11 MW, is in the process of being executed according to the legal deadlines, where shall be finalized by April 2023.

2.4.3 Entry into operation of RES generators

During this year, following the finalization of projects according to the Authorization from ERO Board, and following technical admission, one (1) project has entered into operation, with a total installed capacity of 34.47 MW.

2.5 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 2022.

Tab. 2.6 Self- consumption authorizations

Self-consumption decisions	No. of decisions issued
Solar	117
Total	117

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

Tab. 2.7 Enterprises that were issued the decision for construction of self-consumption generators

No.	Legal entity	Subject	Location	Installed capacity	Decision Issue Date
1	HIB PETROL SH.P.K.	Solar	vill. "Shkabaj" Prishtina, Republic of Kosovo	100 kW	14.01.2022
2	PROEX SH.P.K.	Solar	Str. "Agim Ramadani", Mitrovica, Republic of Kosovo	100 kW	14.01.2022
3	N.T.P. V-T KASTRATI	Solar	vill. "Kërpime", Podujeva, Republic of Kosovo	10.92 kW	14.01.2022
4	INTERING SH.P.K.	Solar	Str. "Ali Hadri", Obiliq, Republic of Kosovo	43.69 kW	14.01.2022
5	EXPRESS POSTA L.L.C.	Solar	vill. "Uglar", Fushë Kosova, Republic of Kosovo	8 kW	14.01.2022
6	Individual Business Q.G.	Solar	Industrial Zone, Prishtina, Repulbic of Kosovo	100 kW	16.02.2022
7	Individual Business Q.G.	Solar	Industrial Zone, Prishtina, Repulbic of Kosovo	100 kW	16.02.2022
8	ANANAS IMPEX SH.P.K.	Solar	vill. "Livadic;", Podujeva, Republic of Kosovo	48 kW	16.02.2022
9	N.P.SH. ALBATROS	Solar	Str. "Besim Shala", Prizren, Republic of Kosovo	18.4 kW	16.02.2022
10	GEMIX SH.P.K.	Solar	vill. "Korretica e Eperme", Drenas, Republic of Kosovo	100 kW	16.02.2022
11	VETONI 2 SH.P.K.	Solar	vill. "Mirushë", Malisheva, Republic of Kosovo	60 kW	16.02.2022
12	VERONA	Solar	vill. "Xërxë", Rahovec, Republic of Kosovo	14 kW	16.02.2022
13	Natural person V. M.	Solar	Str. "Ali Bajraktari" nn, Gjakova, Republic of Kosovo	10 kW	31.03.2022
14	KATANA SH.P.K.	Solar	Str. "Hasan Prishtina", Obiliq, Republic of Kosovo	30 kW	31.03.2022
15	PROTON SH.P.K.	Solar	Str. "Veternik" Çagllavica, Republic of Kosovo	89.1 kW	31.03.2022
16	RIMA GROUP SH.P.K.	Solar	vill. "Rimanishte", Besi-Prishtina, Republic of Kosovo	20.86 kW	31.03.2022
17	DORA - FIX SH.P.K.	Solar	Highway Peja-Prishtina, Str. "Avni Miftari", Drenas, Republic of Kosovo	100 kW	31.03.2022
18	COLLEGE - UBT SH.P.K.	Solar	Prishtina-Ferizaj highway, Lipjan, Republic of Kosovo	48 kW	31.03.2022
19	Natural person XH. I.	Solar	fsh "Llugat", Istog, Republic of Kosovo	5 kW	31.03.2022
20	Natural person B. K.	Solar	vill. "Çikatove", Drenas, Republic of Kosovo	5 kW	31.03.2022
21	Natural person K. B.	Solar	vill. "Kishnica", Graçanica, Republic of Kosovo	6.96 kW	31.03.2022
22	LONI GLASS SH.P.K.	Solar	vill. "Greme", Ferizaj, Republic of Kosovo	65 kW	24.06.2022
23	PROFILE STAR SH.P.K	Solar	vill. "Greme", Ferizaj, Republic of Kosovo	75 kW	24.06.2022
24	RINA COMERCE SH.P.K.	Solar	vill. "Vrelle", Istog, Republic of Kosovo	75 kW	24.06.2022
25	UNICRON SH.P.K.	Solar	"Peja", Republic of Kosovo	89.1 kW	24.06.2022
26	AGRO PROJECT LS SH.P.K.	Solar	vill. "Gurakoc", Istog, Republic of Kosovo	10 kW	24.06.2022
27	LESNA INDESIGN SH.P.K.	Solar	vill. Konjuh, Lipjan, Republic of Kosovo	100 kW	24.06.2022
28	TOBACCO HOLDING GROUP SH.P.K.	Solar	vill. Laplje Selo, Gracanica, Republic of Kosovo	50 kW	24.06.2022
29	AGRO VIKTORIA SH.P.K.	Solar	vill. Vitomirica, Peja, Republic of Kosovo	5 kW	24.06.2022
30	MOBILE DECOR SH.P.K.	Solar	"Peja", Republic of Kosovo	30 kW	24.06.2022
31	INTERING SH.P.K.	Solar	Ali Hadri, Obiliq, Republic of Kosovo	75 kW	24.06.2022

No.	Legal entity	Subject	Location	Installed capacity	Decision Issue Date
82	Natural person P.N.	Solar	Dol, Municipality of Gjakova, Republic of Kosovo	10 kW	16.11.2022
83	X.PLAST SH.P.K.	Solar	Raker, Municipality Ferizaj, Republic of Kosovo	100 kW	16.11.2022
84	HIP PETROL SH.P.K.	Solar	Fuse Kosova, Republic of Kosovo	100 kW	16.11.2022
85	RESTAURANT NATYRAL BI SH.P.K.	Solar	Sojourn, Municipality Ferizaj, Republic of Kosovo	100 kW	16.11.2022
86	SOLE KOSOVO SH.P.K.	Solar	Fuse Kosova, Republic of Kosovo	100 kW	16.12.2022
87	A&M SH.P.K.	Solar	Graçanica, Republic of Kosovo	30 kW	16.11.2022
88	Natural person Y.S.	Solar	Greme, Municipality Ferizaj, Republic of Kosovo.	5 kW	16.12.2022
89	Natural person B.B.	Solar	Neodymium, Municipality Ferizaj, Republic of Kosovo.	8 kW	16.11.2022
90	Natural person M.K.	Solar	Balance, Municipality of Malisheva, Republic of Kosovo	5 kW	16.11.2022
91	Natural person F.SH.	Solar	Municipality of Mitrovica, Republic of Kosovo	7 kW	16.11.2022
92	Natural person K.S.	Solar	Municipality Ferizaj, Republic of Kosovo.	8 kW	16.11.2022
93	Natural person I.A.	Solar	Municipality Ferizaj, Republic of Kosovo.	8 kW	16.11.2022
94	Natural person A.M.	Solar	Municipality Ferizaj, Republic of Kosovo.	7 kW	16.11.2022
95	Natural person M.M.	Solar	Municipality Ferizaj, Republic of Kosovo.	15 kW	16.11.2022
96	Natural person V.I.	Solar	Laggard e Re, Municipality of Lipjan, Republic of Kosovo	12 kW	29.12.2022
97	HOLE L.L.C.	Solar	Municipality of Obiliq, Republic of Kosovo	49 kW	29.12.2022
98	Natural person S.L.	Solar	Municipality of Ferizaj, Republic of Kosovo	6 kW	29.12.2022
99	VIER PFOTEN KOSOVA OJQ	Solar	Marzhën, Municipality of Prishtina, Republic of Kosovo	13 kW	29.12.2022
100	INTERPLAST GROUP SH.P.K.	Solar	Municipality of Mitrovica, Republic of Kosovo	40 kW	29.12.2022
101	Natural person F.N.	Solar	Laggard Pershing, Municipality of Prishtina, Republic of Kosovo	10 kW	29.12.2022
102	AUTOTRADE SH.P.K.	Solar	Collapsible, Municipality of Gracanica, Republic of Kosovo	5 kW	29.12.2022
103	N.H.T. FRESKIA A.D	Solar	Burimi, Municipality of Istog, Republic of Kosovo	49 kW	29.12.2022
104	ELKEKTROMETALI SH.P.K.	Solar	Municipality of Ferizaj, Republic of Kosovo	72.78 kW	29.12.2022
105	Natural person F.I.	Solar	Municipality of Ferizaj, Republic of Kosovo	7 kW	29.12.2022
106	ASGETO SH.P.K.	Solar	Gjeneruara, Municipality of Gracanica, Republic of Kosovo	79 kW	29.12.2022
107	PROMOPLAST SH.P.K.	Solar	Municipality of Ferizaj, Republic of Kosovo	69.37 kW	29.12.2022
108	Natural person SH.B.	Solar	Municipality of Ferizaj, Republic of Kosovo	8 kW	29.12.2022
109	DST PRODUCT SH.P.K.	Solar	Municipality of Ferizaj, Republic of Kosovo	30 kW	29.12.2022
110	Natural person A.K.	Solar	Municipality of Prishtina, Republic of Kosovo	5 kW	29.12.2022
111	Natural person D.K.	Solar	Municipality of Prishtina, Republic of Kosovo	5 kW	29.12.2022
112	Natural person I.M.	Solar	Municipality of Prishtina, Republic of Kosovo	14.9 kW	29.12.2022
113	Natural person DS	Solar	Str. Justify Mending, Municipality of Prishtina, Republic of Kosovo	8 kW	29.12.2022
114	HIB PETROL SH.P.K.	Solar	Resocialization i Wherever, Municipality Ferizaj, Republic of Kosovo	60.76 kW	29.12.2022
115	Natural person B.S.	Solar	Ger lice, Municipality Ferizaj, Republic of Kosovo	6 kW	29.12.2022
116	Natural person A.R.	Solar	Chevy Maladroit, Municipality Ferizaj, Republic of Kosovo	14.9 kW	29.12.2022
117	Natural person S.S.	Solar	Greme, Municipality Ferizaj, Republic of Kosovo	5 kW	29.12.2022
Total				4202.85 kW	

No.	Legal entity	Subject	Location	Installed capacity	Decision Issue Date
32	Natural person F. XH.	Solar	vill. "Marali", Malisheva, Republic of Kosovo	10 kW	24.06.2022
33	Natural person A. B.	Solar	vill. "Krojmir", Lipjan, Republic of Kosovo	5 kW	24.06.2022
34	Natural person A. U.	Solar	Podujeva, Republic of Kosovo	3 kW	24.06.2022
35	Natural person A. Ç.	Solar	Podujeva, Republic of Kosovo	3 kW	24.06.2022
36	AB JETISHI SH.P.K.	Solar	vill. "Brekoc", Gjakova, Republic of Kosovo	14 kW	29.07.2022
37	ATATURK HIGH SCHOOL MAMUSHA	Solar	Mamusha, Municipality of Mamusha, Republic of Kosovo	4.16 kW	29.07.2022
38	N.T.P INOX	Solar	Gjakova, Republic of Kosovo	14 kW	29.07.2022
39	Municipal Assembly of Mamusha	Solar	Mamusha, Municipality of Mamusha, Republic of Kosovo	12.48 kW	29.07.2022
40	Municipal Assembly of Mamusha	Solar	Mamusha, Municipality of Mamusha, Republic of Kosovo	14.95 kW	29.07.2022
41	SH.M.U. ANADOLU-MAMUSHA	Solar	Mamusha, Municipality of Mamusha, Republic of Kosovo	11.84 kW	29.07.2022
42	Natural person B. S.	Solar	vill. "Pluzhinë", Skenderaj, Republic of Kosovo	5 kW	29.07.2022
43	N..T.P. ECO GLASS	Solar	vill. "Prelez i Jerlive", Ferizaj, Republic of Kosovo	48 kW	29.07.2022
44	Natural person N. D.	Solar	Gjakova, Republic of Kosovo	3 kW	29.07.2022
45	AGRO ALF	Solar	491 "Vellezerit Frasheri", Rahovec, Republic of Kosovo	45 kW	29.07.2022
46	MOBILE DECOR SH.P.K.	Solar	vill. "Qyshk" Peja, Republic of Kosovo	84 kW	29.07.2022
47	N.T.SH. BAST TRADE	Solar	High Prish-Mitrovice, Obiliq, Republic of Kosovo	100 kW	29.07.2022
48	RESTAURANT MJELLMA	Solar	"Shtime", Municipality of Shtime, Republic of Kosovo	40 kW	29.07.2022
49	BESIMI COMMERCE SH.P.K.	Solar	"Shtime", Municipality of Shtime, Republic of Kosovo	10 kW	29.07.2022
50	DECON SH.P.K.	Solar	"Preoce", Municipality Graçanica, Republic of Kosovo	84 kW	29.07.2022
51	N'KATUN SH.P.K.	Solar	"Millosheve", Municipality Graçanica, Republic of Kosovo	20.68 kW	29.07.2022
52	Natural person SH.G.	Solar	"Nagavc", Municipality Rahoveci, Republic of Kosovo	10 kW	05.09.2022
53	CADI GROUP SH.P.K	Solar	"Babush" Municipality Ferizaj, Republic of Kosovo	100 kW	05.09.2022
54	Natural person U.M.	Solar	"Reti e Poshtme", Municipality of Rahovec	5 kW	05.09.2022
55	Natural person SH.P.	Solar	"Marigona neighborhood", Graçanica, Republic of Kosovo	10 kW	05.09.2022
56	MOBILE DECOR SH.P.K.	Solar	"Tahiri Shala", Peja, Republic of Kosovo	81 kW	05.09.2022
57	WORMSER & PARTNERS L.L.C.	Solar	"Gracanica", Graçanica, Republic of Kosovo	25 kW	05.09.2022
58	HAXIJAHA SH.P.K.	Solar	"Rahovec", Rahovec, Republic of Kosovo	14 kW	05.09.2022
59	MAXX GROUP SH.P.K.	Solar	Preoce, Municipality Graçanica, Republic of Kosovo	30 kW	05.09.2022
60	JETISHI KERAMIKA SH.P.K.	Solar	Gjakova, Republic of Kosovo	66.5 kW	05.09.2022
64	DURMISHI F GROUP INT. SH.P.K.	Solar	Preoce, Municipality Graçanica, Republic of Kosovo	60 kW	05.09.2022
62	SOLE KOSOVO SH.P.K.	Solar	Fushë Kosova, Republic of Kosovo	100 kW	05.09.2022
63	N.T. P AGONY -S	Solar	vill. Greme, Municipality of Ferizaj, Municipality of Kosovo	10 kW	05.09.2022
64	PROEX SH.P.K.	Solar	Istog, Republic of Kosovo	100 kW	05.09.2022
65	N.T.N GLOBI KOS	Solar	Klina, Republic of Kosovo	10 kW	05.09.2022
66	PRETENI SH.P.K.	Solar	Vushtrri, Republika e Kosovës	40 kW	05.09.2022
67	Natural person B.XH.	Solar	Gjakova, Republic of Kosovo	8 kW	05.09.2022
68	Natural person B.XH.	Solar	Gjakova, Republic of Kosovo	8 kW	05.09.2022
69	Natural person A.T.	Solar	Gjakova, Republic of Kosovo	10 kW	12.10.2022
70	EUROTERM - AG O.P	Solar	Oseke Hile, Municipality of Gjakova, Republic of Kosovo	69 kW	12.10.2022
71	ECO FRUITS SH.P.K	Solar	Batllava, Municipality of Podujeva, Republic of Kosovo	75 kW	12.10.2022
72	SH. M. Kuvendi I Arbërit	Solar	Brahim Ademi, Municipality Ferizaj, Republic of Kosovo	30.24 kW	12.10.2022
73	SH.F.M.U Jeronim De Rada	Solar	Deshmoret e Kombit, Municipality Ferizaj, Republic of Kosovo	20.16 kW	12.10.2022
74	SH.F.M.U. John Sereçi	Solar	Ahmet Kaqiku, Municipality Ferizaj, Republic of Kosovo	25.2 kW	12.10.2022
75	Kindergarten, Ferizaj	Solar	Enver Topalli, Municipality Ferizaj, Republic of Kosovo	35.7 kW	12.10.2022
76	Natural person E.G.	Solar	Preoce, Municipality Graçanica, Republic of Kosovo	10 kW	12.10.2022
77	Natural person H.SH.	Solar	Adem Jashari, Municipality of Podujeva, Republic of Kosovo	8.3 kW	12.10.2022
78	Natural person I.H.	Solar	Marigona Rezidence neighborhood, Graçanica, Republic of Kosovo	7.5 kW	12.10.2022
79	Natural person F.H.	Solar	Marigona Rezidence neighborhood, Graçanica, Republic of Kosovo	7.5 kW	12.10.2022
80	Natural person N.D.	Solar	Ganimete Terbeshi, Municipality of Klina, Republic of Kosovo	15 kW	12.10.2022
81	Natural person K.R.	Solar	Preoce, Municipality Graçanica, Republic of Kosovo	14.9 kW	12.10.2022

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.

Fig. 2.2 Views from the realization of the self-consumption generator

ERO has also received other requests from natural and legal persons, which are in the review phase and according to the procedures in force, upon completion they will be allowed to construct new generation capacities from the self-consumption generators.

2.6 Monitoring the construction of new generation capacities

ERO, during this year, has monitored the legal entities that have obtained a Final Authorization for construction of generation capacities.

In March 2022, ERO has also participated in the official inauguration of the SELAC project, below you can see pictures from the execution of the Project WIND PARK SELAC, Municipality of Mitrovica.

Fig. 2.3 Views from the works in realization of the project WIND PARK SELAC

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 shall 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.

2.7 Market integration

2.7.1 Albanian Energy Exchange Alpex

In implementation of obligations of the Energy Community Treaty, Albania and Kosovo have committed to implement the Third Energy Community Energy Package, which guides the Parties regarding creation and functioning of a competitive electricity market. As a result, the market patterns in both countries envisage that through ALPEX the European Target Market Model to be implemented, for the day-in advance (DAM) and intraday (IDM) markets, characterized differently and as wholesale markets based on bilateral transactions and contracts reached between two market participants outside energy exchange (Over the Counter -OTC), or in contrary as an organized market of the day in advance and intraday, organized by Albanian Energy Exchange-ALPEX.

On 27 December 2022, the Energy Regulator Office of Kosovo (ERO) and the Energy Regulatory Authority of Albania (ERRE) held a joint meeting in Prishtina to approve trading rules and procedures for ALPEX. Development of ALPEX energy exchange creates a common energy exchange in Kosovo and Albania where participants in the sector can purchase and sell energy easily.

The joint approval of two regulatory bodies is the final step in the regulatory framework that is needed to enable functioning of energy exchange between the two countries.

Market unification between Albania and Kosovo is the most efficient way to help maximize the use of cross-border energy and transmission capacity at the lowest possible price. ALPEX will provide a transparent platform for energy trade, increase competition at the retail price level and create price signals that will encourage new private sector investments. The size of the combined integrated market also offers easier entry of the new suppliers and better absorptive capacity of generation from renewable energy sources (RES).

This trading platform is a big step forward in creating the regional energy market of the Western Balkans. Its efficiency will ultimately benefit the customers of Kosovo and Albania, but eventually the entire region.

Fig. 2.4 View from the joint meeting on approval of trading rules and procedures for ALPEX

This joint meeting of two regulators provided the opportunity to regulators, energy market participants and government stakeholders to discuss about benefits that ALPEX's proceedings will bring to the energy exchange in terms of regulatory requirements, and the roles being played by each regulator in facilitating ALPEX and its sustainability.

2.7.2 Implementation of the Rule on Electricity Market Integrity and Transparency (REMIT)

REMIT Regulation, which is a transposition of Regulation No. 1227/2011 of the European Parliament and of the Council, was approved by ERO in June 2020. According to the obligations deriving from the REMIT rule, market participants shall be registered in the national register which is created by ERO.

ERO has transposed from the ECRB format, the format of questionnaires for data collection by licensees, which has been sent to market participants. Based on the data submitted by market participants, ERO has established the national register of market participants, according to the legal

requirements arising from the REMIT rule. Rules, forms and the national register are published on the website of ERO.

2.8 The crisis in energy sector

Years 2021 and 2022 have been characterized with an increase of prices in European electricity markets, impacted by the gas demand in Asia, low level of gas storages in European stocks and increase of electricity demand due to economic recovery following the initial restrictions of COVID-19, joined by a series of economic, atmospheric and political factors in the entire world.

On 13 January 2022, Energy Regulatory Office has initiated process of Extraordinary Review of Maximum Allowed Revenues for regulated companies in the energy sector. Such a review was initiated by ERO after the unprecedented increase in wholesale import prices. Based on the regulatory framework, condition of material impact of 5% on the revenue of the universal supplier would trigger an extraordinary tariff revision. In addition to high import prices and a significant increase in demand, the situation was worsened by unplanned outages of power plants.

Upon revising tariffs in February 2022, ERO has changed the tariff structure for USS and has set the block tariff (at 800 kWh/month), as well the increase of allowed revenues up to 70% from the previous year.

Government pledged a subsidy of 100 million Euros, in addition to the 20 million Euros given in 2021.

Allowable revenue increase has been revised in the light of announced subsidy and the revenue increase resulted to be around 20%, which will be covered by household customers who consume electricity more than the determined block.

In addition to the general campaign on energy saving, Ministry of Economy established an emergency technical committee as provided by the Administrative Instruction on emergency situations. This technical committee has made recommendations to the Minister of the Ministry of Economic Development for possible support measures on managing and overcoming energy crisis.

2.9 Activities of the Regulator in the area of price regulation

2.9.1 Tariff review

The Energy Regulatory Office (ERO) based on the competences given in the primary legislation and the secondary legislation for the energy sector is the sole authority responsible for setting the tariffs for the regulated activities in the energy sector. ERO, through an open and transparent process determines revenues and tariffs; this regulatory responsibility in addition to being specified in local legislation, is also defined by Directive 2009/72/EC regarding joint rules for the internal electricity market.

From the second half of 2021, we have had a rapid increase in prices in the European energy markets. This increase has been encouraged by a number of factors, such as: increased demand for natural gas from Asia and low stock levels in Europe, where they have led to a significant increase in natural gas prices. Since gas-fired power plants are typically marginal power plants which are needed to cover demand in the electricity markets, rising natural gas prices resulted in a similar increase in electricity

prices. This dynamic was particularly pronounced in Europe, where Russian occupation of Ukraine added unprecedented pressure to the energy market, further worsening energy crisis when prices rose to record levels, which Kosovo which Kosovo would also have to pay for.

Electricity purchase costs have been affected by other significant events. First, data provided suggests a significant increase in the peak demand of electricity, as well the volume of energy consumption. In addition, there were significant production interruptions from units of TC Kosova A and TC Kosova B, which coincided with the peak demand of electricity, which were not taken into account in the initial calculation of the tariff.

These effects were also reflected in the national electricity market. Recognizing these circumstances, Energy Regulatory Office on 13 January 2022 has initiated process of the Extraordinary Review of the Maximum Allowed Revenues for regulated companies in the energy sector. Extraordinary rate reviews require regulatory intervention to update rate parameters to ensure that allowable revenues covered through approved rates completely cover reasonable costs of providing service to the regulated customers. Extraordinary reviews occur when there is a difference between the projected and completed values of the tariff determination parameters, which exceeds a materiality threshold of at least 5%. In the framework of this process, ERO updated the Maximum Allowed Revenues (MAR) of Universal Service Supplier, adjusted MAR of Transmission and Market System Operator (KOSTT), Distribution System Operator (DSO), based on the determined figures in this process.

In parallel with an extraordinary review process, ERO also has initiated the review of tariff structure for domestic customers as a mechanism foreseen in the secondary legislation in oder to enable the increase in the efficiency of electricity consumption and reflection of service costs.

Taking into account complexity and the need for the completion of this process as soon as possible, ERO has had technical assistance involved through USAID, namely ESA Kosovo Energy Sustainability Activity project.

ERO, as always, has offered regulated companies and customers an opportunity to review data and stances presented in the consultative reports.

The review of applications for regulated revenues and tariffs in the electricity sector has included: activities of wholesale purchase of energy from domestic generators, import of electricity, electricity transmission activity, electricity distribution activity and the activity of universal service supplier.

The entire process has gone through public consultation, including meetings and communications with stakeholders. ERO, upon determination of revenues and tariffs for regulated operators, has taken into account the documents which were published in the official website of ERO, as follows:

- ERO on 28 December 2021 from the Universal Service Supplier KESCO JSC (USS) has received application for the Extraordinary Review of the Maximum Allowed Revenues for the Universal Service Supplier.
- ERO on 23 December 2021 from the Universal Service Supplier KESCO JSC (USS) has received application for the Extraordinary Review of the Maximum Allowed Revenues for the Transmission and Market System Operator (KOSTT).
- Consultative Report Extraordinary Review of Maximum Allowed Electricity Revenues for Regulated Operators.

- Consultative Report Review on the Tariff Structure for Regulated Household Customers served under USS.
- Final Report of Maximum Allowed Electricity Revenues for Regulated Operators, Response to Comments (Relevant tariff year 2022).
- Final report on the tariff structure of regulated electricity customers of the Extraordinary Review of the Maximum Allowed Revenues for Regulated operators, responses to stakeholder comments, published on 8 February 2022.

2.9.2 Energy purchases in wholesale market

As a net importer of energy, Kosovo has also been affected by the increase in European electricity prices. The executed wholesale energy purchase costs of the Universal Service Supplier (USS) were significantly higher than the costs allowed by ERO and those completed in 2021, and the projection requested by the USS itself. ERO's proposed cost on imports included in the tariffs, based on the price predictions in August, was EUR 90/MWh for the remaining months of the year. Universal Service Supplier's own prediction ranged between EUR 125/MWh and EUR 143/MWh. Actual costs of purchasing energy in November amounted to 322.87 Euros, which is an increase of 257% compared to the predictions of ERO, included in the current tariffs and an increase of 142% compared to the predictions of Universal Service Supplier. This is reflected in a significant difference between allowed costs of the purchase of energy import and those executed by the sector.

Electricity prices traded on the day-in advance market on HUPX/HUDEX exchanges have been high, a significant increase reaching its peak at 496 Euro/MWh during the month of August 2022. Meanwhile on 30 July 2022 the price in 20:00 has increased to 1,047 Euro/MWh.

Electricity purchases in the wholesale market include purchases of energy from KEK, from renewable energy generators connected to the transmission and distribution network, as well as purchases of energy from imports realized in organized markets.

Production prices for the public generator (KEK JSC) are deregulated from 1st of April 2017. This energy is offered in the wholesale energy market, with priority for the Universal Service Supplier, and upon determining quantities needed for supply with the purpose of covering demands of customers entitled to universal service, whereas the remaining part of the energy produced by KEK is offered in the wholesale market.

In addition to purchases of energy for the supply of final customers, in the wholesale market is realized the trading of energy to cover losses and ancillary services by the Transmission System Operator and the Distribution System Operator.

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

The sources of electricity 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. The energy and financial data of the allowed wholesale market for 2022 are summarized in the following table:

Tab. 2.8 Allowed costs for energy purchases

Allowed costs for energy purchase for USS	GWh	€/MWh	€'000
Amounts supplied by KEK	4,013	29.50	118,373
Generators at TSO level	591,7	65,77	38,914
Generators at DSO level	44,36	44,36	2,030
Import	127	172	21,805
Total supplied amounts	**4,821**	**37.57**	**181,122**
Subsidies			(100,000)
Energy purchase costs – without subsidies			81,122
Margin cost			2,154
Total energy purchase costs	**4,821**		**83,275**

From the data presented in the table above, it is noticed that the planned cost for energy purchase in the wholesale market upon subtracting the subsidy of the Government of the Republic of Kosovo is 83 mil €.

2.9.3 Maximum allowed revenues for regulated tariff customers

Reasonable costs that have been used to determine the Maximum Allowed Revenues for regulated tariff customers by the universal service obligation include: supplier retail costs, pass-through costs (transmission and distribution network costs), energy purchase costs, functional capital, bad debt, executed cost adjustments, etc. Revenues of the universal service supplier enable to cover the costs of each activity of the supply chain starting from activity of generation and mining, transmission, distribution to the supplier. Therefore, the supplier collects from the final customers general costs of electricity supply, which afterwards pays to each Party depending on the costs of service.

It shall be emphasized that costs of purchasing energy from imports and pass through costs (TSO/MO and DSO) have highly increased due to the increase in wholesale energy costs in energy markets.

Hence, total revenues requested by USS are 468.6 million Euros in relation to 347.3 million (deducted for 100 million of the subsidies committed by the Government of the Republic of Kosovo) allowed by ERO.

Details of these costs for 2022 are presented in the following table:

Tab. 2.9 Universal Service Supplier Maximum Allowed Revenues

Universal Service Provider MAR	Unit	USS proposal 2022	Final proposal 2022
Indexing parameters			
Interest rate It (t-1)	%		5,53%
Retail costs of suppliers			
OPEX - $OPMC_t = OPMC_{t-1} * (1 + CPI_{t-1}) * (1 – E_t)* (1 – P_t)$	€m	5,42	5,41
Correction for OPEX in 2020	€m		0,42
Depreciation - DEPCt = DEPCt-	€m	0,1	0,1
Transferable costs			
TSO costs	€m	18,34	20,56
DSO costs	€m	174,5	179,56
RES fund costs	€m	3,54	3,53
Working capital (WCLCt)			
WCLC = (1 / 12) * It * (RETRt +	€m	2,31	1,35
Energy purchase costs			
Bulk energy purchase costs	€m	203,3	83,28
License fee			
License fee	€m	0,07	0,04
Bad debt (BDTA)			
BDTA	%	2,40%	2,40%
BDTA	€m	13,13	9,73
Income adjustments for USS			
Adjustments for 2021	€m	47,44	43,3
Maximum allowed revenues	**€m**	**468,6**	**347,28**

the share of costs by activities in the total costs of electricity supply to regulated customer.

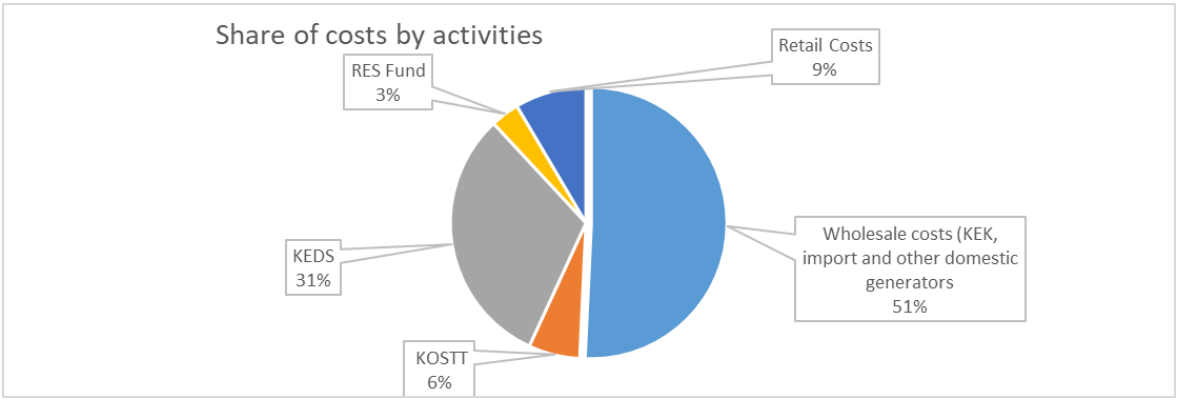


Fig. 2.5 Share of costs by activities

Note: The Renewable Energy Sources (RES) Fund is a fund established and managed by the Market Operator in line with the Rule on Support Scheme

2.9.4 Regulated tariffs for universal service customers-new Structure

The regulated tariffs set by ERO for the relevant tariff year 2022, are projected to cover the costs of electricity service for all customers regulated by the universal service supplier. Customers who are billed with regulated tariffs are customers connected to the voltage levels 35kV, 10kV and 0.4kV, while customers connected to the voltage level 220kV and those to 110kV are supplied with unregulated prices (market prices).

ERO sets regulated tariffs for customers who are entitled the right to supply under the criteria of universal service. The criteria based on which customers are entitled this right are set out in the Law on Electricity, according to which: "The right to universal service of supply is entitled to all household customers, and non-household customers who have an annual turnover of not more than ten (10) million Euros, or not more than fifty (50) employees."

After allocation of subsidies of 100 million Euros by the Government of the Republic of Kosovo to cover increasing costs of purchasing energy and to reduce the impact of energy tariffs on customers, ERO has determined tariffs with the new tariff structure, which resulted in: increase of 0% of tariffs for business customers and domestic customers for the level of consumption up to 800 kWh and application of the new tariff of 12.52€ cents/kWh for electricity consumed at the time of the high tariff and 5.90 € cents/kWh for energy consumed at the low rate.

The structure of retail tariffs of electricity for customers entitled to universal service (regulated tariffs) is designed to recover the revenues determined in an amount of 347.28 million Euros.

ERO, through the public consultation on the Tariff Structure, published by ERO on 17 January 2022, has proposed the tariff structure and the level of tariffs necessary to cover the executed import costs. Through the Consultative Report, ERO highlighted the significant increase in energy consumption in Kosovo and analysed the connection between the increase in energy consumption and decision of the Board of ERO in 2017 to change the tariff structure. The tariff structure applied from 2017 contained neither elements of seasonality and energy efficiency incentives. Furthermore, the tariff change in 2017 had reduced the energy efficiency incentive previously imposed by the Progressive Tariff Block which ensured that a certain amount of energy was consumed at a more affordable price while the upper blocks reflected the cost of providing that energy to the system. The change in the tariff structure at that time affected unsustainable increase in energy consumption in the country. Volume of energy consumed in 2021 was 41% higher than in 2017. The increase in energy consumption was also accompanied by a record increase in the maximum peak load, which overloaded networks and the ability of transformer capacities to deliver this energy to the customers. Difference between 2021 and all previous years, especially during the months of winter, suggests an increase in energy consumption and the use of energy for heating, which may have resulted from electric heating of customers who before changing the tariff structure may have used other alternatives.

The new tariff structure for household customers has changed and now there are two tariff blocks: 0-800 kWh (first block) and >800 kWh (second block).

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

Tab. 2.10 The structure of regulated tariffs for final customers for 2022

Fee group	Supply voltage level	Fee element	Unit	Long time Fee	Fee
1	35 kV	Fixed customer fee	€/customer/month		11,19
		Power engaged	€/kW/month		5,85
		Active energy (P), of which	€c/kWh	High Fee	4,92
			€c/kWh	Low Fee	3,16
		Reactive energy (Q)	€c/kVArh		0,67
2	10 kV	Fixed customer rate	€/customer/month		4,62
		Power engaged	€/kW		5,04
		Active energy (P), of which	€c/kWh	High Fee	5,73
			€c/kWh	Low Fee	3,69
		Reactive energy (Q)	€c/kVArh		0,67
3	0.4 kV Category I (consumers with	Fixed customer fee	€/customer/month		2,57
		Power engaged	€/kW		2,97
		Active energy (P), of which	€c/kWh	High Fee	6,69
			€c/kWh	Low Fee	4,96
		Reactive energy (Q)	€c/kVArh		0,67
4	0.4kV Category II	Fixed customer fee	€/customer/month		2,97
		Active energy (P), of which	€c/kWh	Single fee	8,83
		Active energy (P), of which	€c/kWh	High Fee	10,71
			€c/kWh	Low Fee	5,30
5	0.4kV tariff meter 2 (household)	Fixed customer fee	€/customer/month		1,74
		0-800kWh (First block)	€c/kWh	High Fee	6,75
			€c/kWh	Low Fee	2,89
		> 800kWh (Second block)	€c/kWh	High Fee	12,52
			€c/kWh	Low Fee	5,90
6	0.4kV tariff meter 1 (house	Fixed customer fee	€/customer/month		1,74
		0-800 (First block)	€c/kWh	Low Fee	5,32
		>800 (Second block)	€c/kWh	Single fee	10,07
7	0.4kV (household without	Estimated consumption:			
		Fixed customer fee	€/customer/month		1,74
		Active energy (P), of which	€c/kWh	Average fee	6,75
8	Public lighting	Fixed customer fee	€/customer/month		3,21
		Active energy (P), of which	€c/kWh	Single fee	9,24
The high fee (daytime) is applied from 07:00 - 22:00 during the period 1 October to 31 March					
The high fee (daytime) is applied from 08:00 - 23:00 during the period 1 April to 30 September					
The consumer is charged with reactive energy above the permitted one, which corresponds to cos (Φ)<0.95					

Prior to tariff design, the pass-through costs of USS shall also be determined, such as transmission use of system and distribution use of system. These pass-through costs are described below.

2.9.5 Revenues and tariffs for transmission use of system, system operation, and market

During 2022, ERO has carried out the process of regular annual adjustments, where the revenues of the TSO/MO have been adjusted to take into account: the efficiency factor, indexation of costs for the inflation rate applied to operating expenses, repairs & maintenance.

Adjustments to the costs of purchasing losses, return and depreciation expenses resulting from planned investments according to the development plan and other reasonable costs for operating transmission system have also been applied.

ERO applies "Incentive-based Regulation" which is based on the principle that tariffs for natural monopolies (network tariffs) shall be set in a way that imitates competition, since every company operating in a competitive environment is expected to improve their functional efficiency.

With the aim of 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 necessary revenues for the operation of the transmission network have been allowed. It is worth to emphasize that the costs of purchasing energy to cover the allowed losses were 13.92 million Euros, whereas those realized for 2021 were 10.83 million Euros, which have increased due to the increase in prices in the electricity markets.

The following table presents the Maximum Allowed Revenues approved by ERO Board, for the relevant tariff year 2022 for TSO/MO.

Tab. 2.11 Maximum Allowed Revenues for TSO/MO

Maximum allowed revenues for TSO/TO-2022	million€
Operating costs	7,35
Depreciation	12,66
Allowed return	11,63
Allowable losses	13,92
Fund	10,67
Auxiliary services	7,00
Adjustments	
Unregulated revenues	-0,06
Income from ITC mechanism	-3,60
Adjustments for 2017 and RP1	-1,26
KEK revenues	-5,92
Corrective factor of KREV revenues	-13,55
Final MAR	**38,84**

Maximum Allowed Revenues for KOSTT shall be collected through tariffs approved by ERO based on the Methodology for determining transmission system tariffs, System Operation, and Market Operation.

The following table presents the tariff structure for transmission use of system tariffs, the system operation and market for the relevant tariff year 2022.

Tab. 2.12 Tariff structure for TSO/MO for 2022

Tariff group	Tariff element	Unit	Tariff
Production connected to Transmis	System Operator Tariff	€/MWh	1,965
	Market Operator Tariff	€/MWh	0,025
Production connected to Distributi	System Operator Tariff	€/MWh	0,104
	Market Operator Tariff	€/MWh	0,025
Distribution Operator	System Operator Tariff	€/MWh	1,726
	Market Operator Tariff	€/MWh	0,023
Supply	TUOS fee 400/220 kV	€/kW/year	4,745
	TUOS fee 110 kV	€/kW/year	9,675
	System Operator Tariff	€/MWh	1,726
	Market Operator Tariff	€/MWh	0,023
	RES Fund Tariff	€/MWh	0,732

2.9.6 Revenues and tariffs for distribution use of system

Upon reviewing the application of DSO, ERO has reviewed and assessed anticipated costs compared to the ones executed, as well technical, economic and financial indicators of the distribution operator based on the Rule for the Revenues of DSO.

ERO, after public consultation with all interested Parties, has reviewed their comments and requests, and then determined the Maximum Allowed Revenues for DSO for 2022.

It is worth emphasizing that energy purchase costs for covering the losses allowed in the DSO were 106.6 million Euros while the realized losses in 2021 year are 86.7 million Euros which have increased due to rising prices in electricity markets.

The following table presents the Maximum Allowed Revenues approved by ERO Board for relevant tariff year 2022 for DSO.

Tab. 2.13 Maximum Allowed revenues for DSO for relevant tariff year 2022

Maximum allowed revenues for DSO -2022	million €
Operating costs	26,42
Depreciation	18,36
Allowed return	17,17
Obligations to KOSTT for SO and TO forecast	1,61
Allowable losses	106,65
Unadjusted revenues RP	-5,50
Adjustments (2017 and RP1)	-1,50
License fee	0,10
Corrective factor of KREV revenues	16,25
Final MAR	**179,56**

Following the determination of Maximum Allowed revenues, the tariffs shall be set in order to collect the approved revenues.

The Maximum Allowed Revenues for DSO shall be collected through the tariffs approved by ERO, based on the Methodology on determination of distribution use of system tariffs.

The following table presents the structure of tariffs for Distribution Use of System for 2021.

Tab. 2.14 The structure of DSO tariffs for 2022

Tariffs of customers connected to DSO		
Voltage level	Unit	Fee
35 kV	€c/kWh	1,69
10 kV	€c/kWh	2,56
0.4 kV	€c/kWh	3,86

2.9.7 Input Values on determining the Maximum Allowed Revenues for PRR3

During 2022, ERO has determined the Input Values for the regulatory Period 2023-2027, which are the main parameters used to calculate the Maximum Allowed Revenues of the TSO/MO and DSO. Input value reviews shall be initiated by the regulator whenever the changed circumstances require initiation of such review. Changes to input values shall be made only to the extent that these changes are reasonable, justified and carefully determined.

TSO/MO and DSO may propose to the regulator the review of input values . The regulator will respond to such request with a note presenting reasons for the decision of ERO in order to initiate or not to initiate the review.

Subsequent values are specified as fixed values determined in the periodic review, which shall be applied during the relevant years until the review of input values and consisted of:

- Lifespan of assets;

- Weighted average cost of capital;
- Allowed level of losses;
- Loss sharing factor;
- Efficiency factor; and
- Any other input parameters that the regulator may deem necessary.

2.9.7.1 Categorization and lifespan of assets

One of the important input parameters that was defined in 2018 that is used to determine the revenues allowed during PRR3 onwards is "Categorization and Lifespan of Assets." Upon determining these parameters, ERO has taken as a basis the technical and economic lifespan, as well the best regulatory practices. Lifespan of assets applied to assets within the RAB is fed into the level of depreciation that DSO receives for those assets within each control period (or year). This process was carried out in 2018 through public consultation and a decision was taken on the lifespan used for TSO/MO.

Categorization and lifespan assets for TSO/MO is presented in the following table:

Tab. 2.15 Assets and their lifespan for TSO/MO

No.	Asset categories	Life expectancy (years)
I	Buildings, roads, sewage networks, water supply, wells, elevators	50
II	HV network, pillars	40
III	Low voltage network, substations, transformers, etc.	30
IV	Trucks, bodies and machinery for work	10
V	Control and Telecommunications, various equipment, fire protection	8
VI	Mobiles, office equipment	7
VII	IT equipment, software, patents, licenses, vehicles, etc.	5

A summary of the asset categories defined for DSO is presented in the following table:

Tab. 2.16 Assets and their lifespan for DSO (KEDS)

No.	Asset categories	Life expectancy (years)
I	Administrative buildings	50
II	MV networks, substations, power transformers, and equipment	30
III	LV networks, substations, power transformers, and equipment	25
IV	Transformer stations (TMRR and TMT)[1] and equipment	15
V	Meters and measuring equipment, Trucks, bodies and machinery for work	10
VI	Mobiles, office equipment	7
VII	Work equipment, reading devices, cars, Computers, IT equipment, software	5

ERO has established categories of assets and their lifespan during the last periodic review (PRR2) and does not consider necessary to change them.

2.9.7.2 Weighted Average Cost of Capital

ERO, after the public consultation has approved the "Weighted Average Cost of Capital" in the session held on 16 November 2022, which will be 7.69% real. This amount is applied for the entire regulatory period 2023-2027 for TSO/MO and DSO, which is presented in the table below:

Tab. 2.17 WACC determined for PRR3 for TSO/MO (KOSTT) and DSO (KEDS)

Parameter	RP 2	RP 3
Risk free real rate	3,70%	3,65%
Debt premium	3,50%	2,09%
Real cost of debt	**7,20%**	**5,74%**
Tax rate	10%	10%
Beta equity	1	0,88
ERP	4,50%	5,04%
Net capital cost, real before tax	**9,10%**	**8,98%**
Domestic capital	40%	40%
WACC, real before tax	**8,30%**	**7,69%**

The company's Weighted Average Cost of Capital is an average cost of funds, which is calculated on the cost of capital currently used, as well financial decisions made in previous periods. To select an

average cost, various sources of financing shall be weighted (weighted) according to an amount of each financing held by the company. These weightings on financing sources may be: according to book value or market values that represent current opportunity cost of financing.

2.9.7.3 Loss Reduction Target and the allowed curve of losses

One of the input values determined for the regulatory period is as well target reduction of losses and curve of losses in TSO and DSO. ERO, after the public consultation on 7 November 2022, has published the Final Report - Target Reduction of Losses and Responses to the comments submitted by stakeholders regarding the Consultative Report, whereas the decision was taken at the session held on 16 November 2022.

ERO has defined that the target of allowed losses for PRR 3 for DSO will be 1.75%, which is based on the trend of losses executed in the last years 2019, 2020 and 2021, and represents an incentive for the System Operator to continue to operate at the level of existing efficiency.

ERO has assessed that goals on reducing the losses of DSO in PRR3 based on the losses allowed at the end of PRR 2, the performance of DSO in PRR1 and PRR2, the effect of investments made, the real and reasonable possibilities of investments also in the future period based on experiences from PRR 1 and PRR 2, domestic and regional regulatory practices, reduction of losses trends in the last years of DSO, the Energy Strategy for the period 2022-2031, etc.

Tab. 2.18 Allowed network losses for the third regulatory period for the period 2023-2027

Allowed losses	Unit	2023	2024	2025	2026	2027
Loss allowance for TSO	%	1,75	1,75	1,75	1,75	1,75
Loss reduction target	%		-	-	-	-
Loss sharing factor	%	50/50	0	0	0	0
Loss allowance for DSO	%	15,1	14,7	13,3	12,1	11,1
Loss reduction target	%	-	0,4	1,4	1,2	1
Loss sharing factor	%	50/50	0	0	0	0

The Efficiency Factor

Efficiency factors are used by regulators around the world to promote the market competition in monopolistic markets. They limit unreasonable prices and set incentives for companies to operate efficiently. Based on experts' opinion and the efficiency factors applied by other regulators, ERO's final proposal remains that an OPEX Efficiency Factor of 1.5% per year shall be applied to KEDS (DSO) and KOSTT (TSO/MO) during PRR3.

This is in accordance with the scope on the efficiency factors based on regulatory decisions in the region, and there is support in the comparison with the regional performance of the network operators.

Tab. 2.19 Input Values– The Efficiency Factor defined for TSO/MO and DSO

Input Values - Efficiency Factor	*Unit*	*2023*	*2024*	*2025*	*2026*	*2027*
TSO/TO- KOSTT	%	1,5	1,5	1,5	1,5	1,5
DSO- KEDS	%	1,5	1,5	1,5	1,5	1,5

2.9.8 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.

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:

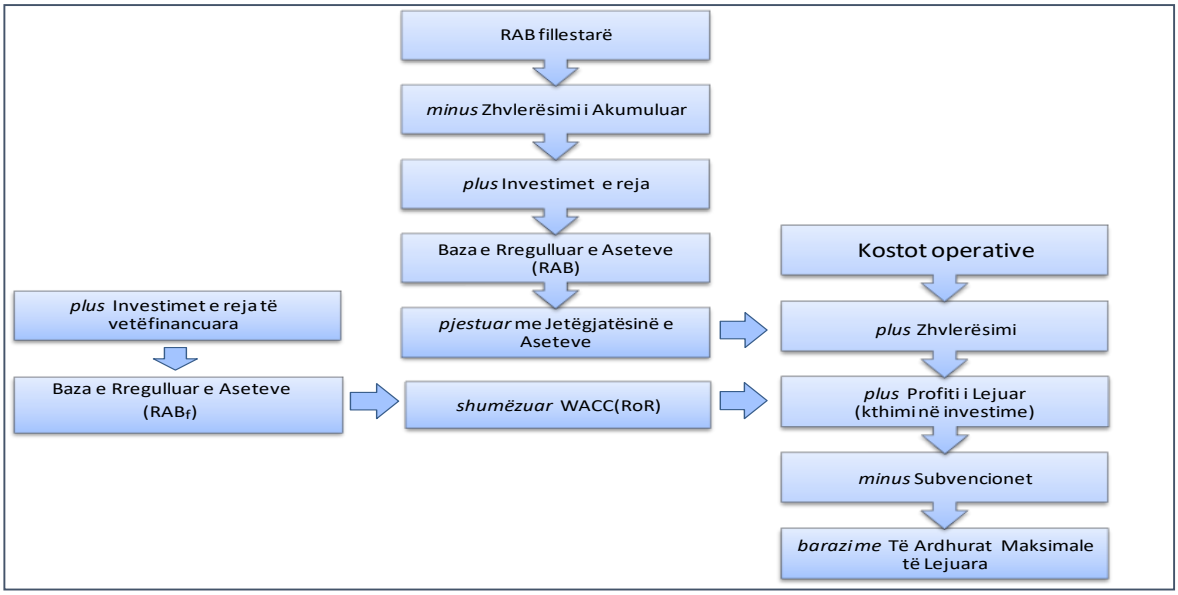


Fig. 2.6 The scheme of calculation of allowed revenues

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 2022/2023 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 previous season 2022/2023; 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 thermal energy enterprises (central heating) for the 2022/2023 season, in line with Thermal Energy Pricing Rule, ERO 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 (return on investments), 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 evaluation of the information provided, submitted by enterprises. 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 2022/2023 season.

Within the tariff review for thermal energy companies: DH Termokos and DH Gjakova, ERO has drafted Regulatory Reports on determining the Maximum Allowed Revenues and on determining thermal energy tariffs for the season 2022/2023.

Following the review of relevant documents of tariff review, in the session of 12 October 2022, ERO Board approved the Maximum Allowed Revenues (MAR) for DS Termokos for the season 2022/2023, in an amount of 8,233,676 €. The tariffs reflected from MAR of DH Termokos for the heating season 2022/2023 remained at the same level as the ones from the previous season.

The issued decisions:

- V_1602_2022 -on approval of Maximum Allowed Revenues (MAR) for DH Termokos, which shall be collected from thermal energy (heating) tariffs for final customers for the season 2022/2023;
- V_1603_2022 -on approval of thermal energy tariffs for final customers of DH Termokos for the heating season 2022/2023;

Whereas for NQ Gjakova, upon reviewing relevant reports and documents, the Maximum Allowed Revenues (MRL) were approved in the amount of 839,755€, at the session of the Board of ERO on 29 December 2022. Also, the tariffs reflected by the MRL of DH Gjakova for the 2022/2023 heating season have remained at the same level as the ones from the previous season.

The issued decisions:

- V_1640_2022 - on approval of Maximum Allowed Revenues (MAR) for DH Gjakova, which shall be collected from thermal energy (heating) tariffs for final customers for the season 2022/2023;
- V_1641_2022 -on approval of thermal energy tariffs for final customers of DH Gjakova for the heating season 2022/2023;

The structure and levels of thermal energy tariffs for DH Termokos and DH Gjakova are presented as follows:

Tab. 2.20 The structure of thermal energy tariffs for 2022/2023

Thermal Energy Sector - Season 2022/2023					
Metered tariff components	Unit	DH Termokos		DH Gjakova	
Monthly tariff for Thermal Capacity (fixed components)	[€/kW/month]	0,78		0,85	
Therm. Ener. Supply/Cons. tariff (variable component)	[€/MWh]	36,25		54,65	
Metered tariff components	Unit	Household customers	Com.&Inst. Customers	Household customers	Com.&Inst. Customers
Monthly tariff for Thermal Capacity (fixed components)	[€/m^2 per month]	0,11	0,14	0,09	0,13
Therm. Ener. Supply/Cons. tariff (variable component)	[€/m^2 per month]	0,65	0,81	0,81	1,16
Total charge for unmetered customers	[€/m^2 per month]	0,76	0,95	0,90	1,29

2.10 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 address the Regulator for further review of the complaint.

The Regulator during 2022 has registered 118 official complaints of customers who have used their right against responses issued by the Supplier, has returned 109 complaints for review to the Supplier and Distribution System Operator, as well as 62 customer complaints related to the review of the accuracy of metering. During 2022, the Regulator has also registered 3 disputes raised by licensees (energy enterprises), namely the dispute raised by KOSTT against KEDS and KESCO, as well the dispute against KEK. In addition to the registered and resolved customer complaints, regulator has also provided support in providing information, explanations, verbal consultations, e-mail, as well on the phone to all energy customers.

The number of received complaints by customer categories is presented in the following table.

Tab. 2.21 Customer complaints by categories, 2022

Consumer complaints by categories	Number	Percentage [%]
Household consumers	88	74,58
Commercial customers	28	23,73
Industrial consumers	2	1,69
Total	118	100,00

The figure below presents the number of complaints divided by their nature.

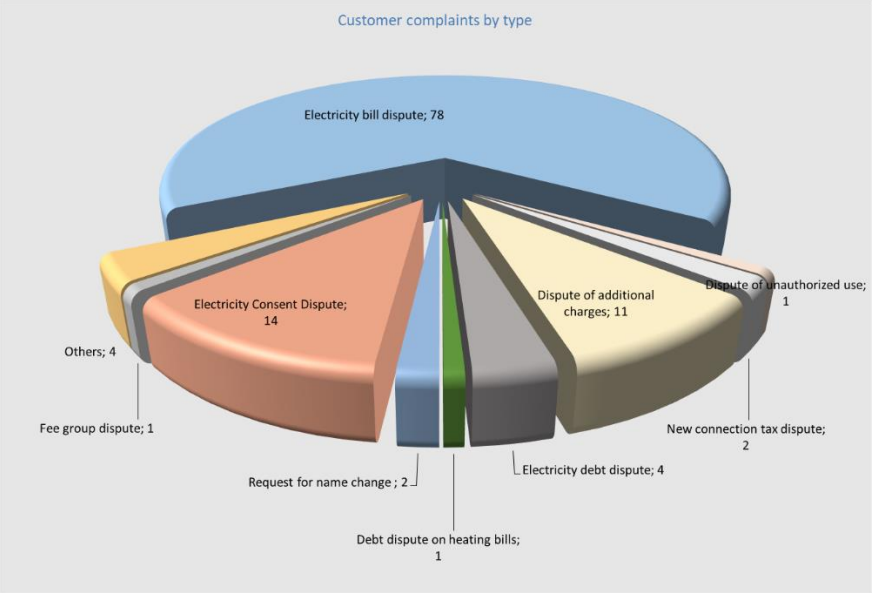


Fig. 2.7 Number of customer complaints by nature

The following is an explanation of the nature of customer complaints filed for 2022:

- **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 Matters.
- **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,** relates to customer complaints for change of tariff group, where customers request to change the tariff group for various reasons.
- **Dispute of the electricity Approvals,** relates to customer complaints or even the applicants for a new connection, which are related to the technical solutions provided by the system operator.
- **Dispute of heating bills of "Termokos",** related to the complaints of customers who have disputed the previous accumulated debts, due to poor quality of heating.

During 2022, the Regulator has solved 291 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, 220 or 75.60% of them were approved in favour of customers, whereas 71 or 24.40% 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 solutions.

Fig. 2.8 Resolved complaints, 2022

The number of customers' complaints, registered and resolved by the Regulator through years is presented in the following table.

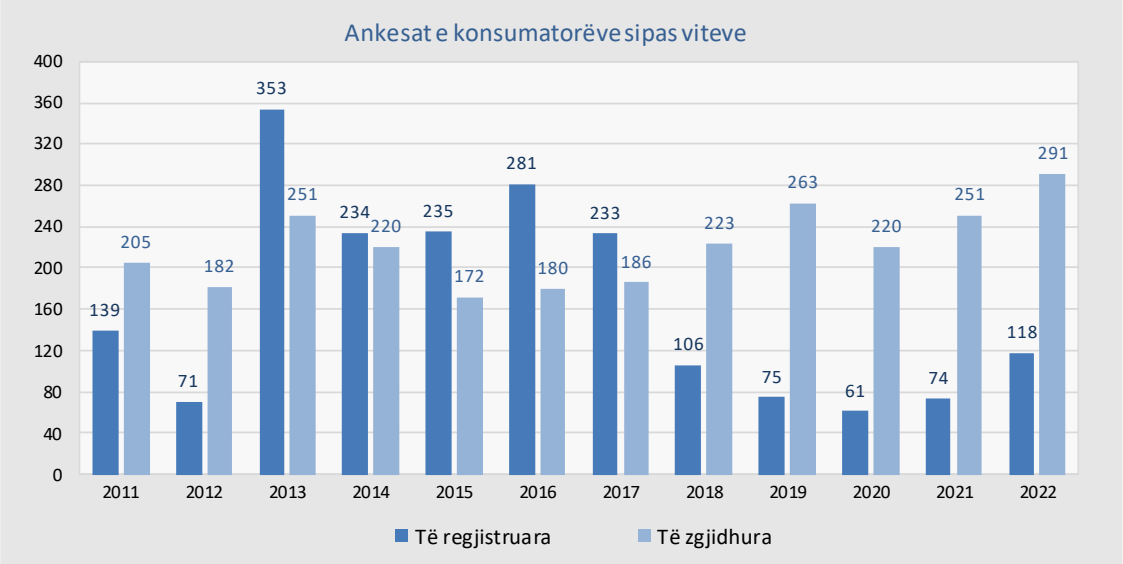


Fig. 2.9 Registered and resolved customer complaints 2011-2022

2.10.1 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 2022, costumers submitted 16 complaints to the Regulator's Board, against CPD decisions. Of the 16 registered complaints, the Regulator's Board reviewed all of them and rejected these complaints as ungrounded.

The supplier KESCO, during 2022, submitted 9 complaints to the Regulator's Board against CPD decisions. Of the 9 registered complaints, the Board reviewed all of them and rejected these complaints as ungrounded.

Also during 2022, the Regulator's Board reviewed 3 recommendations issued by the CPD regarding complaints of commercial and industrial customers, whereby the Board approved all these recommendations.

2.10.2 Other activities related to customer protection

ERO during this reporting year, in addition to the registered complaints, the Regulator's staff during this reporting year has also carried out 756 meetings and 985 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 2022, the Regulator also received 26 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.

It is worth to emphasize that 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.

As in the previous years, but as well during 2022, the Regulator, same as in the previous years, had close cooperation with the Department of Costumer 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 2022, a number of Regulator's decisions were appealed by dissatisfied parties to the Basic Court in Pristina - Department for Administrative Matters, to evaluate the legality of administrative decisions. During 2022, the Regulator based on the decisions of the Basic Court in Pristina has prepared 16 responses to indictments, 5 responses to complaints, 3 complaints against plaintiffs KEDS, KESCO and customers against the 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 31 court hearings in the Basic Court in Pristina as a defendant party. In addition to the responses to indictments, it is worth mentioning that same as in previous years during this reporting year as well, the number of court proceedings that the Regulator has followed has increased significantly and is demanding high engagement.

It is important to emphasize 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.

3 COOPERATION WITH OTHER PARTIES AND TRANSPARENCY

ERO has shown full transparency in exercising its functions by holding Board meetings which are 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.

All interested parties can have access to the available data through the electronic website of ERO: http://www.ero-ks.org/zrre/sq/te-dhena.

As well, in order to inform you as much as possible, ERO has continuously informed the customers and the broad public in all the activities it has carried out. For this purpose, during 2022, over eighty two announcements and press releases were issued, which were sent to the media and published on the website and on Facebook.

3.1 Public involvement in regulatory processes through public consultations

During 2022, ERO has held 16 public consultations for review of different regulatory documents.

- Energy Regulatory Office at the beginning of December 2021 has started the process of extraordinary review of tariffs for activities in the energy sector. ERO has published Consultative Reports in which ERO positions are presented for an extraordinary review of tariffs in order to cover the significant change in electricity purchase costs and to restore electricity supply to customers. In addition to this report, the consultative report was also published, which aimed to obtain views of stakeholders on the proposals of the ERO on changing the tariff structure to increase efficiency of energy consumption.
- On 7 February 2022, the Board of Energy Regulatory Office (ERO) in its third (III) session has approved Maximum Allowed Revenues for the regulated operators (Transmission and Market System Operator/KOSTT; Distribution System Operator/KEDS and Universal Service Supplier Operator USS/KESCO). The Maximum Allowed Revenues for the Universal Service Supplier USS/KESCO have been approved in the amount of 347.15 million €, for the Transmission and Market System Operator/KOSTT have been approved in the amount of 38.84 million €, for the Distribution System Operator/KEDS is approved in the amount of 179.56 million €. The approval of Maximum Allowed Revenue for the Universal Service Supplier (USS) is adjusted for 90 million Euros of the last subsidy of the Government of the Republic of Kosovo, as well 10 million Euros allocated in January 2022, for the purchase of electricity for the regulated customers.
- Board of the Energy Regulatory Office (ERO), in its 4th session, has approved the electricity tariffs for the tariff year 2022, for the Transmission and Market System Operator (KOSTT); Distribution System Operator (KEDS) and Universal Service Supplier (KESCO). The retail energy tariffs for non-household customers, within the Universal Service, shall remain the same as last year, while the tariffs for household customers, for the level of consumption up to 800 kWh per month, shall remain the same, while the difference of consumption over 800 kWh per month, will be billed with the low tariff (during the night) of 5.9 and the high tariff (during the day) of 12.52 cents.

- On 14 March ERO has brought in public discussion the 2020-2021 Competition Assessment Report in the Energy Sector in Kosovo. The report has provided an analysis of the competition in the wholesale and retail energy market in Kosovo during the years 2020 and 2021 and is based on the analysis of the market structure and market concentration indices such as market share, HHI, concentration ratio (RP), the Primary Supply Indicator (PSI) and the Residual Supply Index (RSI).
- On 8 of April, ERO has published for public discussion supplementation and amendment of the Rule of Setting Thermal Energy Prices and the Rule of Developing Load Profiles in the Energy System in Kosovo.
- On 28 April, ERO has brought in public discussion the Tax Methodology for Connection to the Distribution Network. The Tax Methodology for Connection to the Distribution Network aims to determine taxes for connection to the distribution network of new applicants and taxes to increase capacity for current users of the distribution network, as well to provide comprehensive procedures and information on existing users and future users of the distribution system who require new connections or modifications to the existing ones.
- Given that these requirements have direct implications in the Tax Methodology for Connection to the Distribution Network, ERO has invited to a public hearing all Chambers of Commerce in Kosovo and Civil Society, to consult and debate about this Methodology in order for ERO to further evaluate possibilities for possible changes based on the applicable legal provisions.
- On 5 May ERO has brought in public discussion the Completion/Amendment of the Rule on the Licensing of Energy Activities in Kosovo.
- On 13 June, ERO has brought in public discussion Principles of Determining Tariffs for Use and Taxes for Connection to the Distribution System. The purpose of approving amendments and additions to this Rule is to establish principles for the preparation of Methodologies by the Distribution System Operator (DSO) on the determination of usage rates and taxes for connection to the distribution system.
- On 13 July, ERO has brought in public discussion Development Plan of the Enterprise N.P Termokos JSC. This ten-year development plan of the thermal energy system contains measures and plans in order to guarantee adaptability of the system, security of heat supply for customers connected to this system, plans for the development, modernization and expansion of the heating network in the city of Pristina.
- On 13 September, ERO has brought in public discussion the Consultative Reports on Input Values for the Regulatory Period 2023 – 2027 for the Transmission and Market System Operator (OST/OT-KOSTT) and the Distribution System Operator (DSO-KEDS).
- In September, ERO has brought in public discussion the Regulatory Report on determining Maximum Allowed Revenues for the heating plant of the city of Termokos JSC. The report presents examination of the request and preliminary assessment for the Allowed Revenues for the 2022/2023 season of the company Termokos JSC. The report has been prepared based on the Rule for Setting Thermal Energy Prices, through which the procedures for the submission, review of the tariff application and approval of the tariffs, as well the methodology for the calculation of the allowed revenues and tariffs are defined.

- On 4 October, Energy Regulatory Office (ERO) ha published Draft/Regulations on the Authorization Procedure for the Construction of New Generating Capacities, New Gas Transmission and Distribution Systems, including Interconnectors, Direct Pipelines for Thermal Energy and Direct Electricity Lines and Direct Natural Gas Transmission Pipelines.
- On 2 November, Energy Regulatory Office (ERO) has published the Rule on Prosumers. This Rule defines principles and regulated mechanism for the support of energy customers who wish to generate electricity in their premises based on renewable technology for self-use, construction of self-generation capacities, principles of support for Prosumers and application procedure to become a Prosumer, the Net Billing Support Scheme, the Prosumer fee as an adequate contribution to reduce their impact on the cost of the energy system, the minimum technical requirements for Prosumer renewable technology installations and the regulation of the Prosumer mechanism which function together for the collective housing/buildings.
- On 15 November, Energy Regulatory Office has decided to discuss APLEX Rules, namely, Trading Procedure, ALPEX Rules, General Terms, Clearing and Settlement Procedure and Alpex Definitions.
- On 4 December, Energy Regulatory Office (ERO) has decided in the public consultation on the Transmission Development Plan 2023-2032; Distribution System Operator Network Development Plan 2023-2032.
- On 10 December 2022, Energy Regulatory Office (ERO) has put in public consultation the draft of an annual electricity Balance for 2023. This Balance has been drafted by the Transmission System and Market Operator KOSTT JSC. in accordance with the Law No. 05/L-081 on Energy (Article 8), as well the document Rules and methodology for the preparation of electricity balances. An annual electricity balance represents annual energy expenditure plan in relation to the available electricity. The annual energy balance is based on the planned electricity consumption needs for the year 2023, which is expected to be supplied by local generation and electricity import. The export of surplus electricity is also foreseen in the balance sheet.

3.2 Reporting and cooperation with the Assembly of Kosovo

Similar as every year, during 2022, 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 Board of the Regulator, during 2022, have presented the Annual Report for 2021 to the Parliamentary Committee for 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 the functioning of the energy sector, analysing the data of licensees, including the development of the energy market in Kosovo.
- Board of the Regulator, on 07.11.2022, have presented an annual financial report for 2021 to the Parliamentary Committee for Budgets, Labour and Transfers.
- At the request of the Committee for Economy, Employment, Trade, Industry, Entrepreneurs and Strategic Investments, throughout 2022, ERO has prepared and submitted regular

quarterly reports in which activities of ERO and the state of the Energy Sector are described in details.

3.3 Meetings with other stakeholders- opening of the free market

Chairman of the Board of the Energy Regulatory Office Mr. Ymer Fejzullahu, has participated in the Sustainable Development Week edition in Kosovo. The Chairman of the Board was part of the Panel where were discussed the Clean Energy Package, legislative and implementation opportunities for Kosovo. The Chairman of the Board has shared with participants so far achievements with the implementation of the current regulatory legal framework covering the field of Renewable Resources and the future perspective in the development of the regulatory framework that will enable effective implementation of laws and successful transition in the future.

The Board of ERO has held a joint meeting with representatives of American Embassy in Kosovo, who were recently informed about latest developments in the energy sector, and in particular, discussed the situation created as a result of the judicial process, in which process, with a decision on a temporary measure, execution of the decision of ERO on retail electricity tariffs has been suspended. ERO has informed representatives of the American Embassy about uncertainties of the implementation, as well about the further difficulty of the already difficult situation of the energy sector in the country. Among other discussions, the procedural actions undertaken in this process by the ERO were elaborated, and recently with the submission of an extraordinary legal remedy, in addition to the request for a Legal Opinion, in the Supreme Court of Kosovo, as well with other requests for legal clarifications in the competent authorities of justice related to the implementation of the court decision.

Board of ERO has held a joint meeting with the representatives of French Development Agency (AFD), to discuss circumstances and challenges that the energy sector is currently facing. In this meeting, the potential needs for investments in this sector were also discussed, and in particular possibilities of investments in projects of renewable energy sources and in projects on energy efficiency, through the provision of loans and grants for support and technical assistance in their development.

On 23 March 2022, Board of the Energy Regulatory Office hosted the delegation of the Ministry of Foreign Affairs and the Energy Agency of Denmark. In the framework of the meeting, has been discussed the current state of energy sector including the role of ERO in this sector and the plans for the development of this sector. In this meeting, the areas of cooperation between ERO and the Danish Energy Agency (DEA), which is considering various options to support the energy transition in Kosovo, were also discussed.

Board of ERO has held a joint meeting with the Parliamentary group of the Alliance for the Future of Kosovo, who were recently informed about developments in the energy sector.

ERO has informed the parliamentary group of AAK on the work that is being carried out in this institution regarding the safety of supply in the country and plans of ERO, for the consumed energy to be affordable for customers. Also, the parliamentary group of AAK was informed about the energy flows in the country during this period, including import and export.

Among other discussions, the procedural actions undertaken by the ERO during the Licensing of Eletrosever and expectations on the fulfilment of Obligations by the Parties arising from the ERO Decision were elaborated.

Board of the Energy Regulatory Office has hosted the World Bank delegation at the meeting, the Board informed the World Bank delegation about latest developments in the Energy sector, as well as on the challenges that the sector is dealing with. Further, during the meeting has been discussed about the Strategy of Energy 2022-2031, including contribution of the Energy Regulatory Office.

Board of ERO has held a joint meeting with MCC representatives to discuss on the implementation modalities of the programme, which includes three projects, reserves and energy arbitration (batteries with a capacity of 170 MW, which provide a reserve for 340MWh), development of the manpower and inclusion of women in the energy sector, as well about the Project of American Institution Catalyst on Development, where as a whole, these projects reach the value of over 200 million Dollars.

Board of ERO has hosted British KFOR representatives in a meeting, who were informed about the current state of the energy sector. Among other things, was discussed about the situation created as a result of the decision of the Court of Appeals, challenges and difficulties caused by this decision in implementation, as well other topics related to the energy sector.

3.4 Cooperation with international organizations

Cooperation with NARUC/TETRATECH/USAID

ERO representatives have participated in the Workforce Gender Equality Program. This USAID-funded program is offered to industries that are traditionally dominated by men. This is a program that is dedicated to leaders of companies/institutions and develops the skills and tools needed to increase gender equality, diversity and inclusion in the workplace. The program has assessed the organization regarding gender equality, and provided training on change management, preparing managers to become agents of change within the organization. The program developed the skills that managers needed:

- Identify gender equality gaps within the organization;
- Develop a case that demonstrates how the organization will benefit from gender equality;
- Undertake specific and tangible actions to increase gender equality in the organization;
- Engage more men and women leaders within the organization who support the targeted change related to gender equality.

With support from (USAID), the National Association of Regulatory Utility Commissioners (NARUC) continues to assist national regulatory authorities (NRAs) by building capacity and facilitating close cooperation between regulators and other stakeholders in Southeast Europe. The overall aim of this aid is to support the development of competitive and transparent energy markets and their integration with the rest of Europe, whereby electricity transmission capacities and interconnections are optimised.

Fig. 3.1 Image from the joint meeting of NARUC with the Regulators of Albania, Kosovo, Macedonia and Greece

USAID has launched the Southeast Europe Electricity Market Coupling (SEE-MC) Initiative, and NARUC, in cooperation with the Greek Regulator, is supporting the SEE-MC by improving the readiness of the three countries (Albania, Kosovo and Macedonia) to the unification of energy markets as well as the advancement and development of the internal market.

The initial step of this initiative is the organization of workshops that focus on the development of the internal market and the coupling of the markets of these three countries, where the Greek experience in the creation of energy markets as well as its operation will be shared (the day-ahead market and intraday market), and later the possibility of coupling this market with the market of Greece.

Cooperation agreement between ERO and TETRA TECH/ESA

ERO and TetraTech have signed a cooperation agreement regarding the engagement of interns who wish to join the energy sector. The cooperation agreement aims to offer students and graduates an opportunity to gain experience in a professional environment through internship at ERO.

This Energy Sustainability Activity (ESA) aims to improve the country's energy security by strengthening the capacity and sustainability of local institutions to advance the development of the energy market. One of the main objectives of this program is to support local institutions and private renewable energy sources (RES) companies to strengthen and raise their capacity to promote and implement RES projects in Kosovo. For this purpose, the "New Energy" internship program is being developed, which promotes the integration of the young people workforce from marginalized communities and others to do internship in the main institutions of the country and private energy companies in Kosovo.

ERO has shown its willingness to cooperate and has already accepted a number of interns from the "New Energy" program and for a period of six months they will acquire the knowledge and skills in the regulation of the energy sector.
First, ERO provides the interns with the space and necessary work tools. ERO also tailors work assignments that match the interns' field of study and previous experience, striving to maximize their experiential learning.
Interns are monitored/supervised by an experienced employee, who guides the intern during his/her engagement with ERO.

Partnership Activity with the Austrian Regulator

With the financial support of the Austrian Regulator, representatives of the Energy Regulatory Office in June 2022 have stayed in Austria, and this partnership has enabled the professional staff of ERO to benefit from the best regulatory practices of the European regulators.

Partnership activities with ERRA

At the invitation of the Energy Regulators Regional Association, the Energy Regulatory Office (ERO) presented in Budapest the experience of the ERO in the recent review of electricity tariffs.
ERO has been invited to present the tariff review as a good international practice, taking into account the need to cover the cost of electricity supply and the need to promote energy efficiency through the establishment of a block tariff.
ERO has highlighted the main drivers of the increase in the cost of supply, the increase in the need for energy imports and the increase in the cost of imports as a result of the global energy crisis. ERO has also drawn attention to the unsustainable increase in demand for electricity as a result of the removal of the block tariff in 2017.
ERO's tariff review has restored financial stability in the sector, improved liquidity and financial stability of the sector and reduced electricity supply problems

3.5 Participation of the Regulator in international activities

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

3.5.1 Participation in the Energy Community Regulatory Board (ECRB)

The Energy Community (EnC) is an international organization established through an international treaty (the so-called Energy Community Treaty) in October 2005 in Athens, where the countries of the European Union and the South-Eastern Europe and the Black Sea region participate. EC activities during 2018 are focused towards the fulfillment of common goals: the implementation of the "acquis communautaire", the development of the harmonized regulatory framework at the regional level, as well as the liberalization and integration of the electricity and natural gas sector markets.

The EnC Contracting Parties are: Albania, Bosnia and Herzegovina, Kosovo, North 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 Observers.

Fig. 3.2 Member States of the South-East Europe Energy Community

The Energy Community Treaty (EnCT) is a key strategic component of the European Union (EU) for South-Eastern Europe and an effective pre-accession tool, aiming to extend the benefits of the regional Energy Market, before the countries of the region become members of the EU.

The main institutions of the EnC are: the Ministerial Council (MC), the Permanent High Level Group (PHLG), the Energy Community Regulatory Board (ECRB), the EnC Secretariat located in Vienna, and the four consultative forums: for electricity, natural gas, social issues and oil.

The Energy Community Regulatory Board (ECRB) is an institution established according to Article 58 of EnCT, consisting of Regulatory Authorities of contracting parties, participants and observers. The ECRB has the role of a coordinating body of regulatory authorities for the harmonization of the regulatory framework, the exchange of knowledge, and the development of practices for the implementation of the Treaty.

Based on the provisions of the EnC Treaty, the ECRB has these responsibilities:

- advises the Ministerial Council as well as the PHLG, on statutory, technical and regulatory issues;
- issue recommendations to the parties, in accordance with the provisions of the Treaty, on cross-border disputes, etc.;
- take measures against the parties, if authorized by the MC;
- helps cooperation and coordination between regulatory authorities;
- issues recommendations and prepares reports, regarding the operation of energy markets; AND
- requests the fulfilment of obligations by the parties according to EnCT.

In order to fulfil its responsibilities, ECRB is organized in working groups that carry out activities in the relevant fields. The ECRB is led by a president elected annually by representatives of national regulators, and a vice president who is delegated by the European Commission.

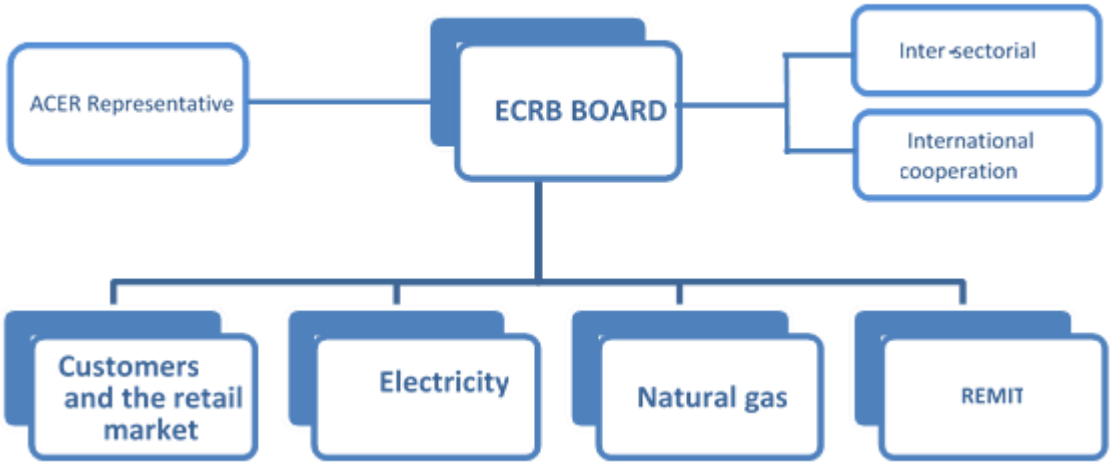


Fig. 3.3 The structure of the Energy Community Regulatory Board

3.5.2 Activities of the Regulator within the ECRB

Under its obligations to the EnC, ERO has appointed its own members to the ECRB and in each working group, as well as actively participates in the work of the Board and relevant working groups. Due to the restrictions from the COID-19 pandemic, during 2022, 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.

3.5.2.1 *Electricity Working Group*

During 2021, this Working Group has held regular “online” meetings and activities within its scope; for more efficient work, this group has undertaken its actions through 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, including cross-border balancing.
- **TF2 – System operation –** the activities of this sub-group are focused on the creation of a regulatory framework - the Guidelines on system operation, mainly on the assessment of the legal framework for voltage control and reactive power management by System Operators.
- **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 –** In the framework of this task force, the regulatory challenges of integrating renewable energy into energy systems and the responsibility of energy producers from renewable sources for balancing the system as well as the flexibility of the systems have been assessed.
- **TF5 – Opinions on the Electricity Grid Codes and Regulatory Guidelines –** the main task of this subgroup has been the coordinated review and provision of opinion on the Electricity Grid Codes and relevant regulatory guidelines.
- **TF6 –Implementation of grid codes and guiding regulations–** According to this duty, EWG shall review the monitoring process of ACER and ENTSO- E and shall report on the monitoring activity, and is mainly focused on the implementation of Grid Codes – Connection Code.

3.5.2.2 Gas Working Group (GWG)

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, activities are undertaken through these specific subgroups ("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 for Congestion Management -** Activities within this task force have focused on monitoring congestion 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 Grid Code for capacity allocation.
- **TF4 – Favourable 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.

3.5.2.3 Customers and Retail Markets Working Group

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 – Regulators' public communication -** The main task of this sub-group has been to evaluate the procedures and methods of public communications by national regulatory authorities and to identify effective and innovative means of public communication to reach new audiences.

3.5.2.4 REMIT Working Group

Four task forces have been operational under this group:

- **TF1 – REMIT Guideline -** will evaluate whether the respective guideline developed from ACER can be used in the same manner or need adaptation to the specifics of the Contracting Parties or "REMIT light" version applicable in the Energy Community. In the last case, the working group will develop special guidelines of ECRB.
- **TF2 –Maintenance of central register**- will evaluate the possibility of carrying out the registration and establishment of central register, including possible IT requirements for automated collection of registration data.
- **TF3 –Internal information platform -** this task force will discuss and evaluate the need for the centralized platform for publication of the internal information.
- **TF4 – Implementation of REMIT-** the Regulator will report on cases, investigations undertaken, etc. in relation to REMIT, including cases discussed and coordinated by the ECRB.

- **TF5 – Penalties regime:** The role of the task force will be to select one of several EU members as a benchmark against which to evaluate the various penalty regimes applied or to be applied in the Contracting Parties.
- **TF4 – Coordination of investigations:** The role of the ECRB under the EnC REMIT is to facilitate and coordinate the investigations of the Regulators, in particular cases that have a cross-border impact. The ECRB REMIT Procedural Act provides an operational framework for such coordination facilitated by this task force.

3.6 Procurement activities

The regulator continues to follow the procurement procedures from the Central Procurement Agency (CPA), which sometimes, due to the amendment of the Law on Public Procurement, are protracted and lead to difficulties in providing services and supplies which are necessary for a normal operation of the office.

4 FINANCIAL REPORTING FOR THE REGULATOR

The Energy Regulatory Office is funded through own revenues, in accordance with the Law on the Energy Regulator, Chapter 4, namely from taxes collected from licensed operators in the energy sector.

4.1 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 2022, the Energy Regulatory Office realized revenues in the amount of €1,174,798.10. Given that the total amount of budget spent by ERO in 2022 is €708,181.09, unspent revenues in the amount of €466,617.01, in accordance with Article 23 of the Law on Energy Regulator, are transferred to the Budget of the Republic of Kosovo.

Tab. 4.1 Revenues

Description	Amount
Own Source Revenues 2022	1 174 798,10 €
Expenditures 2022	(708 181,09) €
Revenues paid to the Budget of the Republic of Kosovo	466 617,01 €

4.2 Budget

The Assembly of the Republic of Kosovo, in line with Law No. 06/L-066 on the Budget of the Republic of Kosovo for 2022, approved the budget of the Energy Regulatory Office in the amount of €953,660, which has been allocated as a government grant, although according to the Law on the Energy Regulator, ERO shall be funded through own revenues and only in cases where these revenues are insufficient, then ERO may use budget allocations in the form of a government grant. According to the economic categories, the ERO budget is as follows:

Tab. 4.2 Budget at the beginning of the year

Description	Budget
Wages and salaries	475 148,00 €
Goods and services	385 712,00 €
Utilities	22 000,00 €
Capital expenditures	70 800,00 €
Total	953 660,00 €

By Government Decision No. 14/106 dated 09.11.2022, the budget of the Energy Regulatory Office has been reduced by €200,000. The budget has been cut under the economic category "Goods and Services" since CPA, in the absence of responsive offers, has not been able to select the EO for the implementation of the project "The services of auditing / verification of capital investments made in the Distribution Network". Expressed as a percentage, the ERO budget has been cut by 21%.

Tab. 4.3 Final budget

Description	Budget
Wages and salaries	475 148,00 €
Goods and services	185 712,00 €
Utilities	22 000,00 €
Capital expenditures	70 800,00 €
Total	753 660,00 €

4.3 Budget expenditures

To fund the activities carried out in 2022, the ERO spent €708,181.09.

According to the economic classification, ERO's expenditures are as follows:

Tab. 4.4 Expenditures by economic categories

Description	Amount
Wages and salaries	439 868,92 €
Goods and services	180 980,88 €
Utilities	17 076,45 €
Capital expenditures	70 254,84 €
Total	708 181,09 €

The realization of the budget in relation to the remaining budget after cuts is 93.97%.

The rate of budget realization according to economic categories, expressed as a percentage, is presented in the table below.

Tab. 4.5 Budget realization expressed in percentage

Description	Budget	Expenditures	Difference	Execution in %
Wages and salaries	475 148,00 €	439 868,92 €	35 279,08 €	92,58%
Goods and services	185 712,00 €	180 980,88 €	4 731,12 €	97,45%
Utilities	22 000,00 €	17 076,45 €	4 923,55 €	77,62%
Capital expenditures	70 800,00 €	70 254,84 €	545,16 €	99,23%
Total	753 660,00 €	708 181,09 €	45 478,91 €	93,97%

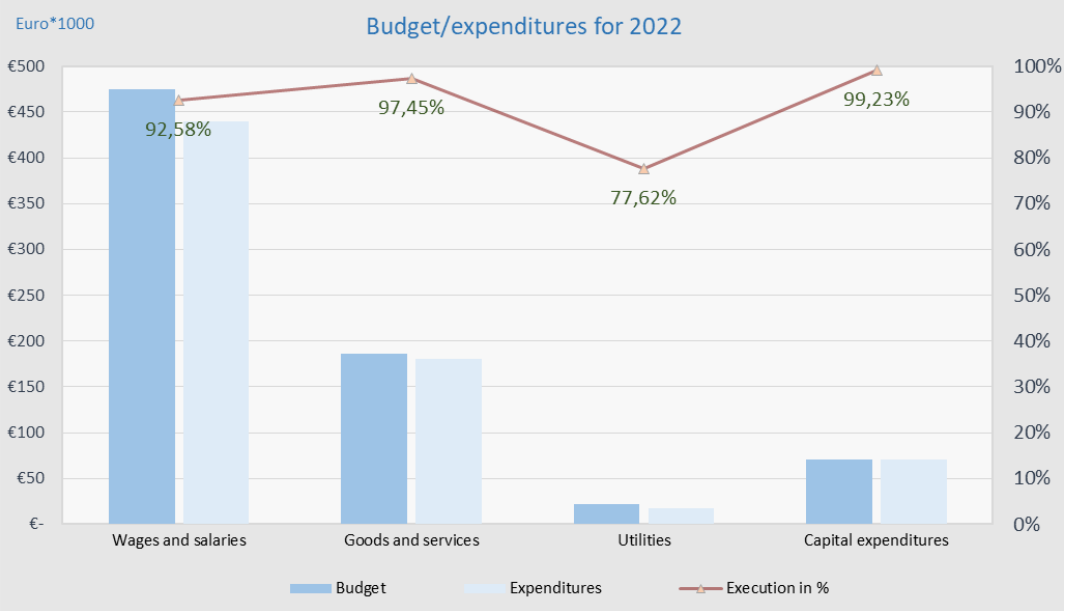


Fig. 4.1 Budget and expenditures for 2022

The following tables present the expenditures by economic codes.

Tab. 4.6 Wages and salaries

Wages and salaries	Amount
Net wages	365 348,86 €
Personal Income Tax	32 627,36 €
Employer's pension contribution	20 946,35 €
Employee's pension contribution	20 946,35 €
Total	439 868,92 €

Tab. 4.7 Goods and Services

Goods and services	Amount
Daily allowances for business trips domestically	32,00 €
Accommodation for business trips abroad	1 623,00 €
Business trip expenses abroad	2 984,88 €
Daily allowances for business trips abroad	8 392,65 €
Accommodation for business trips abroad	3 943,88 €
Other expenses for business trips abroad	1 235,61 €
Internet expenses	3 734,93 €
Mobile phone expenses	5 097,07 €
Postal costs	286,80 €
Education and training services	- €
Various intellectual and counseling services	4 079,95 €
Printing services	26,00 €
Other contractual services	455,00 €
Subscription costs	6 560,00 €
Furniture	4 212,00 €
Computers	- €
Hardware for IT	- €
Other equipment	- €
Office supplies	4 177,82 €
Beverage supply	3 160,88 €
Accommodation	- €
Fuel for power generator	464,48 €
Fuel for vehicles	5 445,94 €
Vehicle registration	315,00 €
Vehicle insurance	833,83 €
Municipal vehicle registration fee	30,00 €
Securing the buildings	11 895,40 €
Vehicle maintenance and repair	2 163,00 €
Maintenance of buildings	3 928,20 €
Information technology maintenance	994,90 €
Furniture and equipment maintenance	- €
Buildings rent	89 742,12 €
Rental for equipment	1 465,60 €
Machinery rent	5 477,56 €
Advertising and vacancies	- €
Business lunches	812,50 €
Payment of rental tax	7 409,88 €
Total	180 981 €

As shown in Table 5.7, the amount of funds spent for this category of expenditures is €180,980.88.

The budget expenditures based on the activities are as follows:

Tab. 4.8 Expenditures according to activities

Expenses by activities	Amount
Travel expenses	18 212,02 €
Telecommunication services	9 118,80 €
Service costs	11 120,95 €
Furniture and equipment purchase	4 212,00 €
Other purchases goods and services	7 338,70 €
Fuel and fuel oil	5 910,42 €
Registration and insurance services	13 074,23 €
Maintenance	7 086,10 €
Lease	104 095,16 €
Marketing expenditures	- €
Representation expenditures	812,50 €
Total	180 980,88 €

Tab. 4.9 Utilities

Utilities	Amount
Electricity	16 510,47 €
Water supply	257,05 €
Telephone charges	308,93 €
Total	17 076,45 €

Tab. 4.10 Capital expenditures

Capital expenditures	Amount
Information Technology equipment	70 254,84 €
Total	70 254,84 €

5 ELECTRICITY SECTOR

5.1 Characteristics of the electricity sector

The power system in the Republic of Kosovo, consisting of electricity generation, electricity transmission, electricity distribution and suppliers as well as wholesalers, is mainly designed to produce basic electricity, which is based on lignite as raw material, but not for covering the maximum loads and balancing the system, which remains a big challenge for all participants in the sector.

During 2022 in Kosovo there are no new generation capacities, therefore the installed production capacities are 1,568 MW, including generation capacities from RES, where the operating capacity is considered to be around 1,236 MW, of which thermal power plants (TPP) with lignite make up about 77.69% , while the rest consists of HPP Ujmani, RES in transmission and other RES (hydropower plants, solar panels and wind power plants) with 22.31%.

Most of the consumption is covered by local production, but due to the age of the thermal power plants and the lack of flexibility to adapt to the demand in different periods, especially at peak times, the need for imports and sometimes exports for balancing the system has arisen.

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

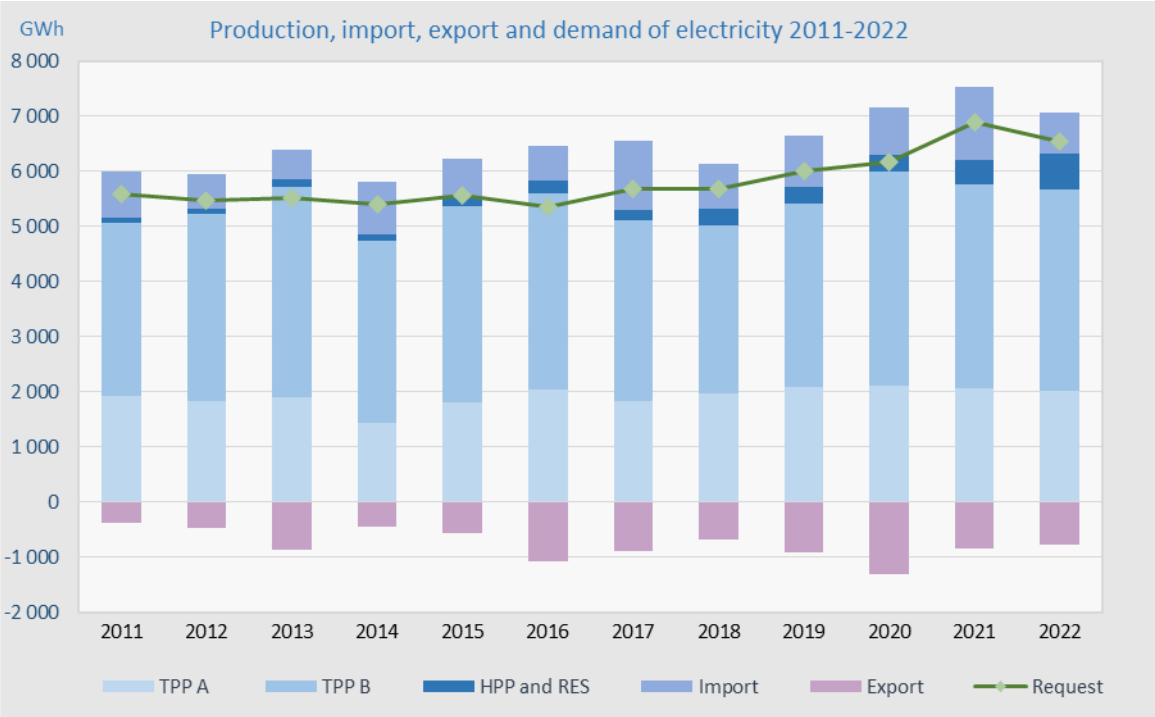


Fig. 5.1 Energy production, import and demand 2011-2022

5.1.1 Electricity market

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

Kosovo and Albania have continued with the activities related to the creation of the joint power exchange for the day-ahead and intraday markets, as well as the coupling of the electricity markets. The working groups and representatives of both countries have held joint meetings regarding the action plan for carrying out these activities for the preparation of the necessary documents for the operation of the Albanian Power Exchange and the market coupling between the two countries.

In Kosovo, there is still no organized one-day-ahead or intraday market, therefore wholesale electricity trading is mainly carried out 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).

HPP Ujmani, also during 2022 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 Agreement [4] (BSA) 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 Procedure[5]".

Taking into account the old age of thermal power plants, the lack of regulating generators, Kosovo power system does not have the flexibility to adjust to demand, especially high demand in peak time, therefore the need for electricity imports namely exports arises. From the overall electricity demand at the country level, 6,547 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 shows system balancing, which shows that during 2022 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/Tregu/Procedura_per_Tregtimin_e_Energjise_Elektrike.pdf

Tab. 5.1 Balancing of the power system 2022

	Balancing of power system 2022	GWh	%
1	Production from generators in transmission	6,147	94%
2	Production from generators in distribution	168	3%
3	Import	761	12%
4	Total available energy	7,076	108%
5	Export	787	12%
6	Net import/export	26	0%
7	System deviations (offtake from the system)	-186	-3%
8	Transit	2,475	38%
9	National demand	6,547	
10	Transmission losses	118	2%
11	Consumption of customers in transmission network	132	2%
12	LLOMAG consumption	101	2%
13	Load in distribution network	6,196	
14	Distribution losses	1,403	23%
15	Net consumption in distribution	4,794	77%

Compared to 2021, production from generators that deliver electricity to transmission has increased by 1.7%. Import in 2022 has decreased by 41.9% compared to the previous year, and export has also decreased by 5.72%. The national demand in 2022 was 6,547 GWh. It is worth noting that the deviations in 2022 were 40.9% higher than the previous year, mainly due to deviations to cover consumption in the four northern municipalities of the country.

KOSTT continues to operate as a Regulatory Area within the Kosovo-Albania Regulatory Block, where the balancing of the system is the full responsibility of KOSTT, which also 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, except for the allocation of cross-border capacities with Serbia.

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.

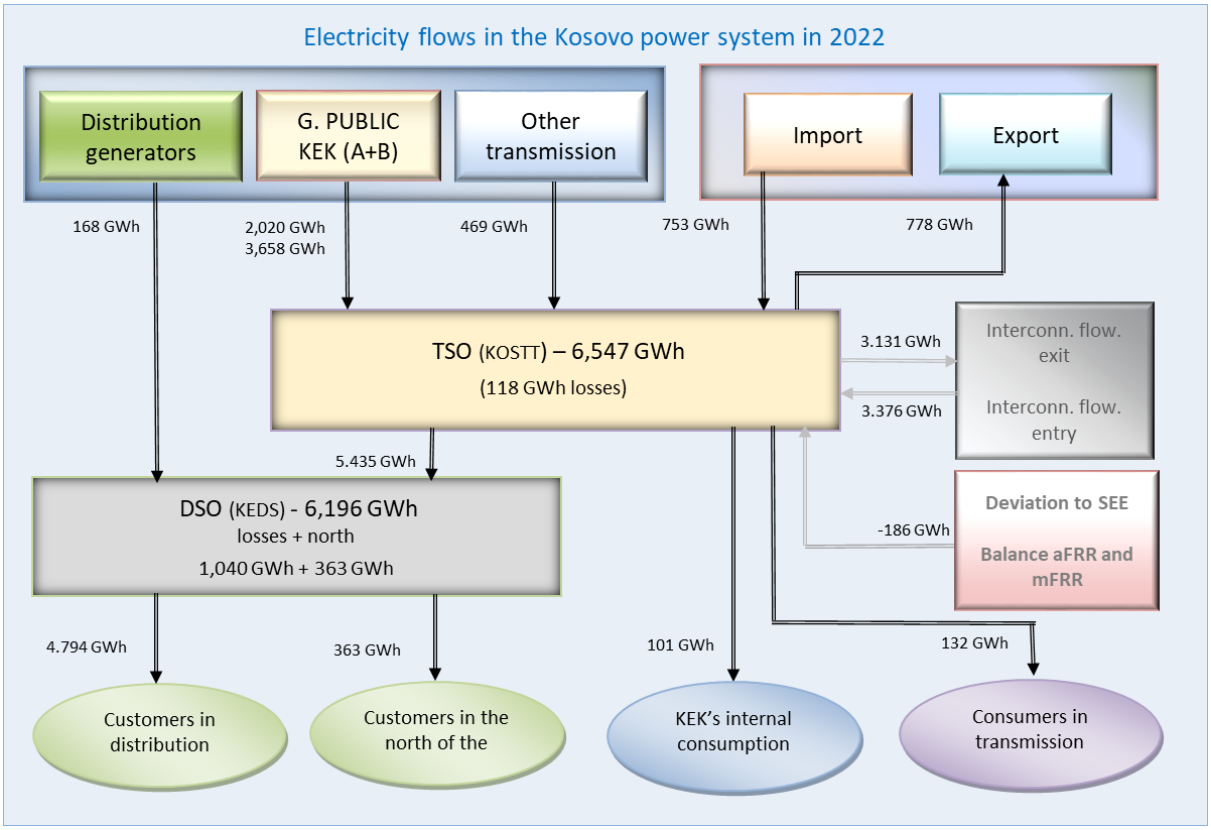


Fig. 5.2 Electricity flows in the system in 2022

5.1.2 Adequacy of generation and security of supply

Domestic generation is not sufficient to cover the maximum load in Kosovo's electric power system. This lack of energy to meet the national demand is covered by electricity imports.

The total operational capacity of generators in Kosovo is 1,236 MW, while the maximum load this year was 1,429 MW, so the ratio of adequacy of generation to the maximum load is 86.5%.

The table below shows the maximum and minimum loads during 2022 on a monthly basis.

Tab. 5.2 Maximum and minimum loads in 2022

Load 2022	Jan	Feb	Mar	Ap	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h	MWh/h
Maximal	1,429	1,291	1,311	1,077	857	721	768	764	699	879	1,135	1,372
Minimal	715	562	486	369	294	306	337	332	324	350	413	782

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 (Pmax and Pmin) 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. 5.3 Maximum and minimum loads of the power system

Viti	Maximum load							Minimum load						
	Pmax			Production	Import	Export	Deviation*	Pmin			Production	Import	Export	Deviation*
	[MW]	Date	Time	[MW]	[MW]	[MW]	[MW]	[MW]	Date	Time	[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
2021	1,398	21.12	23:00	819	360	147	366	310	5.08	20:00	416	600	374	332
2022	1,429	24.01	23:00	946	629	267	121	294	9.08	04:00	561	401	654	14

* Deviation of the system towards interconnection system

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

5.2 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.

5.2.1 Lignite production and consumption

Lignite production in 2022 was 8.28 million tons, while consumption 8.40 million tons, these quantities are almost the same compared to 2021.

Production and consumption of lignite by months, for 2022, is presented in Table 6.4.

Tab. 5.4 Lignite production and consumption 2022

Lignite production/consumption	Total	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Lignite production (t*1000)	8 279	783	781	637	649	694	592	638	573	844	755	602	731
Lignite consumption (t*1000)	8 404	746	719	891	720	699	724	612	617	593	599	698	785
Lignite consumption in the marke	153	17	28	31	28	23	25	0	0	0	0	0	0

The following figure shows the production and consumption of lignite during 2011 – 2022.

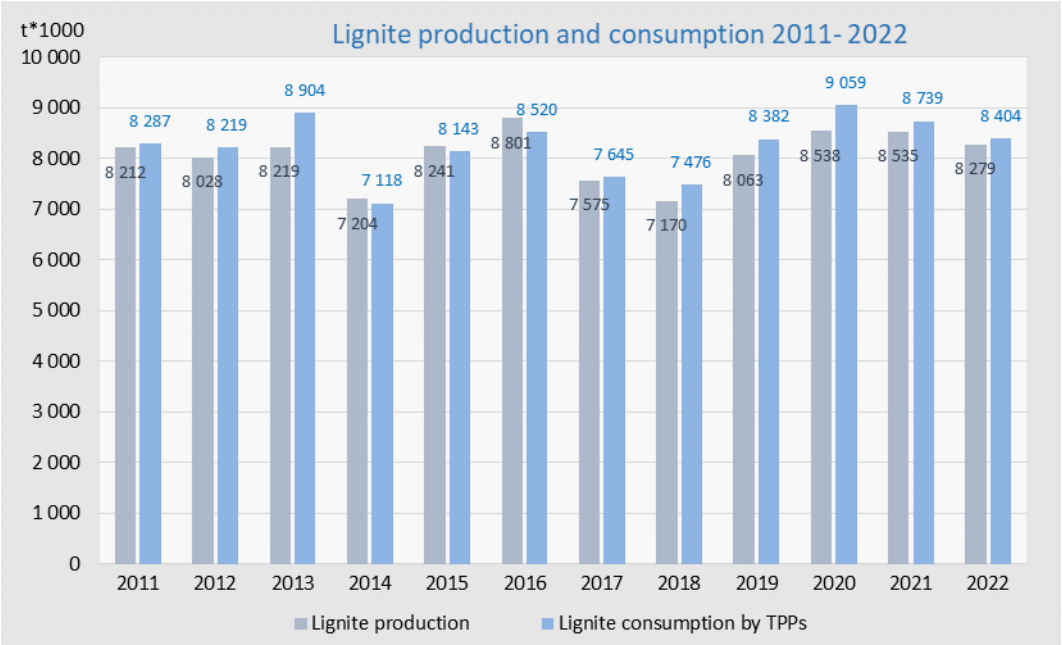


Fig. 5.3 Lignite production and consumption 2011 – 2022

5.3 Electricity production

5.3.1 Electricity production capacities

The total operating capacity of electricity generation in Kosovo is 1,236 MW, of which 960 MW or 77.7% are from thermal power plants and the rest are hydro power plants and renewable energy sources (hydro power plants, wind farms and photovoltaic panels).

The capacity of generating units is shown in the table below according to the type of primary source, installation and operating capacity, minimum and maximum production limits and year of commissioning.

Tab. 5.5 Generation capacities in Kosovo power system

Production units	Unit capacity (MW)			Entry in operation
	installed	net	Min/max	
TPP Kosova A1	65	t operational		1962
TPP Kosova A2	125	t operational		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		1981
HPP Lumbardhi I	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 HPP (outside the support scheme)	55,25	51,29		
EGU Belaja	8,06	8,06		2016
EGU Deçani	9,81	9,81		2016
HPP Hydroline-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		2021
HPP Lepenci 3	10,00	10,00		2019
HPP Dilli com	0,31	0,31		2020
HPP Hydroline-Albaniku II	3,55	3,55		2020
HPP ECO Energji	1,00	1,00		2020
HPP Hidroline-Albaniku IV	1,12	1,12		2021
HPP Restelica 3	2,35	2,35		2021
HPP Brod I	2,48	2,48		2021
HPP Sharri	6,45	6,45		2021
HPP	4,60	4,60		2021
HPP Shterpca	5,30	5,30		2021
Wind Power	1,35	1,35		2010
Air Energy-Kitka	32,40	32,40		2018
SOWI Kosova	103,41	103,41		2021
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 HPP (inside the Support Scheme)	224,34	224,34		
Total	1 567,59	1 235,63		

5.3.2 Electricity production

The total production of electricity in 2022 was 6,315 GWh, while in 2021 it was 6,207 GWh, which means that there is an increase of 1.7%. Whereas, compared to the electricity balance for 2022, the production has been realized around 95.7%.

The table below presents the national production and own expenditure by units and months during 2022.

Tab. 5.6 Electricity production in 2022

Producers GWh	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
TPP A3 gross	831,5	90,7	8,1	106,3	103,1	73,8	38,2	39,9	93,1	75,8	18,3	100,7	83,3
TPP A4 gross	983,4	90,5	98,4	101,3	81,4	52,2	35,1	94,5	107,0	28,2	89,5	101,6	103,5
TPP A5 gross	480,6	80,2	87,7	65,5	0,0	85,8	99,3	62,2	0,0	0,0	0,0	0,0	0,0
TPP Own expenditure:	275,1	31,6	23,2	31,6	21,7	26,2	22,1	23,7	22,7	13,5	13,8	23,3	21,8
TPP A threshold	2 020,3	229,8	171,0	241,6	162,9	185,7	150,5	172,9	177,4	90,5	94,1	179,0	165,1
TPP B1 gross	2 148,1	205,3	176,2	197,4	189,2	139,6	187,1	68,2	203,8	200,3	191,9	180,5	208,6
TPP B2 gross	1 902,8	58,8	177,7	196,0	190,2	174,5	197,3	203,9	43,3	155,7	166,9	148,5	190,1
TPP B Own expenditur	393,4	26,5	33,5	37,8	36,4	31,1	37,1	27,0	23,9	34,9	35,2	31,8	38,0
TPP B threshold	3 657,5	237,5	320,3	355,7	343,0	283,0	347,3	245,0	223,2	321,1	323,6	297,2	360,6
Ujmani	77,8	3,5	3,5	4,1	9,2	11,6	5,3	5,5	4,4	3,5	4,7	6,9	15,6
Lumbardhi	28,6	0,9	0,6	0,8	4,0	5,3	3,1	0,0	0,0	0,0	0,0	2,7	11,4
Kitka	87,8	9,2	8,5	7,7	9,1	4,2	5,4	6,6	5,9	7,1	6,5	7,3	10,4
Sowi	275,1	29,0	29,9	26,3	25,5	14,6	16,2	16,4	14,6	27,5	17,6	30,8	26,7
HPP Distr.	167,8	7,3	8,6	9,6	29,0	30,9	17,9	11,5	5,6	6,7	6,2	12,2	22,3
Total	**6 315,1**	**517,2**	**542,4**	**645,7**	**582,7**	**535,3**	**545,7**	**457,9**	**431,0**	**456,4**	**452,7**	**536,1**	**612,1**
Balance 2022	6 598,0	543,5	588,5	716,3	566,7	591,6	596,7	428,0	400,2	397,7	559,4	594,2	615,3
Total ratio/balance	95,7%	95,2%	92,2%	90,1%	102,8%	90,5%	91,5%	107,0%	107,7%	114,8%	80,9%	90,2%	99,5%

Gross production of thermal power plants in 2022 was 6,346 MWh, of which 668 MWh or 10.5% was consumed by the thermal power plants themselves as their own expenditure. A part of these own expenditures (for both generators TPP Kosova A and TPP Kosova B) is realized directly by the internal plants, while the rest is fed into the transmission system and then consumed by the power plants.

The figure below presents the share of generators in the total electricity production in 2022.

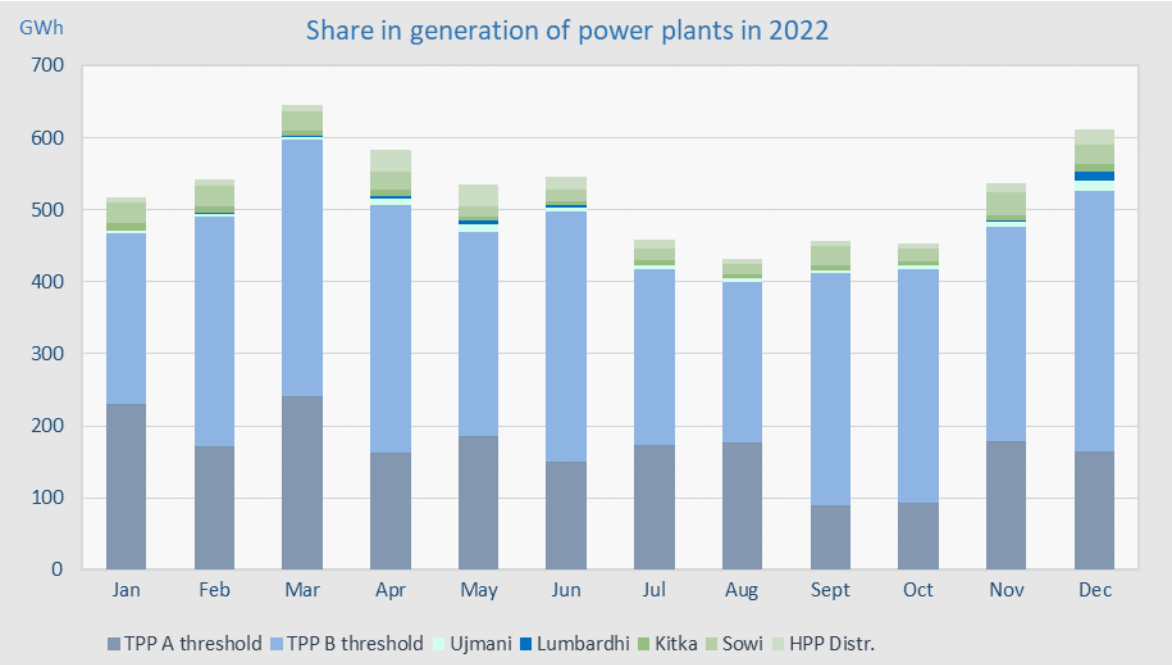


Fig. 5.4 Production of generating units in 2022

The production of RES connected to the transmission network in 2022 was 469.4 GWh and is higher by 57.8% compared to 2021, due to the operation at full capacity of 103.41 MW of the SOWI wind farm. While the production of RES connected to the distribution network was 167.8, and is 20.2% higher compared to 2021.

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

Tab. 5.7 Production of RES connected to transmission network in 2022

RES in transmission	Installation capacity	Production	Participation in
	MW	MWh	%
HPP Ujmani	35,00	77 828	16,58
HPP Kaskada Lumbardh	32,15	28 615	6,10
Air Energy/Kitka	32,40	87 822	18,71
PEE Selaci	103,41	275 121	58,61
Total RES	202,96	469 387	100%

* Share of generating units in the production of RES in transmission

Tab. 5.8 Production of RES connected to distribution system in 2022

RES in distribution	Installation capacity	Production	*Participation in production
	MW	MWh	%
Hydroline	4,58	17 258	10,28
Dikanci	4,02	9 607	5,73
Radavci	1,00	3 207	1,91
Burimi	0,95	1 241	0,74
Eurokos-JH	4,80	42 167	25,13
HPP Brezovica	2,10	144	0,09
HPP Orqusha	4,00	118	0,07
HPP Lepenci 3	9,99	0	0,00
HPP Eko Energji	1,00	638	0,38
HPP Dilli com	0,31	10 233	6,10
Wind	1,35	646	0,39
Solar-C	0,10	15 102	9,00
Solar-Feti	0,10	29 226	17,42
Solar Onix	0,50	4 020	2,40
Solar Birra Peja	3,00	1 425	0,85
Solar Food Fridge	3,00	1 220	0,73
Solar power plant "Eling"	0,40	10 279	6,13
Solar Green Energy Plant	3,00	8 234	4,91
HPP Sharri	6,45	4 663	2,78
HPP Vica	4,60	4 187	2,50
HPP Shterpca	5,30	4 184	2,49
DH. Gjakova		1	0,00
Total RES	60,55	167 798	100%

Operation of generating units

Compared to last year, the number of failures of generating units with lignite was almost the same. The following table shows all the types and frequency of interruptions and the availability in working hours of the thermal power plants for 2022, where it is noted that the availability of the generating units of TPP Kosova A3 and TPP Kosova A5 has been good.

Tab. 5.9 Interruptions of generating units 2022

2022	TPP Kosova A			TPP Kosova B	
	A3	A4	A5	B1	B2
Planned interruptions	5	4	5	3	3
Unplanned interruptions	4	2	1	7	5
Failures	2	2	0	9	4
Total interruptions	11	8	6	19	12
Working hours	5 956	6 961	3 602	7 778	7 277

The hours of operation of the generating units of TPP Kosova A and TPP Kosova B are shown graphically in the following figure, with variations according to the units, where it can be observed

that units B1 and B2 have operated around 86% of the hours of the year, while in 2021 have operated 84% of the hours of the year.

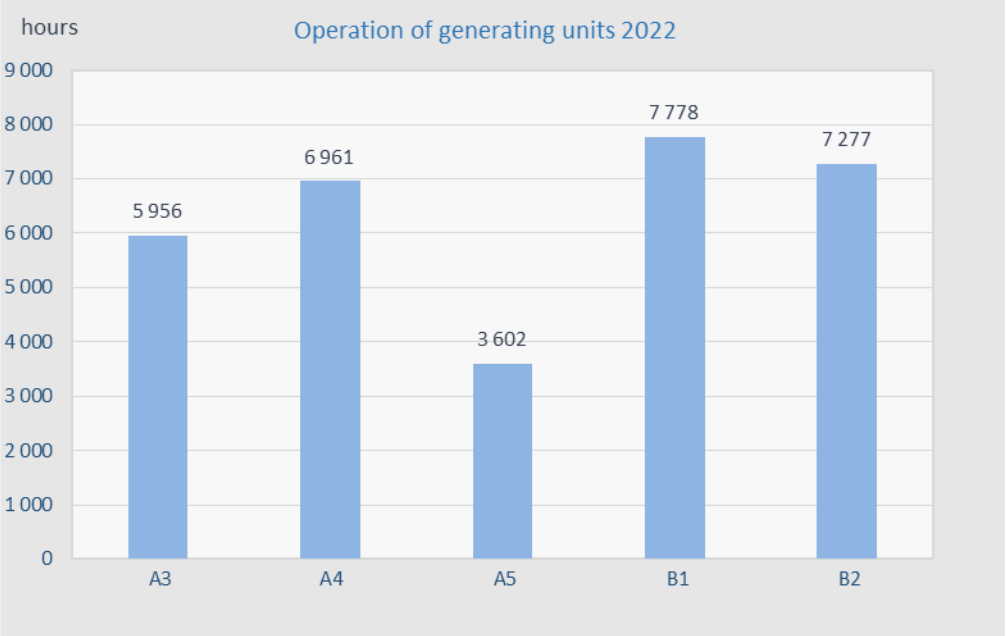


Fig. 5.5 Operation of generation units in 2022

The figure below presents the production of generating units for the period 2011 – 2022.

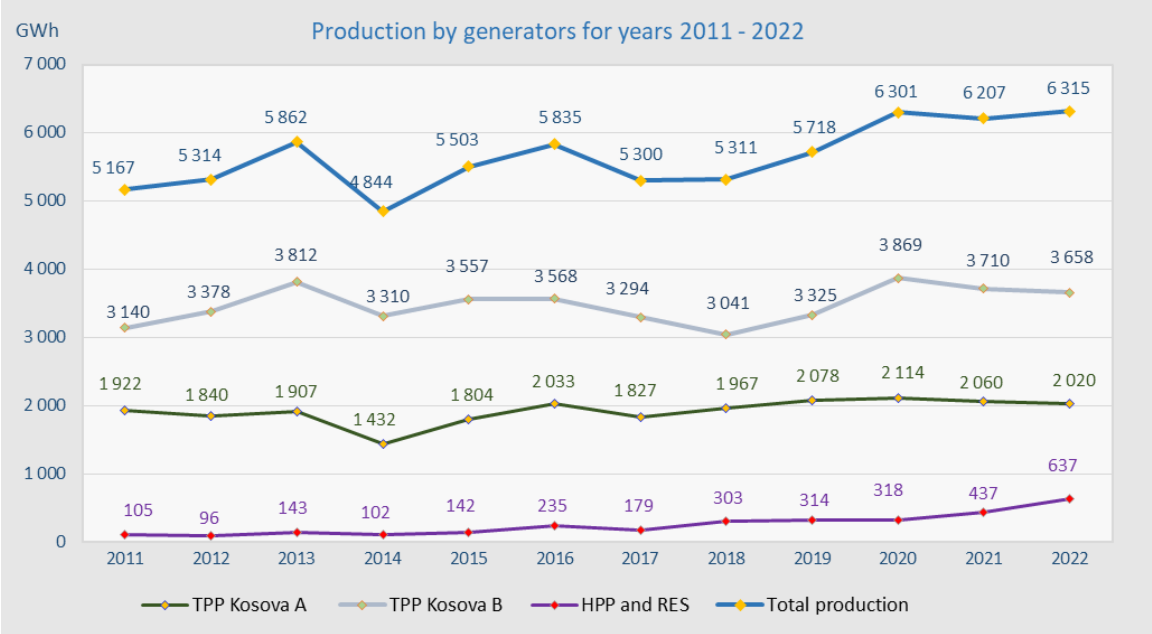


Fig. 5.6 Production of electricity for 2011 – 2022

5.4 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 ability of the network to meet the requirements needed for the transmission of electricity.

The transmission network of the electricity system of Kosovo is quite developed and offers sufficient security of the system and is well inter-connected with the regional and European system through interconnecting lines with:

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

The transmission network of the electric power system of Kosovo meets the local transmission needs as well as the N-1 criterion for the entire high voltage level.

In the following tables, the transformational capacities and transmission network lines are presented, according to the voltage level:

Tab. 5.10 Substations in the transmission network

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	14	26	913,5
110/35	KOSTT	7	19	641
110/10	KOSTT	2	8	252
35/110 (Deçan)	Kelkos	-	1	40
Total		41	89	6 608

Tab. 5.11 Lines in the transmission network

Voltage (kV)	Owner	Length (km)
400	KOSTT	279,5
220	KOSTT	238,5
110	KOSTT	912,1
Total		1 430,1

The scheme below presents basic information on the number of substations (NS), transformers (TR) and the installed transforming power, the length of the lines, as well as the power stations connected to the corresponding voltage level.

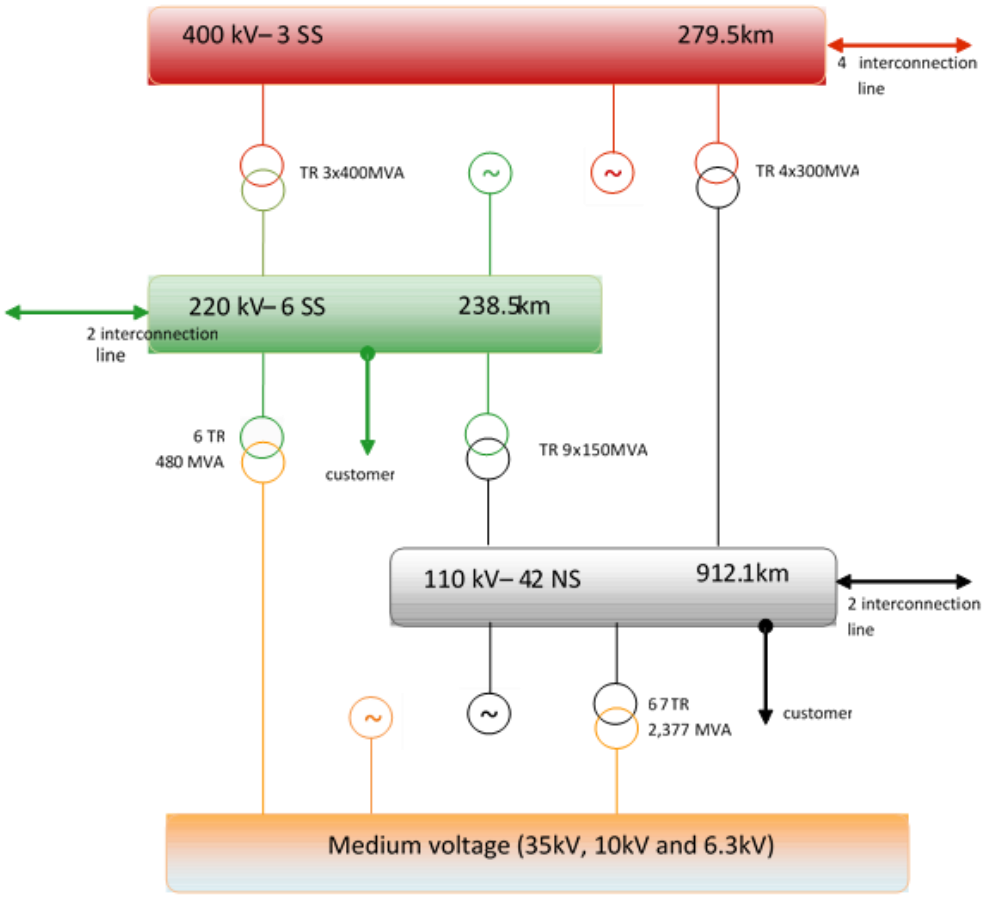


Fig. 5.7 Basic Data of the Transmission Network

5.4.1 Electricity flows in the transmission network

The transmission system in Kosovo is well inter-connected with the regional and European system through interconnecting lines with neighbouring countries and has sufficient capacities to cope with the electricity flows in the system, to cover the demand of customers from local production and import but also for eventual exports of electricity surpluses, as well as for electricity that passes as transit from other countries.

It should be noted that the transit of electricity loads the network by adding losses, depreciation of the network, as well as the need for maintenance of the transmission network, for which the operator is compensated through the ITC Mechanism. The transit of electricity in the Kosovo network in 2022 was 2,475 GWh or about 26.1% compared to the demand.

The figure below shows the electricity flows through all interconnection lines in both directions (input, output)).

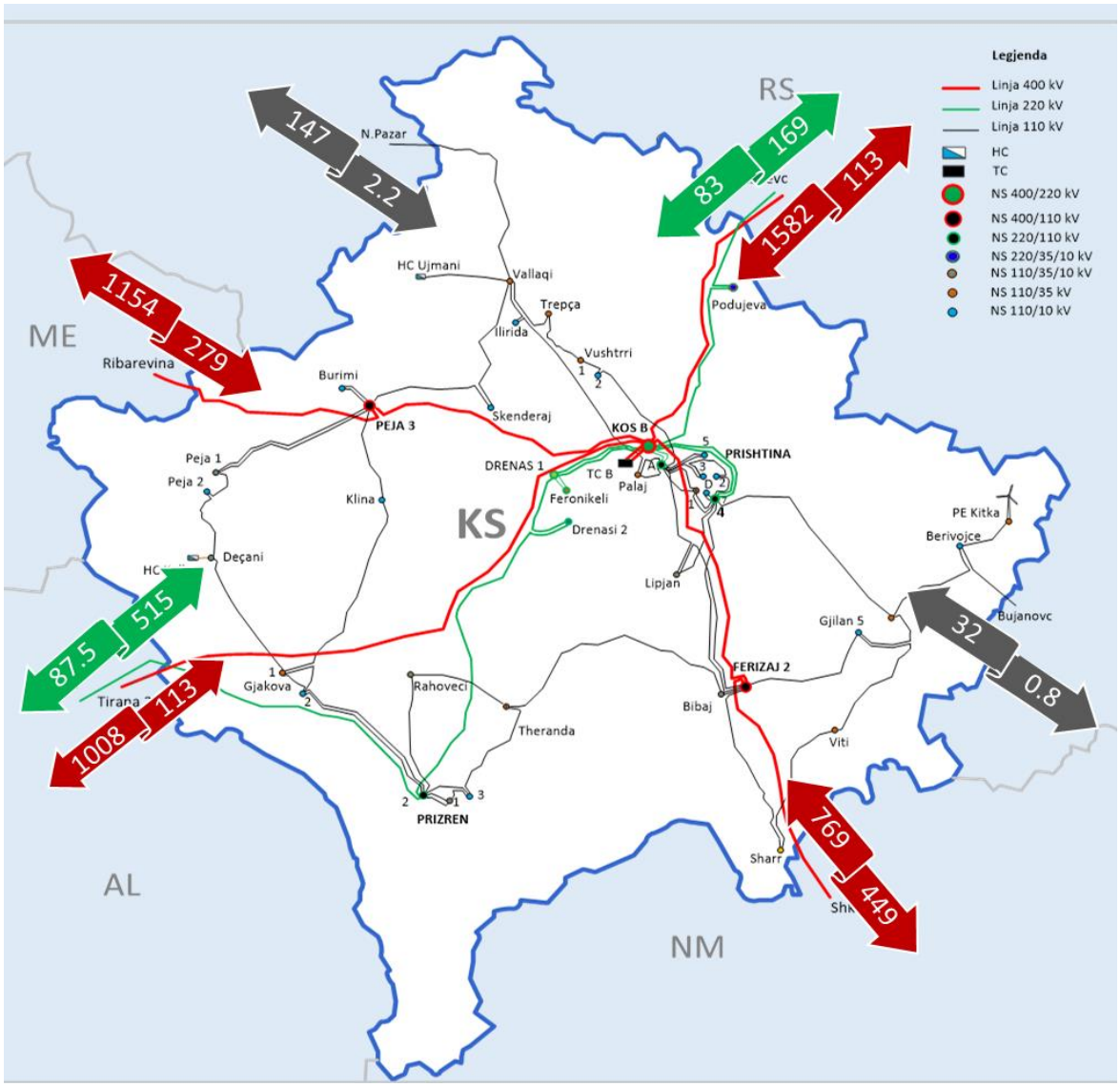


Fig. 5.8 Electricity flows through interconnection lines)

5.4.2 Investments in the transmission system

During 2022, investments were made in the transmission network, where the investment projects are presented in the categories as follows:

Projects that have been completed in 2022 are under the one-year warranty period

During 2022, the project has been completed technically and financially, which means that it has a guarantee period of one year and the assets have passed to the Transmission System:

- The double 110 kV line and the cable line, SS Fushë Kosova;

The projects financed by KOSTT, which started in 2021 and 2022 and are in the implementation phase

The project in Kastriot (2021) which includes:

- Construction of NS. 110/35/10(20) kV Kastrioti with 40MVA transformer, and
- Construction of the 110kV line/cable for connecting the new 110/35/10(20) kV substation Kastrioti,

Project in Fushë Kosovë (2022) that includes:

- Construction of NS. 110/35/10(20) kV Fushë Kosova.

Some of the projects planned to start implementation in 2022, but must be retendered according to the preferences of the General Audit and in accordance with the Construction Law and the Procurement Law:

- Project (ID/011): SS Malisheva AIS 220/35/10(20)kV; AND
- Supply and installation of power transformers for SS Malisheva and SS Fushë Kosova;

Phase VI and VII projects – Financing from the German Development Bank KfW for the implementation of the projects.

According to the Investment Plan, this group of projects is planned to be co-financed by KFW/KOSTT. Borrowing between the Government of the Republic of Kosovo, KfW (Kreditanstalt für Wiederaufbau) and KOSTT within the framework of interstate cooperation between the Republic of Kosovo and the Federal Republic of Germany. The planned projects are as follows:

a. Consulting services for the preparation of the tender file and supervision of the realization of the projects;
b. LOT 1 - SS 110/10(20) kV Dragash with 2x40MVA transformers and transmission lines;
c. LOT 2 - Rehabilitation of SS and supply with 40MVA power transformers;
d. LOT 3: Design, supply and installation of power transformers;
e. LOT 4: Transmission lines.

During 2022, an application was made for the IPA 2023 fund (Instrument for Pre-Accession Assistance) in the EU for a donation for the project:

- Re-vitalization and strengthening of the 110 kV power line segment SS Kosova A - SS Bardhi - SS Ilirida - SS Vallaq

Also, during 2022, the implementation of the projects signed for the projects continued:

- Adaptation of SCADA hardware and software in SS Rahoveci 110/35/10kV and SS Palaj110/35/10kV;
- Adaptation of Hardware and Software for SCS in SS Gjakova 2;
- Supply of instruments and work tools for maintenance of telecommunications equipment;
- Supply of ADSS optical cable;
- Supply of air conditioning in KOSTT Substations;
- Supply of hardware.

For the first two projects, the contracts were signed at the end of 2021.

5.4.3 Maximum loads and demand for electricity in the energy system

In order to analyse the operation of the energy system, among other things, the value of the maximum (peak) loads is also important, and for this the five (5) maximum loads realized at different hours and days of the year are usually taken. The values of maximum (peak) loads for 2022 are presented in the table below.

Tab. 5.12 Values of maximum (peak) loads in 2022

Maximum load Pmax (MW)	Date	Time
1 429	24.01.2022	23
1 389	26.01.2022	23
1 375	13.01.2022	18
1 349	22.01.2022	24
1 341	12.01.2022	19

The maximum load in the energy system of Kosovo was recorded on January 24, 2022 at 23:00 hrs in the amount of 1,429 MW, which is higher than the maximum load in 2021 where it was 1,398 MW. The minimum load was recorded on May 29, 2022 at 06:00 in the amount of 294 MW

As mentioned above, due to the inflexibility of the energy system, and especially the inflexibility of the existing power plants, it happens that on the same day, even at the same hour, we have imports and exports of electricity. But, generally within the same day, during the daytime (high tariff) the production does not cover the demand and it is necessary to import electricity, while during the night time (low tariff) there are surpluses of electricity which must be exported.

The hourly average of demand, production and exchange of electricity, from where their relationship can be seen during different periods of the day, is presented in the chart (diagram) below.

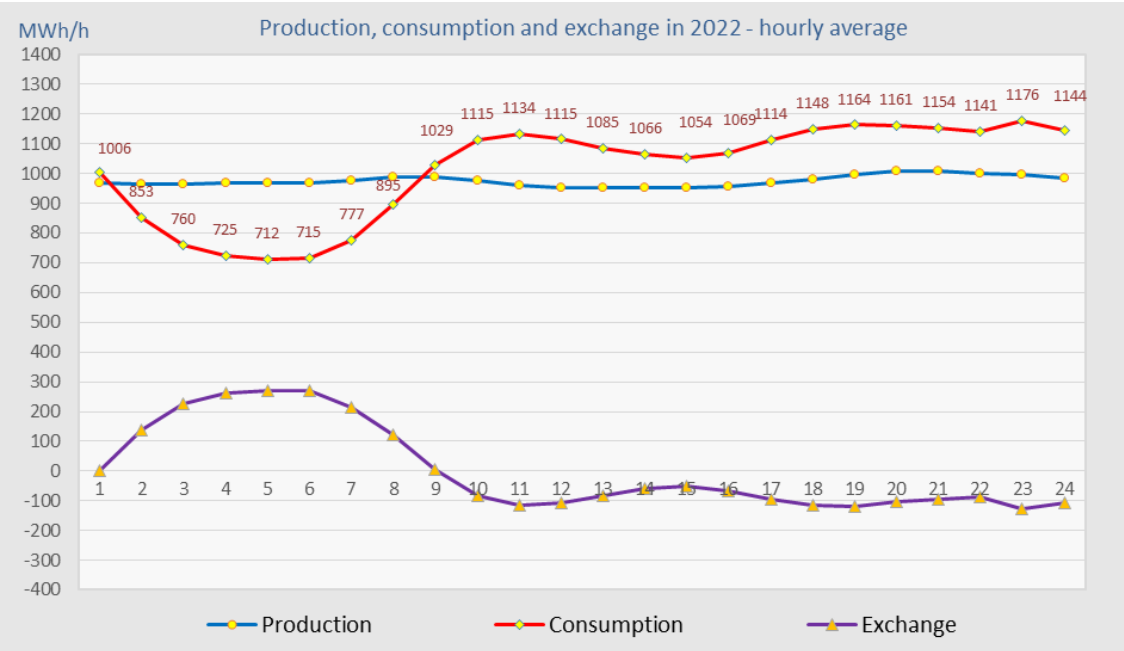


Fig. 5.9 Daily chart as annual average per hour for 2022

The difference between the monthly average of daily maximums and minimums of consumption during the months of 2022 is shown in the diagram below.

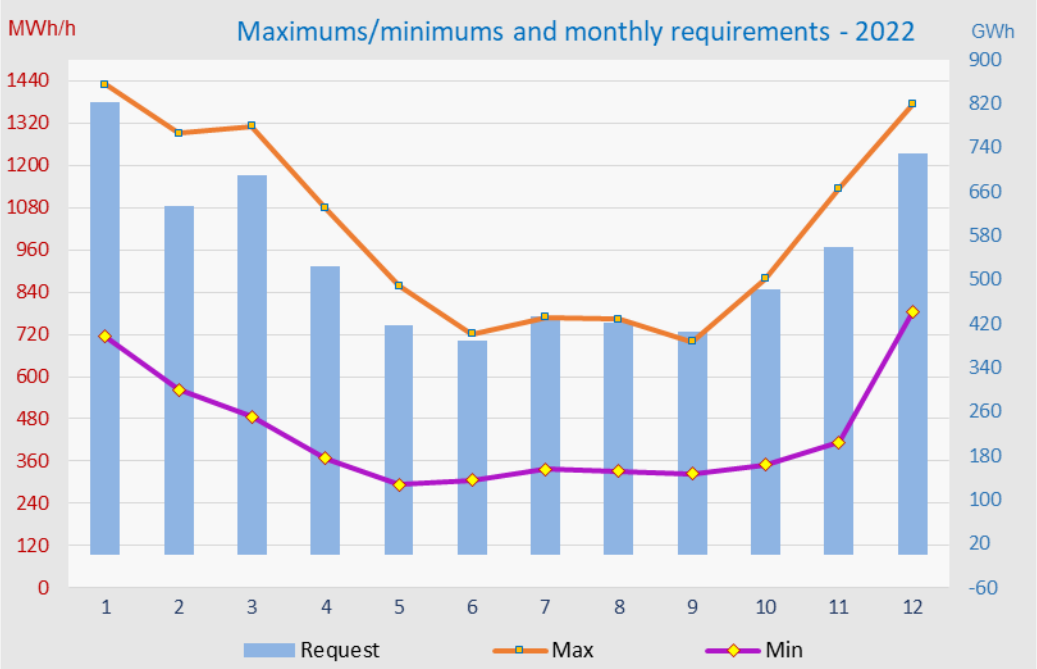


Fig. 5.10 Monthly average demand and daily maximum/minimum loads 2022

Reductions as a result of the lack of electricity

Based on the reports of the operators, electricity reductions were reported during 2022 as a result of the lack of electricity in the amount of 21,553 MWh.

It should be noted that at the end of 2018, the Board of ERO issued the decision to stop reductions due to lack of energy, except in cases where plants are endangered.

As can be seen from the diagram below, despite the efforts to eliminate the reduction of supply due to the lack of electricity, reductions have been realized (made) over the years. In recent years, the reductions have been significantly reduced and in some years they have been completely eliminated, except for the last year where reductions were reported due to the emergency energy situation.

The figure below shows the reductions due to lack of electricity over the years.

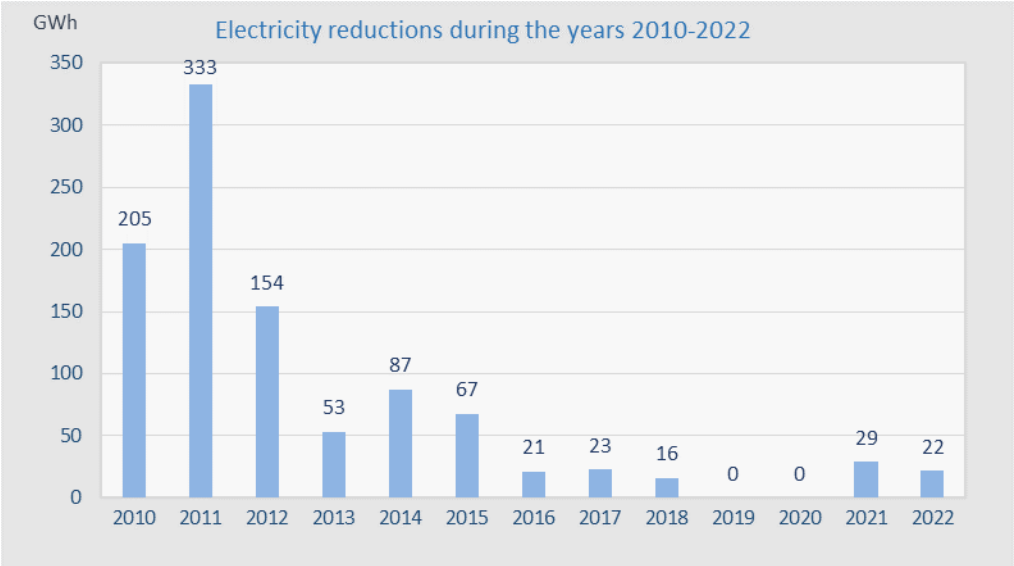


Fig. 5.11 Reductions in consumption during the years 2011 - 2022

5.4.4 Demand for electricity and losses in the transmission network

The overall national demand for electricity in 2022 was 6,547 GWh and represents a decrease of 4.9% compared to 2021, when it was 6,885 GWh, while compared to the forecast in the energy balance for 2022, the demand is 8.36% lower.

The overall demand and transmission losses made in 2022 and compared with the 2022 energy balance is presented in the table 6.13.

Tab. 5.13 General demand and losses in the transmission network in 2022

2022	Gross demand - realization	Gross demand - balance	Ratio real./bal.	Transmission losses - realization		Transmission losses - balance	
	MWh	MWh	%	MWh	%	MWh	%
January	816 880	813 523	100,41	15 396	1,88	16 372	2,01
February	630 636	655 411	96,22	11 194	1,77	13 706	2,09
March	685 772	708 682	96,77	12 819	1,87	13 551	1,91
April	541 521	608 926	88,93	8 255	1,52	11 286	1,85
May	433 860	477 431	90,87	6 297	1,45	7 596	1,59
June	395 143	437 158	90,39	7 333	1,86	7 999	1,83
July	436 067	468 303	93,12	8 490	1,95	8 273	1,77
August	418 634	480 154	87,19	9 116	2,18	8 491	1,77
September	405 624	434 704	93,31	8 161	2,01	9 048	2,08
October	480 225	589 272	81,49	7 578	1,58	11 532	1,96
November	561 036	640 733	87,56	9 569	1,71	13 405	2,09
December	741 922	830 314	89,35	14 046	1,89	15 402	1,85
Total	6 547 320	7 144 611	91,64	118 253	1,81	136 661	1,91

From 2011, there is a stabilization of the demand for electricity, with small fluctuations from year to year, and in the last year, a small decrease can be observed, which can be seen in the figure below.

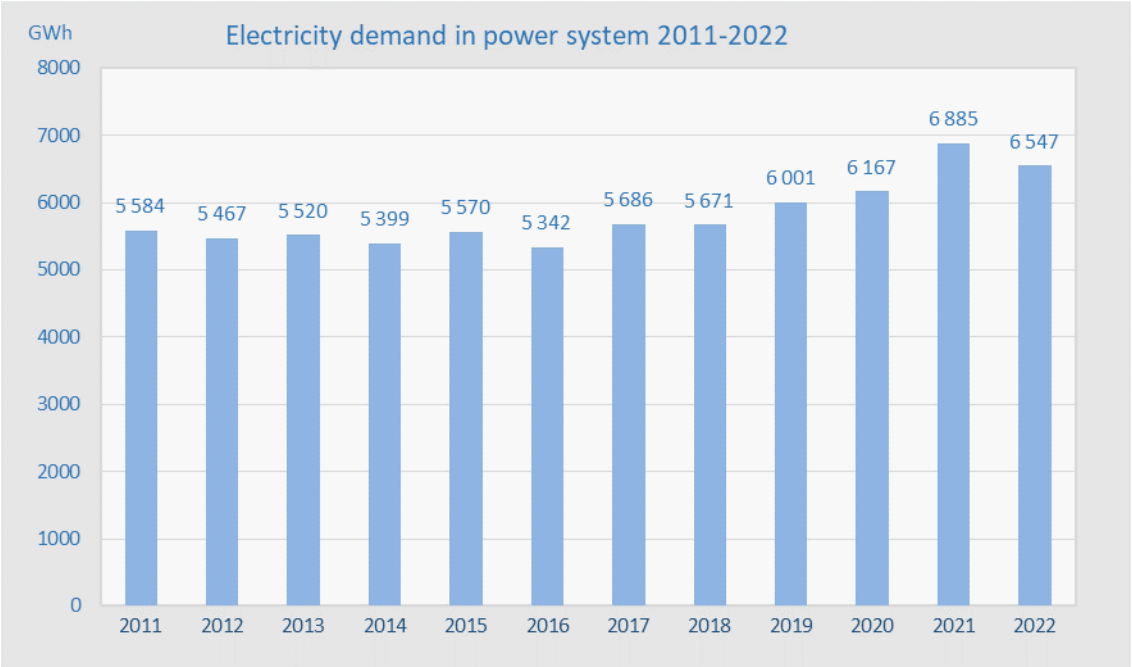


Fig. 5.12 Overall demand in the power system 2011-2022

The total electricity demand is divided into the consumption of customers connected to the transmission network, consumption in the distribution system (including losses), own-source consumption for the needs of production facilities, as well as transmission losses, and this is presented in the following table divided by categories for 2022.

Tab. 5.14 Demand by categories and energy losses

Electricity demand 2022	Total MWh
Gross consumption in distribution*	6 196 349
Unregulated consumers	131 535
KEK's internal consumption	101 182
Transmission losses	118 253
Overall demand	**6 547 320**
KEK's own expenditures from transmission	120 356

(*)Electricity received in distribution from transmission + production in distribution

Electricity that is received from the transmission network for own consumption for the needs of production plants in 2022 was 120 GWh, of which 96 GWh for the generators of TC (PP) Kosova A and 24 GWh for TC (PP) Kosova B.

The demand for electricity varies according to the period of consumption but also according to the categories of customers, and this is presented in tabular form below, where the losses in the transmission and distribution network (technical and commercial losses) are also included)

Tab. 5.15 Participation of different categories in the general demand 2022

2022/GWh	Total	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Household consumption	3 121	395,1	342,2	332,6	258,4	209,0	173,0	200,0	204,3	177,4	226,4	248,6	354,2
Commercial consumptior	1 194	142,0	78,9	107,6	91,0	85,9	89,4	99,8	102,1	83,2	91,9	100,8	121,6
Industrial consumption	610	44,6	40,7	49,9	46,3	58,2	56,6	58,6	49,5	46,9	50,0	51,7	56,9
Commercial losses	646	87,9	65,5	83,9	69,5	28,7	26,2	22,2	17,0	43,2	44,4	76,7	80,5
Technical losses	757	121,1	83,4	90,0	60,8	39,0	36,3	39,4	28,7	38,2	50,6	64,3	105,0
Transmission losses	118	15,4	11,2	12,8	8,3	6,3	7,3	8,5	9,1	8,2	7,6	9,6	14,0
KEK's int. cons.	101	10,7	8,8	9,0	7,3	6,7	6,3	7,6	7,9	8,6	9,4	9,2	9,6
Total	**6 547**	**816,9**	**630,6**	**685,8**	**541,5**	**433,9**	**395,1**	**436,1**	**418,6**	**405,6**	**480,2**	**561,0**	**741,9**

The demand for electricity, presented in table 6.15, varies by month, and in some categories this variation is quite pronounced, 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 thanks 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.

Losses in percentage in the transmission network to the overall demand of the energy system of Kosovo are presented in the figure below.

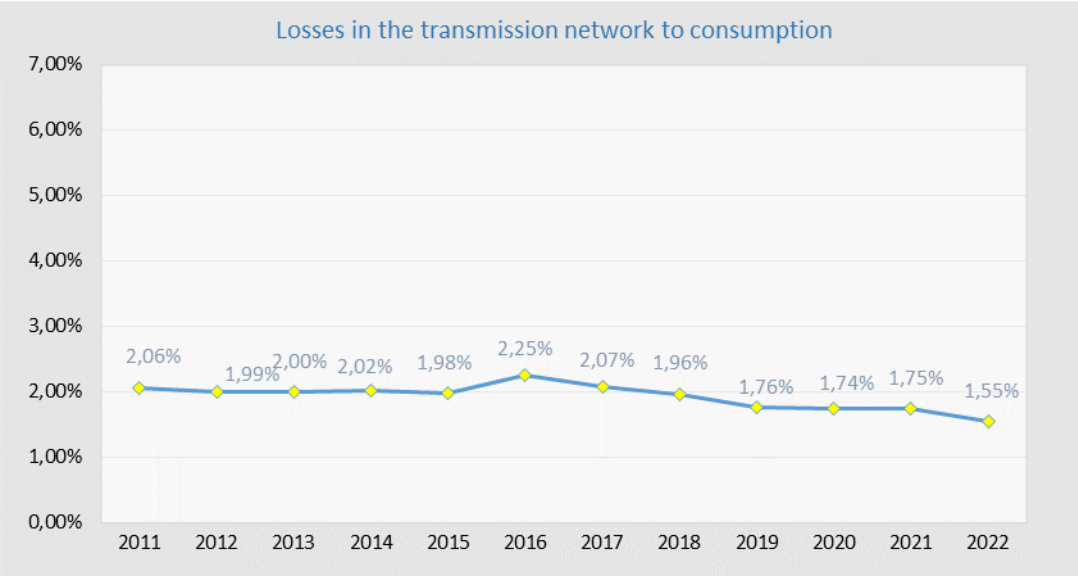


Fig. 5.13 Percentage losses in the transmission network 2011-2022

The losses presented in the figure above are the percentage losses calculated against local demand, while the level of transmission losses affects the entire energy input into the transmission system. So for the calculation of the percentage of losses to the load of the transmission network, in addition to the local demand, other flows such as transit as well as electricity for the generators' own consumption, etc. should be included. The percentage of transmission losses calculated in this way is 1.25%.

5.5 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 generators connected to the distribution system.

The distribution network consists of voltage lines of 35 kV, 10(20) kV, 6 kV and 0.4 kV, as well as the corresponding substations of the level 35/x kV, 10(20)/0.4 kV and 6/0.4 kV.

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

Tab. 5.16 Substations and transformers according to voltage level in DSO

Transformation (kV/kV)	Owner	No. of SS	No. of TR	Installed power (MVA)
35/10	KEDS	44	94	662
35/10	Private	11	15	68
35/20	KEDS	2	5	41
35/6 kV	Private	5	12	43
35/0.4kV	Private	19	28	25
10(20)/0.4	KEDS	2 551	2 646	1 355
10(20)/0.4	Private	3 078	3 095	1 567
10/20	KEDS	1	1	109
10/0.4	KEDS	2 893	2 893	909
10/0.4	Private	1 247	1 253	606
6(3)/0.4	KEDS	66	66	13
6/0.4	Private	1	1	1
Total		9 918	10 109	5 399

Tab. 5.17 Power Lines in DSO

Voltage (kV)	Owner	Arial network (km)	Cable network (km)	Total (km)
35 kV	KEDS	484	138	622
10(20) kV	KEDS	1 632	546	2 178
10 kV	KEDS	4 165	904	5 069
6 kV	KEDS	42	8	50
3 kV	KEDS	4	1	5
0.4 kV	KEDS	17 915	2 659	20 574
Total		24 243	4 256	28 499

The scheme below presents basic information on the number of substations (NS), transformers (TR) and transforming power (MVA), the length of the power lines, as well as the power stations connected to the corresponding voltage level.

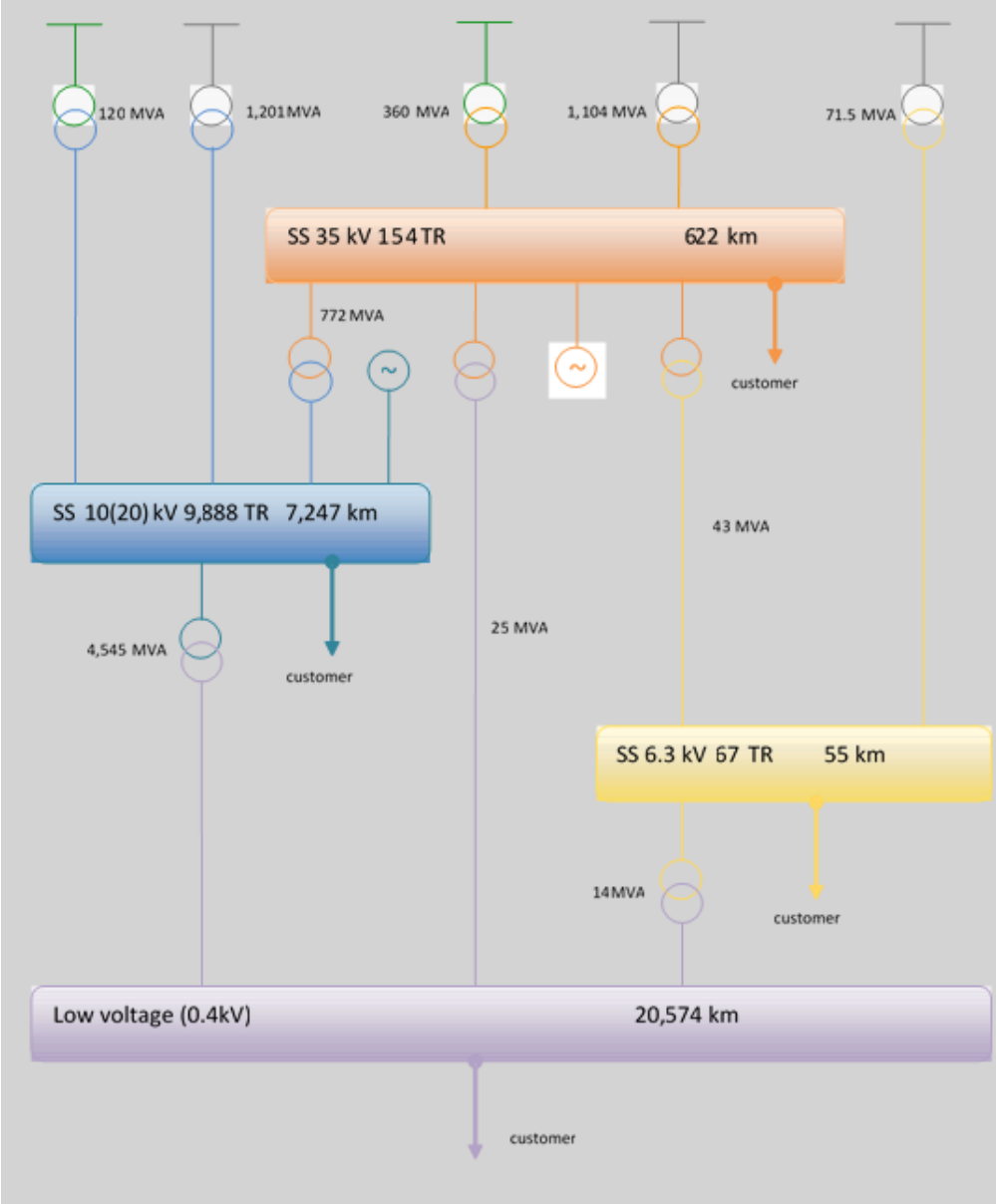


Fig. 5.14 Basic data of the distribution system

5.5.1 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 the capacity of the existing network. 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, PLC smart meters, etc.

The projects have been selected by analysing technical criteria such as: losses, network load, voltage drops, number of interruptions, electricity demand, increased consumption, age of the network and the number of customers.

The projects have been selected by analysing the need for investments in the most critical areas, evaluating them through priority criteria to achieve the main investment objectives, such as:

- Reduction of technical and non-technical losses,
- Reliable and better quality electricity supply,
- Increasing existing network capacities and modernizing the network.

Investments made during 2022 by the Department of Investments

Conversion of outputs to the 20 kV voltage level

KEDS has continued with the process of implementing investments in transitioning the 10kV outputs to operation at the 20kV voltage level.

Investments at level 10 [kV]

Prishtina District, Graçanica 1, Graçanica 2 & Hajvalia outputs: The investment in these outputs has provided quality and reliable supply to customers, from which a total of 3,962 customers have benefited.
Ferizaj District, Q.M.I and Industrial Zone outputs: 338 customers will benefit from this project. The implementation of these projects will continue during 2022.

Pejë District, Gllareva output: The investment in this output has managed to enable the customers of this area to increase the safety, reliability and technical quality of the distribution network. A total of 1,040 customers benefited from this project.

Vitomirica output: During 2022, the situation of the customers in question has been taken into account, so the construction of two new segments, exactly with a length of 4.78 [km] has managed to provide a new energy infrastructure, reducing the number of breakdowns, losses and voltage drop problems. About 2,030 customers have benefited from this investment.

Barani output: With this project, investments are being made in the entire output where 2,385 customers will benefit. The implementation of which project will continue even after this year.

Rugova output: With this project, investments are being made in the entire output where 993 residents will benefit. The implementation of which project will continue even after this year.

In Barani and Rugova outputs, investment is being made entirely at the 10 [kV] level, replacing all power lines, alcoves and unsuitable transformers for operation at 20 [kV], in order to prepare them for conversion to 20 [kV] after the completion of projects.

Gjakova District, Outputs supplied by SS Gjakova I 35/10 kV and Outputs supplied by SS Gjakova 2 110/10(20) kV: Cermjan, Dobrosh, Skivjan, Bec, Ura e Terzive (Bridge of Terzive), Ponoshec and Bistazhin are supplied by SS Gjakova I and SS Gjakova 2.

The Ereniku and Piskota outputs have been added to the list of investments due to the combination of existing outputs into new outputs. 13,161 customers benefit from these projects, the implementation of these projects will continue even after this year.

Outputs supplied by SS Malisheva 35/10 kV: Carralluka, Mirusha, Bellanica and Kijeva are supplied by SS 35/10 kV Malisheva, where 7,636 customers will benefit from these projects and the implementation will continue even after this year.

In the outputs supplied by SS Gjakova I (Skivjani, Beci, Cermjani, Dobroshi, Ponosheci, Piskota, Ereniku), the outputs supplied by SS Gjakova 2 (Ura Terezive and Bistazhini) and the outputs from SS Malisheva (Caralluka, Mirusha, Bellanica and Kijeva)) is being fully invested in the 10 [kV] level, replacing all power lines, alcoves and unsuitable transformers for operation at 20 [kV], in order to prepare them for conversion to 20 [kV] after the completion of the projects.

Mitrovica District, Outputs supplied by SS Skenderaj 110/10 kV: Qirezi, Likovci, Turiqevci and Llausha, where 5,877 customers will benefit from these investments and the implementation of these projects will continue even after this year.

City and villages Output: It will be fully invested in the output where 2,739 customers will benefit and the implementation will continue even after this year.

In the outputs supplied by SS Skenderaji (Qirezi, Likovci, Turiqevci and Llausha) and the City and Villages output, investment is being made entirely at the 10 [kV] level, replacing all power lines, alcoves and unsuitable transformers for operation at 20 [kV], in order to prepare them for conversion to 20 [kV] after the completion of the projects.

Investments in the low voltage network

Throughout the KEDS network, there are parts of the network that require investment due to their outdated condition. In order to invest in the most critical areas, the analysis was done taking into account the criteria of priorities for the selection of projects.

The identification of the most urgent projects was done by analyzing technical criteria such as:

- Network load (Electrical lines and substations)
- Number of breaks
- Voltage drops
- Network obsolescence
- Number of customers
- Electricity losses

Investments made in low voltage projects include:

- New transformers in areas that need investment
- Replacement of existing transformers with new ones; for increasing capacity
- Rehabilitation of the low voltage network
- Reinforcement of the medium voltage network within the scope of TU projects, in accordance with the future plans of TM outputs
- Expansion of the TM network for the connection of new transformers
- Installation of MMOs, which means moving the electrical meters out onto the pole or into ground cabinets of electrical meters
- Connecting customer in the electrical meters located outside the houses

Prishtina District - In 2022, within the framework of low voltage projects, projects have been implemented in the region of Drenas, Obiliq, Podujeva and Pristina. These projects include strengthening and expanding the network.

Prizren District - In 2022, within the framework of low voltage projects, projects have been implemented in the Suhareka region. These projects include only network reinforcement projects.

Peja District - In 2022, within the framework of low voltage projects, projects have been implemented in the Deçan region. These projects only involve network reinforcement.

Gjakova District - In 2022, within the framework of low voltage projects, projects were implemented in the region of Gjakova and Malisheva. These projects include strengthening and expanding the network.

Mitrovica District In 2022, within the framework of low voltage projects, projects have been implemented in the region of Vushtrri, Skenderaj and Mitrovica. These projects include strengthening and expanding the network

New connections Within the framework of low voltage projects, projects of the type New connections have also been implemented. These projects have been invested in the whole of Kosovo.

In conclusion, for all investments in 2022 for the TM and TU network, the following materials have been spent:

Tab. 5.18 Amounts of material used in 2022

Type of material	Quantity	Unit
Transformers	195	piece
Pillars	10 111	piece
Meter boxex	3 945	piece
LV Panel	77	piece
Kiosks	7	piece
Alcoves	80	piece
Cables	506 270	m
Conductors	239 450	m
Manhole covers	812	piece
Pipe	26 780	piece

Investments made throughout 2022 by the Department of System Operation

Projects and works carried out during 2022 by the Department of System Operation

The investment projects of 2022 are presented in two parts, as projects at the level of medium voltage 10(20) [kV] and projects at the level of low voltage at 0.4 [kV]. The classification of these projects is made by the nature of the work of the project, the 10 [kV] projects include:

1. Relocations and the new network in the medium voltage network;
2. Establishing new power lines;
3. Investments in distribution facilities for easier operation, etc.

The 0.4 [kV] projects include:

4. Reconstruction of the low voltage network;

5. Relocation and installation of SS 10/0.4 [kV];
6. Implementation of PLC smart meters, etc.

The first part of 2022 is characterized by investments in the 0.4 [kV] projects, where the reconstruction of the low voltage network and other works in these projects have been done. While the second half of the year is mainly about investments in medium voltage, where discharges of 10 [kV] outputs have been worked, the creation of new power lines, and at the end of the year intervention was also made to discharge 0.4 [kV] overloaded outputs [kV] and in switching overloaded transformers. In conclusion, we can describe it as a year with increased investment values in the medium and low voltage network.

During 2022, the Operation System Department, thanks to the implementation of the projects, has invested in projects related to the following areas:

- Network maintenance and rehabilitation
  - Replacements of TM and TU poles;
  - Cleaning the route of the TU and TM network as a preventive measure in creating conditions for the work of the power lines without being affected by external factors such as tree branches, etc.;
  - Replacement of conductors and their tightening, replacement of insulators, surge arresters, consoles and any other element, which during the preliminary inspection was destined to fail very quickly and become a source of breakdown;
  - Relocating the 10 and 0.4 kV power lines in order to maintain and repair the breakdowns as easily as possible;
  - Reinforcement of foundations of transformer poles, poles of metal construction;
  - Adjustment of transformer blinds, their metal constructions;
  - Replacement of damaged and overloaded
- Cleaning of distribution lines 10, 20 and 35 [kV]
- Replacement of overloaded Transformers
- Investments in 10 [kV] projects
  - Project: 10 [kV] overhead line Kaçaniku i vjetër (old Kaçanik)
- Relocation/Dislocation of 10 [kV] power lines
  - o Project: LP 10 [kV] Slovi
  - o Project: LP 10 [kV] SS Peshter – SS Brus 1
  - o Project: Lp 10 [kV] Peqan
  - o Project: Lp 10 [kV] Maja e Zeze (Black Peak)
- Implementation of distribution facilities
  - Project: Distribution Facility - Slovi
- Investments in projects 0.4 [kV]
- Implementation of PLC Projects
- Projects aimed at improving power flow and improving low voltage drops
  - Project: Reinforcement of the voltage in SS Kramoviku 1
  - Project: Reinforcement of the Circuit Voltage System
  - Project: Reinforcement of voltage - Sadovine e Jerlive

- Project: Reinforcement of the voltage in TSB Moteli
- Project: Reinforcement of the voltage in Baballoqi 1 and Baballoqi 2
- Project: Reinforcement of voltage in Hajvalli Village (Ulzat 1 & 2)
- Project: Wholesale market
- Project: Seed plot

- Works in load balancing in the low voltage network
  - o Project: Load balancing in Junik
  - o Project: Load balancing in Prishtina

- Realization of projects in the deployment of new Transformers
  - Project: Installation of TS in Gjakova - Smaqi 3
  - Project: Installation of TS in Radivojc
  - Project: Installation of TS in Vaganicë 2 (B. Sahiti)
  - Project: Installation of TS Gërvalla - Shabani
  - Project: Installation of TS Zhuri i Ri
  - Project: Installation of TS Bajqine Sogujevet
  - Project: Installation of TS Stagove

- Investments in the measuring point

During 2022, the following meters have been invested:

- 857 meters with direct measurement with GSM GPRS communication
- 9,178 meters with direct measurement by PLC
- 1,081 meters with semi-indirect and indirect measurement, of which 177 are new meters and 904 replaced meters;
- 5,816 mechanical meters that have been replaced with digital ones
- 25,788 meters dedicated to new connections

- Investments in the SCADA system
  - Installation of the SCADA system in the Raskova plant
  - Installation of the SCADA system at the HC Vica plant

- Integration of new changes in the SCADA system - 2022
- Implementation of the Distribution Management System (DMS)
- Replacement and installation of power transformers in substations
  - Replacement of power transformers in SS 35/10 [kV] Gjakova III
  - Replacement of power transformers in SS 35/10 [kV] Badovci
  - Replacement of the power transformer in SS 35/10 [kV] Besia
  - Replacement of the power transformer in SS 35/10 [kV] Lipjani

- Maintenance of medium voltage substations

5.5.2 Consumption and losses in distribution

Energy flows in distribution include consumption, technical and commercial losses, which are calculated by district and by month of the year.

DSO is organized in seven districts: Prishtina, Mitrovica, Peja, Gjakova, Prizren, Ferizaj and Gjilan. Based on DSO reporting, the highest consumption took place in the district of Pristina with 30.4% of the total consumption in distribution, while the lowest consumption is in the district of Gjilan with 8.6% of the total consumption.

Energy flows in distribution by district, including electricity losses, are presented in table 6.19. The data for the district of Mitrovica also includes the consumption in the northern municipalities, which is calculated in the category of commercial losses.

Tab. 5.19 Consumption and losses in distribution by district for 2022

Districts	Load in districts	Billed energy	Technical losses		Commercial losses		Total losses	
	MWh	MWh	MWh	%	MWh	%	MWh	%
Prishtina	1 886 514	1 596 424	221 763	11,76	68 327	3,62	290 090	15,38
Mitrovica	914 837	414 784	75 252	8,23	424 801	46,43	500 053	54,66
Peja	676 481	511 344	98 219	14,52	66 918	9,89	165 137	24,41
Gjakova	547 790	438 831	91 472	16,70	17 486	3,19	108 958	19,89
Prizren	768 925	644 746	105 104	13,67	19 076	2,48	124 180	16,15
Ferizaj	871 880	726 300	105 663	12,12	39 917	4,58	145 580	16,70
Gjilan	529 922	461 371	59 320	11,19	9 231	1,74	68 550	12,94
Total	6 196 349	4 793 801	756 792	12,21	645 756	10,42	1 402 548	22,64

Demand (load), billed energy as well as technical and commercial losses in distribution by month are presented in the table below.

Tab. 5.20 Consumption and losses in distribution in 2022

Months	Load	Billed energy	Technical losses		Commercial losses		Total losses	
	MWh	MWh	MWh	%	MWh	%	MWh	%
January	785 883	576 855	121 125	15,41	87 903	11,19	209 028	26,60
February	606 678	457 778	83 411	13,75	65 490	10,79	148 901	24,54
March	657 350	483 520	89 957	13,68	83 873	12,76	173 830	26,44
April	516 761	386 434	60 848	11,77	69 479	13,45	130 327	25,22
May	397 897	330 237	38 959	9,79	28 702	7,21	67 661	17,00
June	361 362	298 863	36 271	10,04	26 228	7,26	62 499	17,30
July	401 482	339 829	39 404	9,81	22 249	5,54	61 653	15,36
August	392 480	346 822	28 701	7,31	16 957	4,32	45 658	11,63
September	379 973	298 572	38 196	10,05	43 205	11,37	81 401	21,42
October	453 798	358 830	50 552	11,14	44 416	9,79	94 968	20,93
November	533 396	392 343	64 333	12,06	76 720	14,38	141 053	26,44
December	709 290	523 719	105 036	14,81	80 535	11,35	185 570	26,16
Total - realized	6 196 349	4 793 801	756 792	12,21	645 756	10,42	1 402 548	22,64
Total by balance	5 893 004	4 820 059	826 381	14,02	246 563	4,18	1 072 945	18,21

According to the data sent by DSO, the technical losses reach the value of 12.21%, where the age of the network, the length of the power lines, the quality and type of conductors and transformers, the loading of the devices, and their 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 283.4 GWh and constitute 4.57% of the total distribution demand. Unbilled energy in the four northern municipalities of Kosovo was 362 GWh or 5.85%.

Therefore, the overall non-technical losses to the general demand in distribution, including the losses in the four northern municipalities of Kosovo, in 2022 were 646 GWh, or 10.42% to the general demand in distribution.

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

The electricity demand at the level of the Distribution System Operator in 2022 was realized at the value of 6,196 GWh, while in 2021 it was 6,260 GWh, which represents a decrease of approximately 1.01%.

The demand in the distribution system is constantly increasing, whereas the last year it suffered a decrease due to the impact of the change in the tariff structure, the establishment of the tariff block, as well as higher average temperatures compared to last year, mainly during the winter season. The demand data in the distribution system from 2011 to 2022 are presented in the following figure.

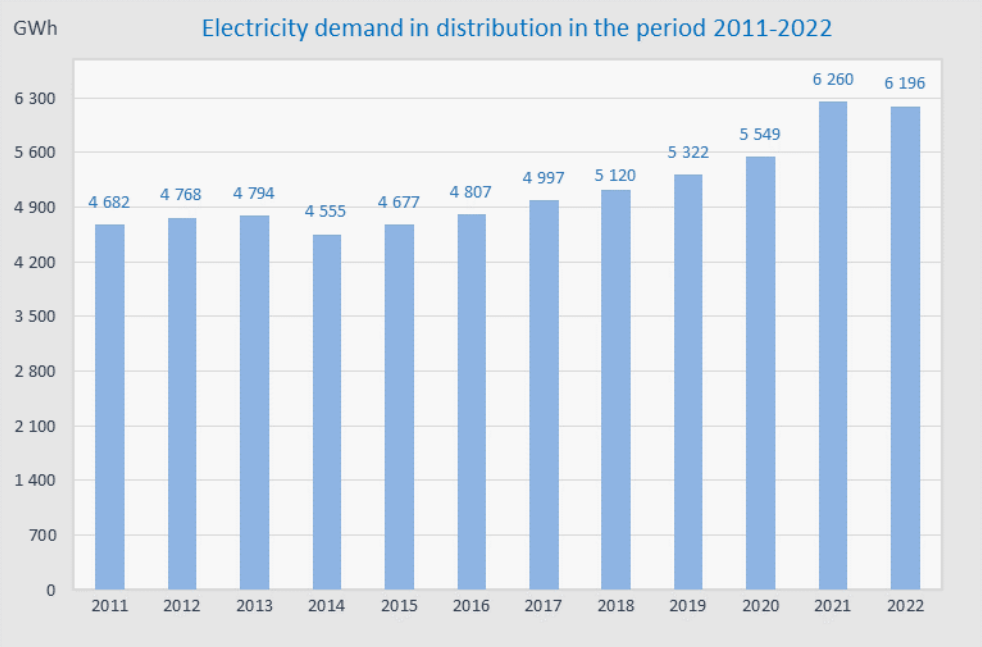


Fig. 5.15 Demand for electricity in the distribution system 2011-2022

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

The cost of electricity losses up to the level determined by the Regulator is covered by the customer tariff. The operator of the distribution system makes continuous efforts to reduce distribution losses,

but despite the reduction of losses over the years, DSO has not been able to meet the goals set by the Regulator, which means that the cost of the exceeded part of these goals is borne by DSO itself.

The chart with data on technical and commercial losses and total distribution losses from 2011 to 2022, where the trend of reducing losses but also fluctuations in the level of technical and commercial losses can be seen, is presented below.

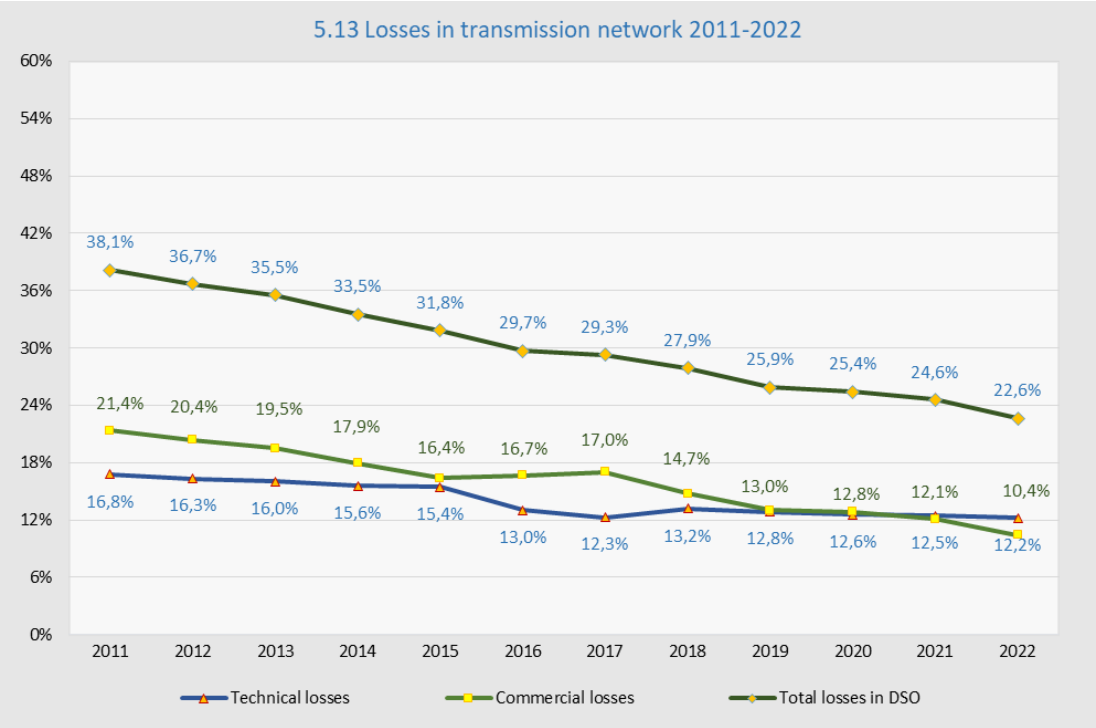


Fig. 5.16 Technical and commercial losses in distribution for the period 2011-2022

In general, the losses of electricity in DSO, including the losses (consumption) in the four northern municipalities of Kosovo, have decreased from 24.6% as they were in 2021 to 22.6% against the distribution demand.

5.6 Electricity supply

The supply of electricity to final customers during 2022 has continued to be carried out by KESCO, which is a supplier with a universal service obligation, which has supplied customers with regulated prices as well as mainly customers with unregulated prices for which a separate account has been kept.

The participation of family customers in the total billed consumption still remains dominant with about 63.27%, followed by commercial consumption with 23.59%, then by industrial consumption with 12.38%, and finally by consumption in public lighting with 0.76%. Compared to the previous year, gross demand decreased by 4.91%, consumption by family customers decreased by 0.47%, consumption by commercial customers increased by 4.77%, and industrial consumption decreased by 27.6%.

The percentage participation of the consumption categories compared to the total consumption (presented with loss and without loss), is presented in the figure below.

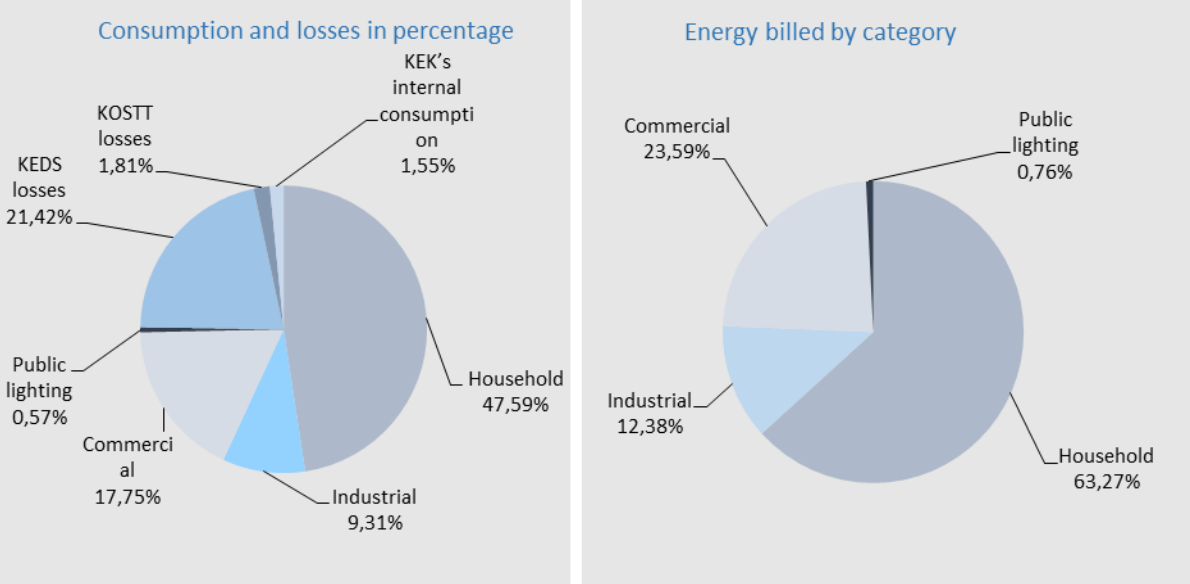


Fig. 5.17 Participation of consumption categories - with and without loss 2022

5.6.1 Billing and Collection

The energy billed in the distribution system in 2022 was 4,793 GWh and represents about 77.4% against the load of the distribution system, which compared to 2020 is higher by 1.53%.

The table below presents the billing, collection for energy and gross distribution collection as well as the ratio between billing and collection for energy by months for 2022, where it can be seen that in some months this ratio is higher than the 100% value, which means that in these months the electricity billed for the previous months has been collected.

Tab. 5.21 Billing and collection by months in distribution for 2022

Distribution 2021	Load	Realization	Billing	Energy collection	Gross receipts	Coll/Bill
	MWh	MWh	€	€	€	%
January	785 883	576 855	38 105 121	31 020 715	1	81,4%
February	606 678	457 778	32 497 101	29 401 561	1	90,5%
March	657 350	483 520	37 640 122	33 109 280	1	88,0%
April	516 761	386 434	29 864 065	32 756 775	1	109,7%
May	397 897	330 237	25 842 028	26 039 380	1	100,8%
June	361 362	298 863	23 058 087	23 413 129	1	101,5%
July	401 482	339 829	25 802 690	22 987 228	1	89,1%
August	392 480	346 822	26 361 482	26 109 694	1	99,0%
September	379 973	298 572	15 149 940	24 370 791	1	160,9%
October	453 798	358 830	26 729 592	23 282 555	1	87,1%
November	533 396	392 343	29 844 314	25 156 390	1	84,3%
December	709 290	523 719	40 277 193	34 685 923	1	86,1%
Total	6 196 349	4 793 801	351 171 736	332 333 420	1	94,64%

The electricity billed and paid-collected (gross) in distribution as well as the ratio between billing and gross collection from 2011 to 2022 is presented in the figure below.

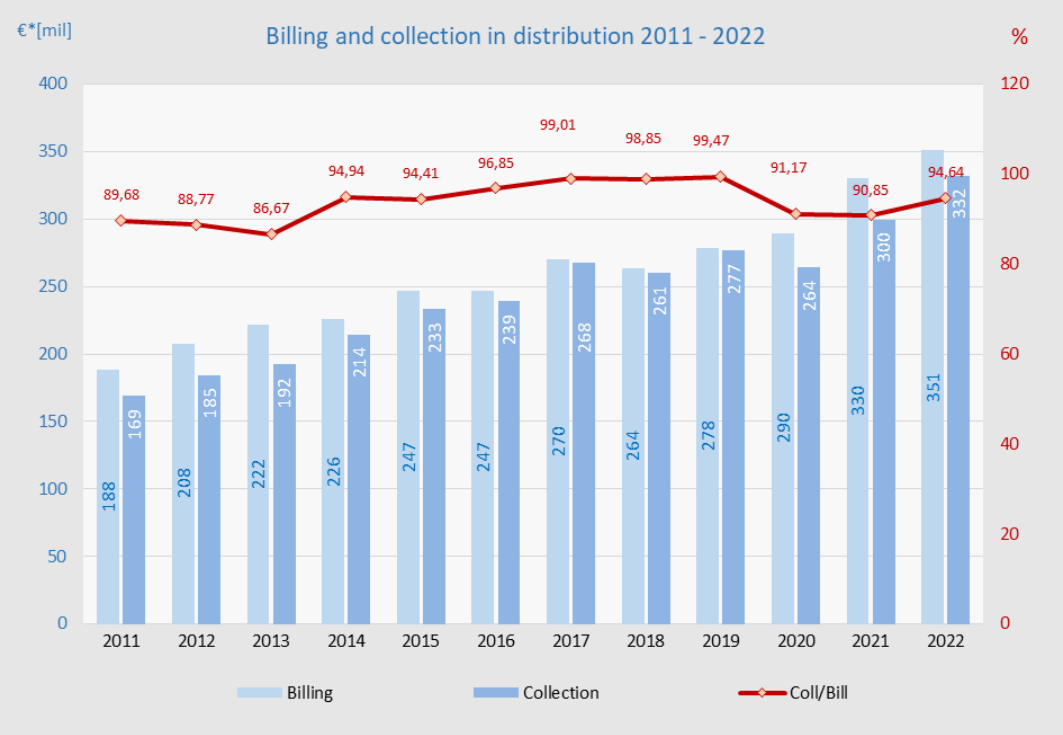


Fig. 5.18. Billing and collection in distribution during the years 2011-2022

The collection level only for electricity in distribution for 2022 was 94.64%, which is 3.79 percentage points higher than last year, while when customers connected to the transmission network are also counted, then the total collection reaches 94.93%.

Consumption categorized by voltage level and customer groups that use electricity for 2022 is given in the table below.

Tab. 5.22 Electricity billed according to the 2022 tariff categories

Categories (GWh)	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
220 kV (Ferronikeli)	47,1	0,8	0,7	0,8	1,1	14,9	13,7	11,1	0,8	0,7	0,8	0,9	0,9
110 kV (Trepça)	23,2	2,1	2,1	2,2	2,2	1,8	1,8	1,7	1,7	1,8	1,9	1,9	2,0
110 kV (Sharrcem)	61,2	2,0	1,1	3,7	5,9	6,2	4,6	5,7	6,6	6,4	6,8	6,1	6,0
35 kV	55,9	3,9	4,1	5,1	4,4	4,6	4,9	5,0	5,0	4,6	4,7	4,7	4,9
10 kV	422,4	35,8	32,6	38,2	32,7	30,7	31,6	35,0	35,3	33,4	35,8	38,2	43,0
Household	3 116,2	419,9	317,6	327,4	258,4	209,0	173,0	200,0	204,3	177,4	226,4	248,6	354,2
0.4 kV I	434,9	39,5	35,0	39,9	33,4	32,0	34,4	37,7	36,6	32,5	34,3	36,7	42,9
0.4 kV II	727,0	74,0	65,3	69,7	54,7	51,3	52,6	59,7	62,7	47,7	54,1	60,5	74,9
Public lighting	37,6	3,8	3,2	3,3	2,9	2,7	2,5	2,4	2,8	3,0	3,6	3,6	3,8
Total billed	4 925,3	581,7	461,7	490,2	395,6	353,2	319,0	358,4	356,0	307,4	368,3	401,2	532,7
KEK consumption	101,2	10,7	8,8	9,0	7,3	6,7	6,3	7,6	7,9	8,6	9,4	9,2	9,6
DSO losses	1 402,5	209,0	148,9	173,8	130,3	67,7	62,5	61,7	45,7	81,4	95,0	141,1	185,6
KOSTT losses	118,3	15,4	11,2	12,8	8,3	6,3	7,3	8,5	9,1	8,2	7,6	9,6	14,0
Total	**6 547,3**	**816,9**	**630,6**	**685,8**	**541,5**	**433,9**	**395,1**	**436,1**	**418,6**	**405,6**	**480,2**	**561,0**	**741,9**

The electricity billed in the transmission system and in the distribution system in 2022 was 4,925 GWh, which expressed in monetary value (including VAT) is €371.24 million, while the gross collection is €352.40 million.

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

Tab. 5.23 Billing and collection in 2022

2022	Load	Realization	Billing	Gross collection	Coll/Bill
	MWh	MWh	€	€	%
Regulated consumers	6 196 349	4 793 801	351 171 736	332 333 420	94,64%
Unregulated consumers	131 535	131 535	20 066 906	20 066 906	100,00%
Total	6 327 884	4 925 336	371 238 642	352 400 326	94,93%

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 the customers are connected and the use of electricity at different tariffs according to the season and time in which the energy is used. This average selling price (without VAT) is shown in the figure below. The average selling price also varies by districts depending on the concentration of commercial/industrial activities that use electricity in certain periods.

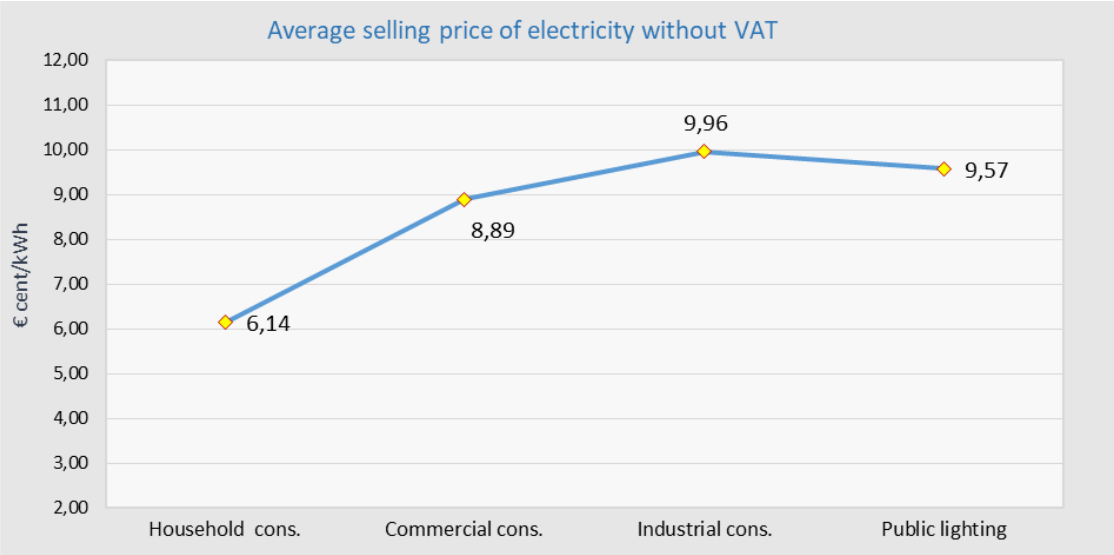


Fig. 5.19 Average selling price of electricity 2022 (without VAT)

For the category of family customers, the average price of electricity is 6.14 €cent/kWh, which is slightly higher than in 2021 when it was 5.60 €cent/kWh, while for non-family customers, the average price of electricity is 9.27 €cent/kWh which is slightly higher than the average price in 2021 when it was 8.39 €cent/kWh.

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

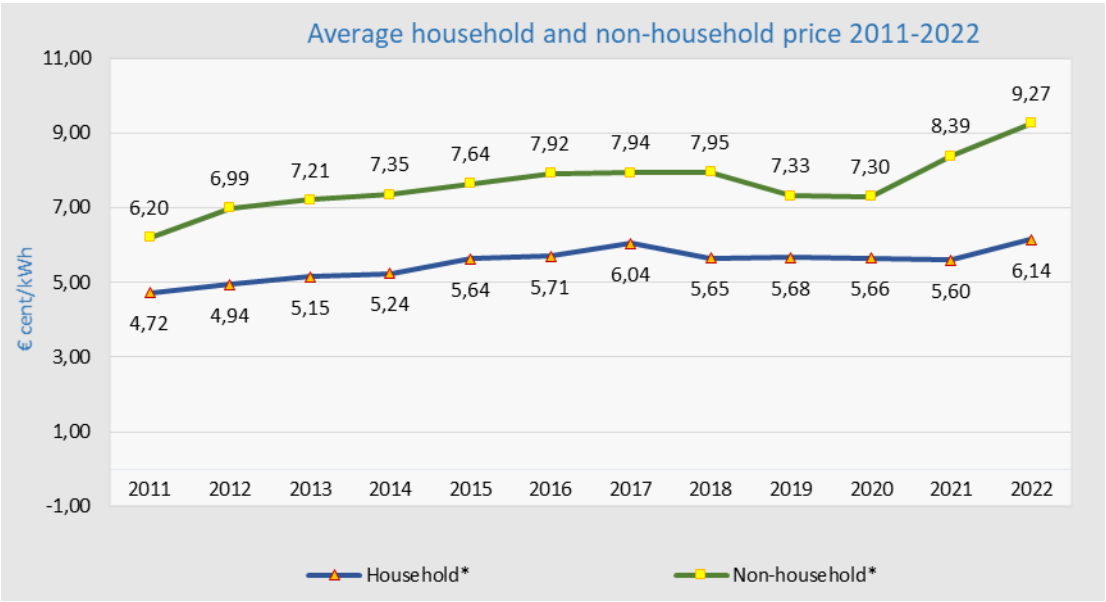
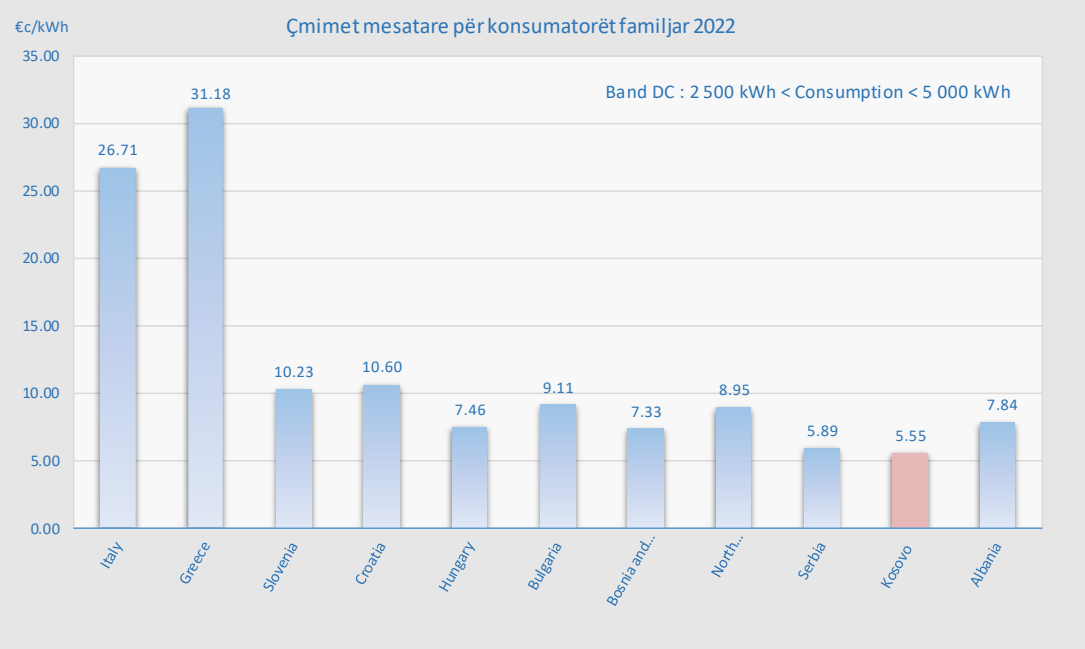


Fig. 5.20 The average selling price of electricity (without VAT) over the years

Compared to the countries of the region and based on the data released by Eurostat for the first half of 2022, Kosovo has the lowest average price without VAT for household customers. Eurostat data categorized according to household consumption 2500-5000 kWh/year, for the first six months of 2022 for some countries, since the data for the second six months are still missing, are presented in the figure below.



**Source of data from EUROSTAT*

Fig. 5.21 Average prices for household customers for the first 6 months of 2022 (without VAT)

5.7 Import and export of electricity

In general, most of the overall demand for electricity in Kosovo's electric power system is covered by local generation dominated by power plants, while the rest is provided by import, which is carried out through cross-border power lines.

The participation of import against the overall demand for electricity was 11.63%, marking a decrease of about 7.41 percentage points in relation to the previous year, which was about 19.04%.

Through the interconnecting power lines from the regional system to the electricity system of Kosovo, 3,376,161 MWh have entered, while 3,130,739 MWh have gone out, where -245,422 MWh represents the difference between input and output, which is divided into net import and deviations to the regional system.

Electricity flows in interconnecting power lines with neighbouring countries are presented in the table below.

Tab. 5.24 Electricity flows in interconnecting power lines for 2022

Flow in interconnecting lines MWh	400 kV		220 kV		110 kV		Total	
	Receipt	Dispatch	Receipt	Dispatch	Receipt	Dispatch	Receipt	Dispatch
Albania	113 253	1 008 190	514 989	87 519			628 242	1 095 708
Macedonia	769 744	449 750					769 744	449 750
Montenegro	279 056	1 154 899					279 056	1 154 899
Serbia	1 582 429	113 193	82 741	169 163	33 950	148 026	1 699 120	430 382
Total	2 744 481	2 726 031	597 729	256 682	33 950	148 026	3 376 161	3 130 739
Balance	-18 451		-341 047		114 076		-245 422	

The import realized for 2022 was 761,245 MWh, with which electricity shortages were met, especially during the peak time in the winter season when the demand was unaffordable for local production.

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

The import of electricity for 2022 was 550,216 MWh lower than in 2021, which was 1,311,461 MWh.

The average price of electricity import with commercial contracts during 2022 was €268.82/MWh, and compared to last year which was €119.29/MWh, this year the average import price is higher for €149.53/MWh.

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

Tab. 5.25 Import and export of electricity for 2022

Import/Export MWh	Import with contracts	Import as exchange	Total import	Export with contracts	Export as exchange	Total export	Net Imp/Exp
January	263,357	4,080	267,437	4,564	838	5,402	-262,035
February	83,869	0	83,869	18,825	5,350	24,175	-59,694
March	48,790	194	48,984	38,723	13,453	52,176	3,192
April	18,800	10,777	29,577	75,043	12,945	87,988	58,411
May	15,814	8,799	24,613	109,305	15,853	125,158	100,545
June	12,815	0	12,815	98,782	67,585	166,367	153,552
July	29,874	4,329	34,203	18,968	53,946	72,914	38,711
August	25,518	7,152	32,670	14,657	36,648	51,305	18,635
September	9,856	6,285	16,141	62,577	17,069	79,646	63,505
October	42,997	2,968	45,965	50,836	0	50,836	4,871
November	50,304	3,328	53,632	53,608	0	53,608	-24
December	73,944	37,395	111,339	17,110	141	17,251	-94,088
Total	675,938	85,307	761,245	562,998	223,828	786,826	25,581

The average price of electricity export with commercial contracts during 2022 was €207.36/MWh. In addition to the export with contracts, a quantity of electricity was also exported as an exchange (electricity for electricity) between KEK and KESH, the total export of electricity for 2022 was 786,826 MWh.

As can be seen from the data presented above, in 2022 Kosovo was a net exporter of electricity in the amount of 25,581 MWh, presented by months in the figure below.

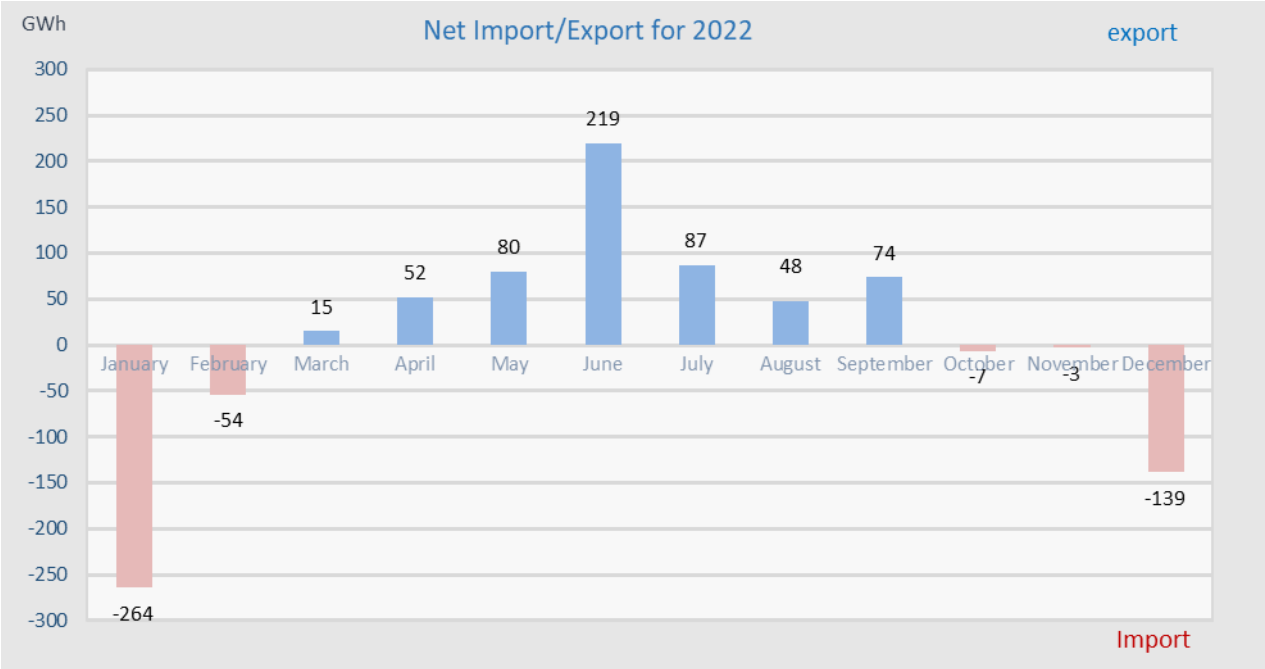


Fig. 5.22 Import and export of electricity in 2022

Surpluses of electricity are mainly at night hours (at the time of the low tariff), when there are also surpluses in the regional systems, which affects the export prices to be significantly lower than the import prices.

The price of import and export of electricity during the years 2011 - 2022 has marked rise and fall. The figure below shows the import and export prices from 2011 to 2022.

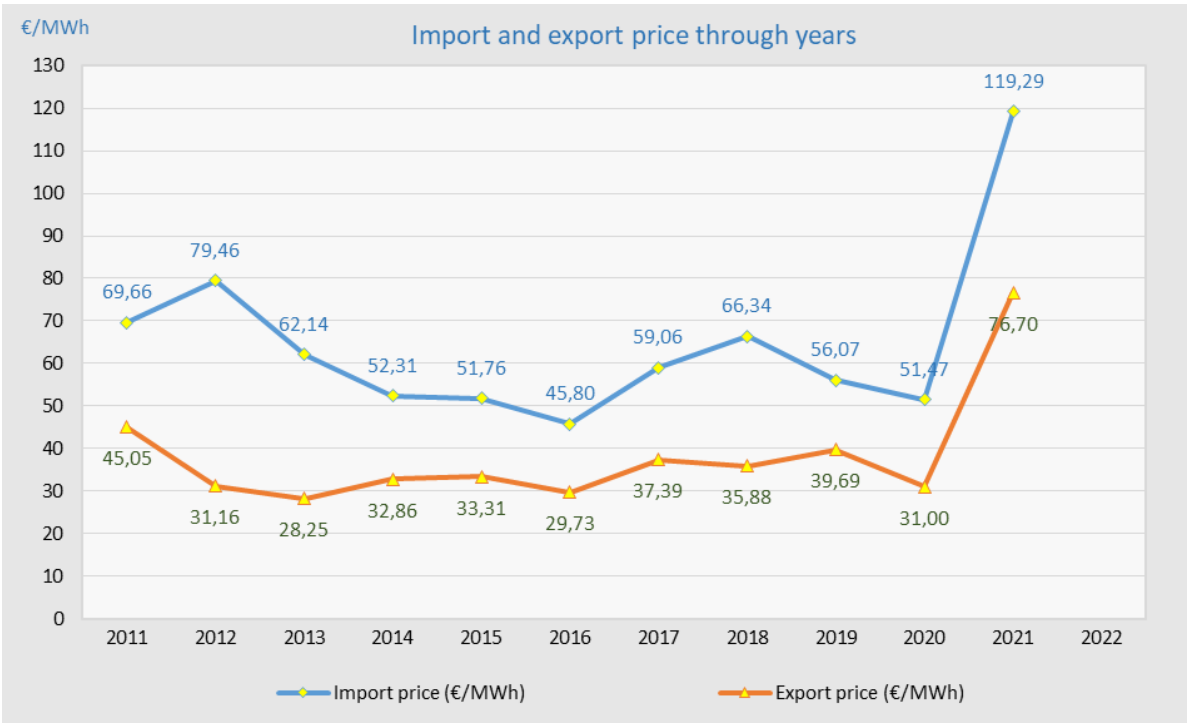


Fig. 5.23 The average price of import and export over the years

5.8 Quality standards of electricity supply and service

The quality standards of electricity supply and service are regulated in the Rule for the Quality Standards of Electricity Service, which rule the ERO Board approved on 06.05.2019. The purpose of the Rule is to determine the indicators of the quality of electricity service for customers, related to the services provided, the uninterrupted supply of electricity and the quality of the voltage.

The electricity supply services which are included in the rule are as follows:

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

In the Rule for Electricity Service Quality Standards, individual and general indicators (indicators) of electricity service quality, uninterrupted supply indicators, as well as voltage quality indicators are presented.

It should be emphasized that the quality standards of electricity supply and service are an important element of the regulation of the energy sector. These standards are defined so that the quality of electricity supply and service, as well as the quality of voltage to customers, is constantly improved by the energy company.

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

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

5.8.1 Continuity of supply

The continuity of supply is related to the availability of the power system, namely represents the number and duration of interruptions for each customer within a year.

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

Continuity of supply is measured by indices:

- SAIDI - The average index of the duration of outages in the system;
- SAIFI - Average frequency index of outages in the system;
- ENS - Unsupplied electricity; and
- AIT - Average outage Time.

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

5.8.1.1 Measurement indices reported by TSO

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

- Average duration of outages (AIT - Average Interruption Time);
- Unsupplied electricity (ENS – Electricity that has not been supplied).

The average duration of outages (AIT - average interruption time) in the transmission network represents the cumulative duration of interruptions of electricity supply per customer.

Unsupplied electricity (ENS – Electricity that has not been supplied) is the electricity that would have been supplied by the system if there had been no interruption of the electricity supply.

The general measurement indices reported by TSO for electricity supply and service quality standards for 2022 are presented below.

- AIT - for scheduled outage (interruption) was 9 minutes or 0.15 hours;
- AIT - for unplanned interruption was 27 minutes or 0.45 hours;
- ENS - for scheduled interruptions in the transmission system was 0.161 GWh; and
- ENS – for unplanned interruptions in the transmission system was 0.498 GWh.

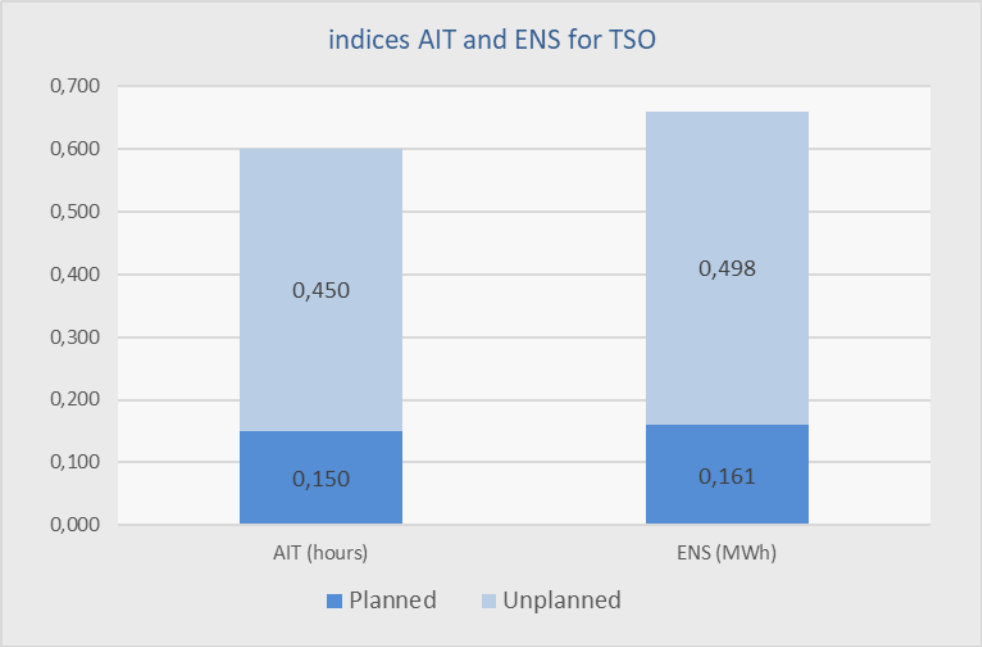


Fig. 5.24 AIT and ENS measurement indicators for KOSTT for 2022

The measurement index reported by OST for the quality standards of electricity supply and service, respectively for electricity during the years 2015 - 2022, is presented in the following figure.

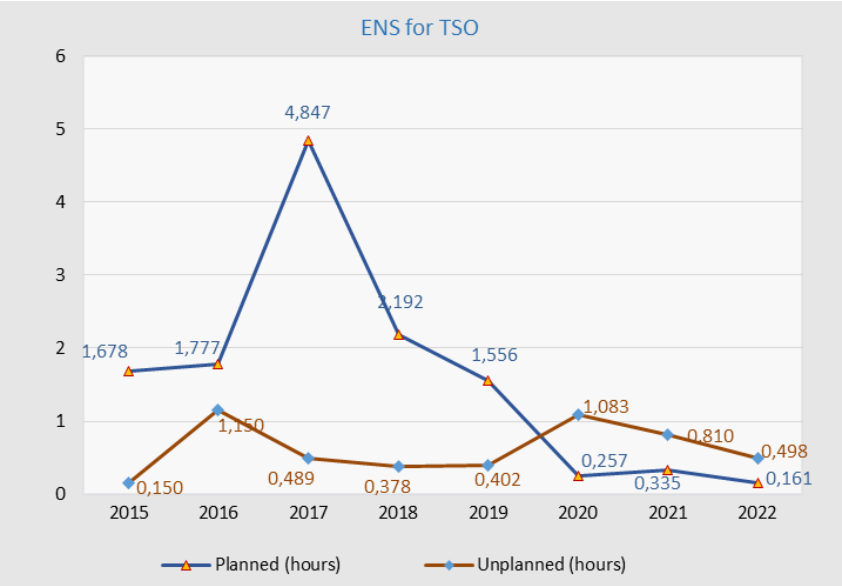


Fig. 5.25 ENS measuring index for OST for the period 2015 - 2022

According to the data reported for the ENS measuring index, during 2022 there is a reduction or improvement of this index for 42.45% compared to 2021, respectively there is a reduction in planned interruptions of 51.94% as well as in unplanned interruptions of 38.52%.

5.8.1.2 Measurement indices reported by DSO

The measurement indices reported by DSO on the quality standards of electricity supply and service for 2022 are presented below.

- SAIDI - there are 35.89 hours for planned interruptions in the distribution system;
- SAIDI - There were 39.67 hours for unplanned interruptions in the distribution system;
- SAIFI - for planned interruptions in the distribution system was 8.91;
- SAIFI - for unplanned interruptions in the distribution system was 42.19;
- ENS - for planned interruptions in the distribution system was 22.75 GWh; and
- ENS – for planned interruptions in the distribution system was 32.84 GWh.

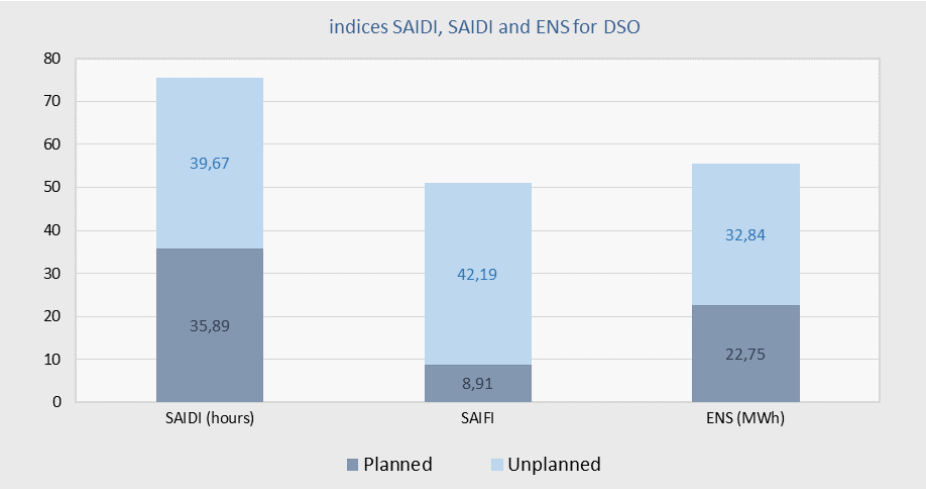


Fig. 5.26 SAIDI, SAIFI and ENS measurement indices for DSO for 2022

The measurement indices reported by DSO for the quality standards of electricity supply and service during the years 2011 - 2022 for the SAIDI and SAIFI index, while for the ENS index they are over the years 2015 - 2022, are presented in the following figures.

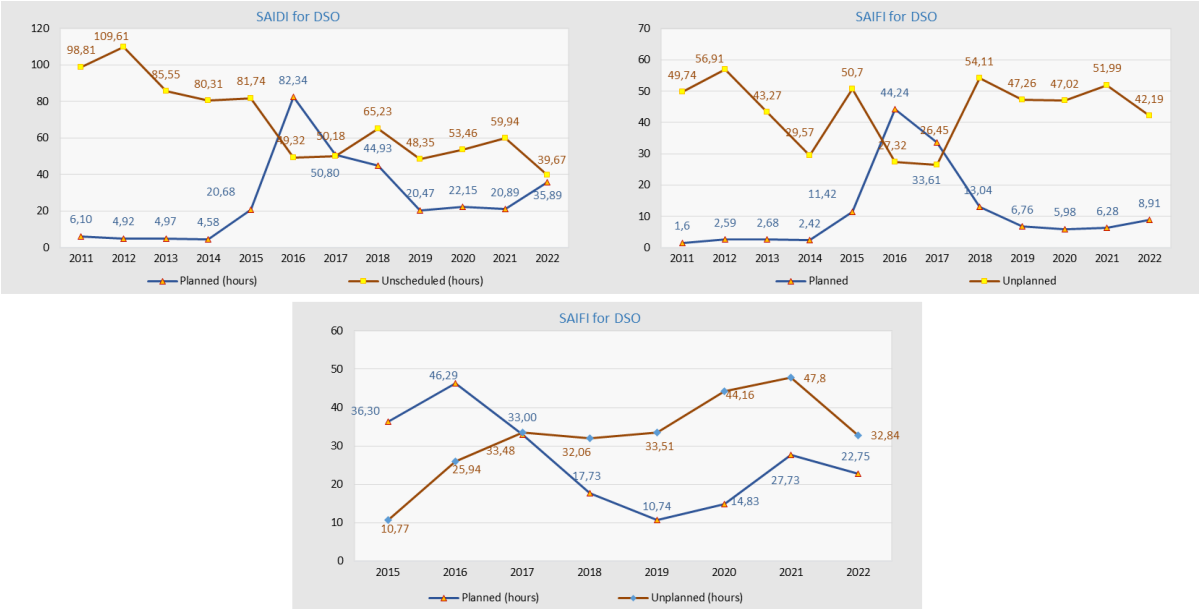


Fig. 5.27 SAIDI, SAIFI and ENS indicators for DSO for the period 2011-2022, and 2015-2022

From the above data, it can be observed that some of the measurement indices SAIDI, SAIFI and ENS in 2022 have generally improved compared to 2021.

According to the data reported for the SAIDI measurement index during 2022, it is observed that there was an improvement of this index compared to the year 2021, which means that in 2022 in total there is a decrease of interruptions (outages) by 6.52% compared to the year 2021. During more detailed analysis of the SAIDI - index, it is observed that in 2022 there is an increase in planned interruptions of 71.80% compared to 2021, as well as a decrease in unplanned interruptions for 33.82% compared to 2021.

From the analysis made of the SAIFI measuring index, it is observed that during 2022 there is an improvement of this index compared to the year 2021, which means that in 2022 in total there is a decrease of interruptions by 14.03% compared to the year 2021. It is worth noting that during the more detailed analysis of the SAIFI - index, it is observed that in 2022 there is an increase in the frequency of planned interruptions per customer (SAIFI) for 29.52% compared to 2021, as well as a decrease in the frequency of unplanned interruptions per customer for 23.23 % compared to 2021.

During 2022, the unsupplied electricity (ENS) in general has improved compared to 2021, and according to the data it is observed that in 2022 there is a decrease of 26.4% compared to the year 2021. During the more detailed analyzes of the ENS index, it is observed that in 2022 there is a decrease of unsupplied electricity for planned interruptions by 17.96% compared to 2021, as well as a decrease of unsupplied electricity for unplanned interruptions by 31.30%, compared to 2021.

5.8.2 Voltage quality

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

During 2022, the number of complaints submitted by customers to DSO related to the quality of the voltage was 162 complaints, of which 145 or 89.51% were resolved, while 17 complaints or 10.49% are in the process of review.

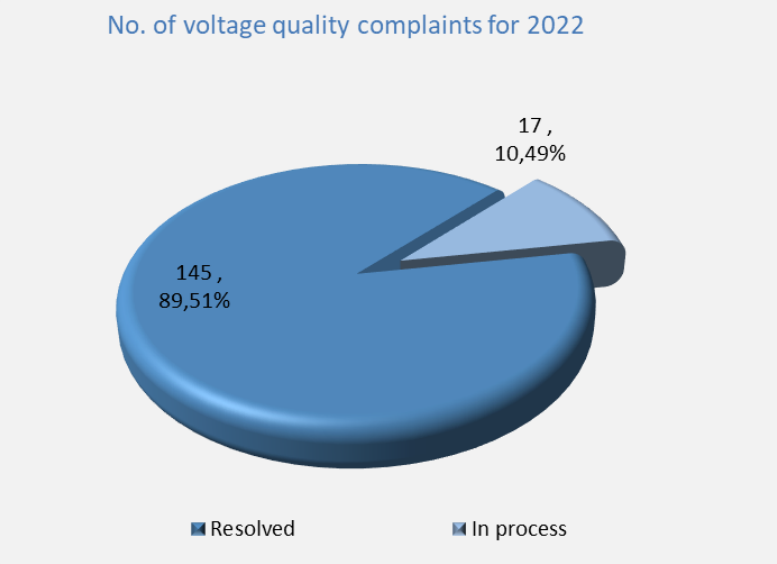


Fig. 5.28 Customer complaints about voltage quality in 2022

The figure with data on the status of resolved customer complaints about voltage quality in DSO for 2022 is presented below.

Fig. 5.29 Status of resolved customer complaints for 2022

So, from the figure above, it can be seen that DSO out of 145 resolved customer complaints about voltage quality, of them 72 complaints has approved in favor of customers or 49.66%, while 73 has

rejected, or expressed as a percentage of 50.34%. From the number of rejected requests, 15 of them did not result in problems, 48 were reviewed and included in the investment plan, while for 10, due to the fact that the assets are private, the customers were instructed to apply for electrical consents.

Customer complaints about voltage quality are presented in the figure below, according to years, where it can be seen that in 2017 there was an increase in customer complaints about voltage quality, while from 2018 it is observed that there is a decrease in customer complaints about voltage quality, whereas in 2022, compared to 2021, we have the same number of complaints about voltage quality.

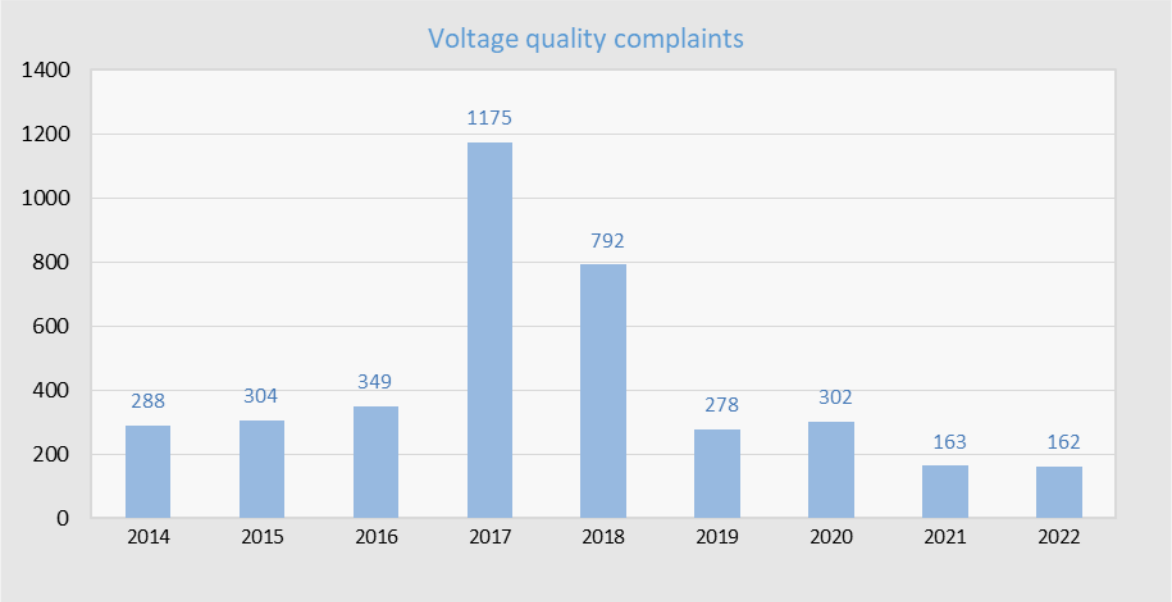


Fig. 5.30 Complaints about voltage quality by years

The voltage quality standards are defined in the Rule on General Conditions of Electricity Supply, the Distribution Code and the Distribution Metering Code.

5.8.3 Commercial Quality

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

In order to analyse the commercial quality, the data obtained from the licensee are presented in two categories which directly affect the customer issues. These categories are:

- New connections;
- Electrical consents; and
- Customer complaints.

5.8.3.1 New Connections

The commercial quality standards, among others, also include new connections, through which it is evident how quickly the electricity company takes measures to implement new connections.

During 2022, a total of 28,653 regular requests for new connections were registered for tariff groups 4, 5, 6, 7 and 8, while 27,206 or 94.95% of requests for new connections were approved, while the

remaining part is in the process of registration. It should be noted that the requests for new connections carried over from the previous year were 3,855.

From the data of KESCO, it can be seen that from the total number of requests for new connections, the most requests were from domestic customers (tariff group 5 and 6) 24,994 or 87.23%, followed by requests for new connections of the commercial tariff group 0.4 kV Category II - tariff group 4 which were 3,438 or 12%, while the requests for tariff group 8 - Public lighting were 218 or 0.76%.

From the total number of registrations of applicants as customers in the "CCP" billing program, domestic customers are 22,062 or 86.11%, followed by tariff group 4 (0.4 kV Category II - commercial) with 3,310 registrations or 12.92%, as well as tariff group 8 (public lighting) with 248 registrations or 0.97%.

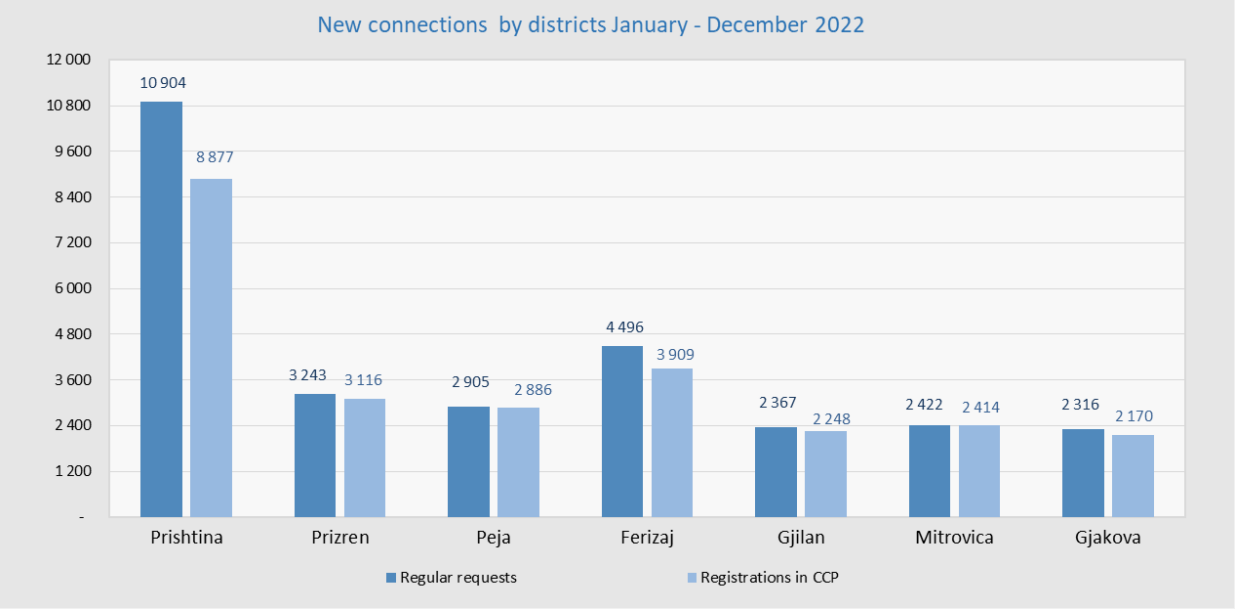


Fig. 5.31 New connections by districts for 2022

From the diagram above, it can be seen that for 2022 from the total number of requests for new connections, the most requests were in the district of Pristina with 10,904 or 38.06%, followed by the district of Ferizaj with 4,496 or 15.69%, while the least requests for new connections were registered in Gjakova district with 2,316 or 8.08%. Also, it should be noted that regarding the registrations of requests in the billing program from the total number, the most registrations were in the district of Pristina with 8,877 or 34.65%, followed by the district of Ferizaj with 3,909 or 15.26%, while the least registrations were recorded in Gjakova district with 2,170 or 8.47%.

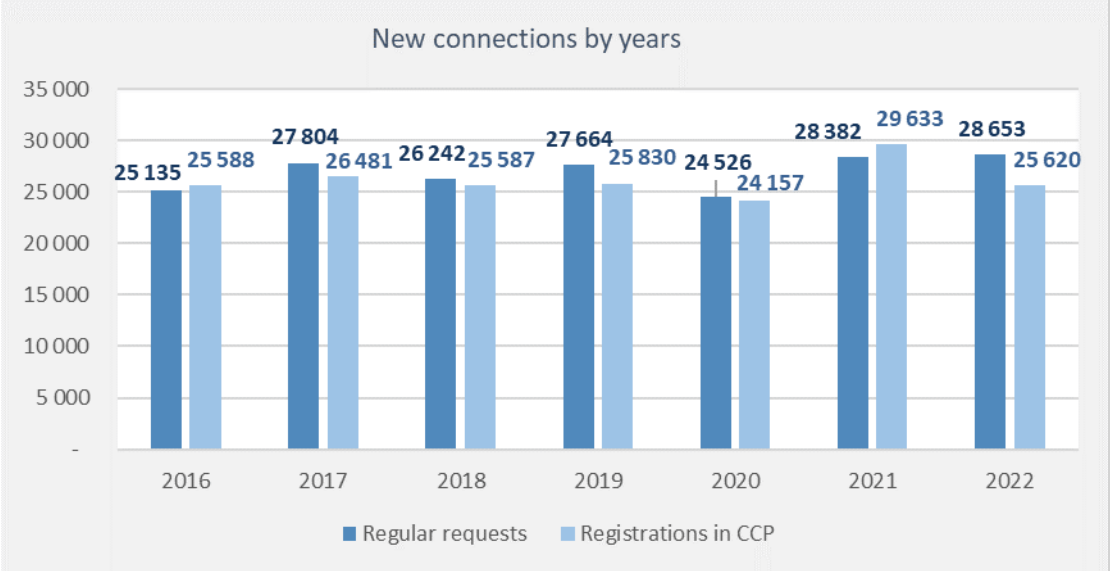


Fig. 5.32 New connections by years

From the diagram above, it can be seen that during 2022 there were 0.95% more requests for new connections than in 2021, and 15.66% less customer registrations than in 2021.

5.8.3.2 Electricity Consent

From the data presented, it can be seen that during 2022, 2,888 requests for Electricity Consents were submitted to KEDS, while 83 consents were carried over from 2021.

Tab. 5.26 Electricity Consents for 2022

Districts	January	February	March	April	May	June	July	August	September	October	November	December	Total
Prishtina	48	60	91	52	86	61	66	94	87	82	67	84	878
Mitrovica	13	20	22	20	17	13	14	17	21	13	16	13	199
Peja	27	27	50	34	24	42	30	34	43	25	33	49	418
Gjakova	17	10	9	32	18	29	21	17	44	23	24	27	271
Prizren	14	6	21	20	23	15	19	29	24	25	17	22	235
Ferizaj	50	58	74	48	61	35	44	49	70	58	32	69	648
Gjilan	16	14	19	25	17	23	26	19	15	24	19	22	239
Total	**185**	**195**	**286**	**231**	**246**	**218**	**220**	**259**	**304**	**250**	**208**	**286**	**2 888**

From the table above, it can be observed that from the total number of requests for Electricity Consent for 2022, the most requests were registered in the district of Pristina with 878 or expressed as a percentage of 30.40%, followed by the district of Ferizaj with 648 or 22.44%, while the least requests were in Mitrovica district with 199 or 6.89.

Tab. 5.27 Electricity consents by districts for 2022

Districts	Requests for EEC 2022	Reviewed - EEC	Reviewed - Information	Examined - Response	Sent to other departments	In process
Prishtina	878	612	130	48	99	15
Mitrovica	199	147	33	14	13	2
Peja	418	299	63	21	39	5
Gjakova	271	163	59	16	25	13
Prizren	235	181	34	10	19	5
Ferizaj	648	432	136	23	45	23
Gjilan	239	152	56	24	9	6
Total	**2 888**	**1 986**	**511**	**156**	**249**	**69**

From the table above, it can be seen that out of 2,888 requests of applicants for Electricity Consent for 2022 and 83 carried over from 2021, 1,986 requests have been reviewed and issued Electricity Consent, 511 requests have been reviewed and the parties have been given Information regarding their request for Electricity Consent, 156 requests have been reviewed and an answer have been given to the parties, while according to the KEDS data, 249 other requests have also been reviewed, but according to the Department of Electricity Consents within the KEDS, it has been concluded that Electricity Consent should not be granted to these requests, but these requests have been delegated to other departments, the rest of the requests are in the process of review.

The diagram of requests for Electricity Consents for the period according to the years 2014 - 2022 is presented below, and from the diagram it is clear that for each year there has been an increase in requests for Electricity Consents from applicants for connection, and compared to the year 2021 we have an increase of 946 applications or expressed as a percentage of 48.71%.

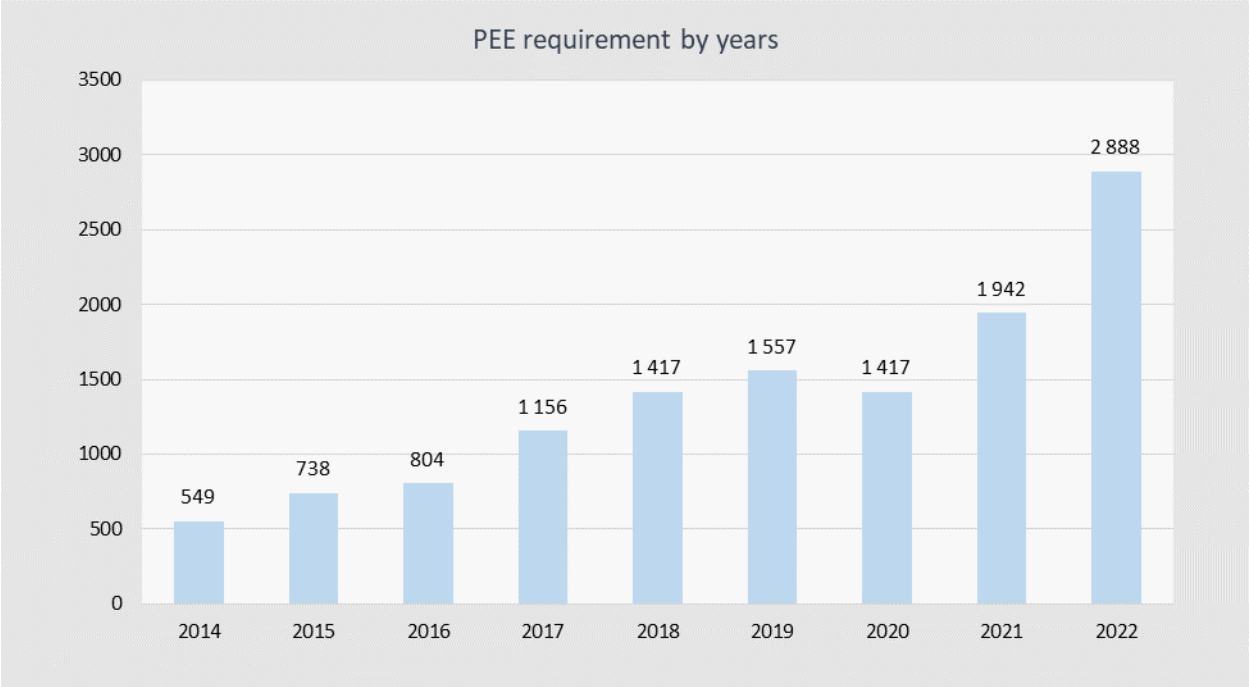


Fig. 5.33 Requests for electricity consents for the period 2014-2022

5.8.3.3 Customer complaints to the supplier - KESCO

According to KESCO's reported data during 2022, the total number of customer complaints registered in the Customer Department at KESCO is 8,425, and there were 2,190 complaints carried over from last year, while 6,958 were resolved/completed.

The chart of registered and resolved customer complaints for 2022 by districts is presented below.

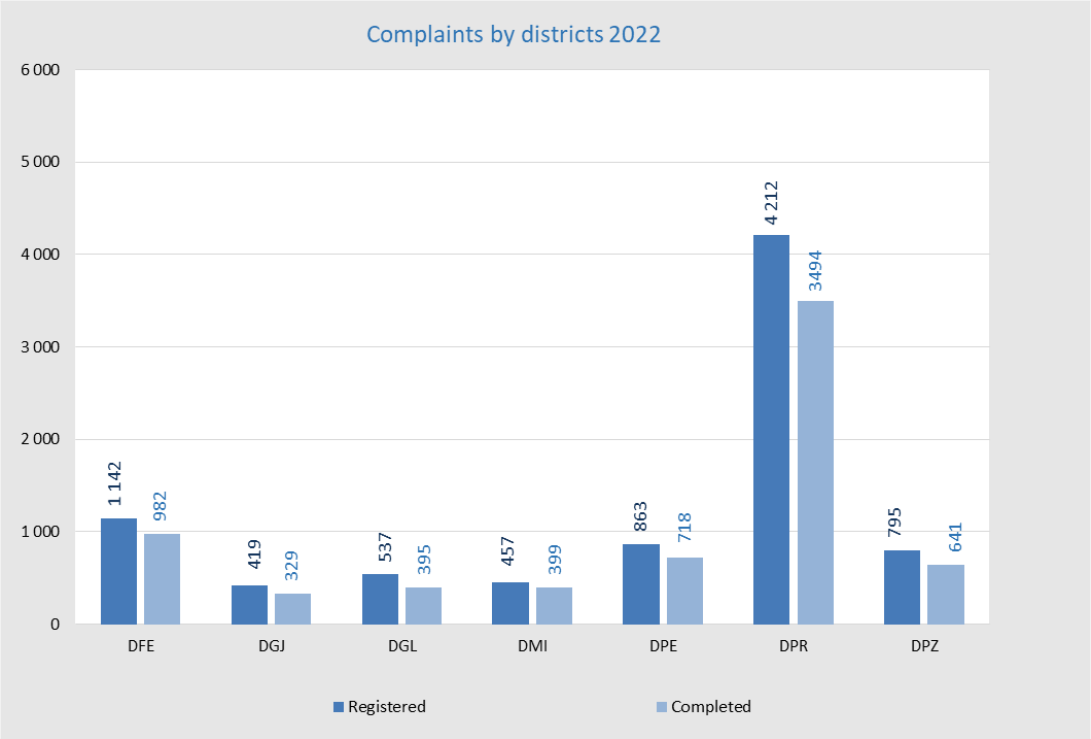


Fig. 5.34 Complaints and number of customers by districts, 2022

From the figure above, it can be seen that the highest percentage of customer complaints registered in KESCO during 2022 is in the district of Pristina 49.99%, followed by the district of Ferizaj with 13.55%, while the lowest percentage is in the district of Gjakova with 4.97 %. It should be noted that the largest number of complaints in the district of Prishtina is mainly because the District of Prishtina also has the largest number of customers in Kosovo. Also from the figure above it can be seen that the highest percentage 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 50.22%, followed by the district of Ferizaj with 14.11%, while the lowest is in the Gjakova district with 4.73%.

The report of customer complaints submitted to KESCO with the number of invoices/customers by months is presented below.

Tab. 5.28 The report of complaints and the number of customers by months for 2022

Month	Complaints	Number of bills	Ration complaint/consumer
January	653	656 514	0,10%
February	876	658 341	0,13%
March	1 006	660 464	0,15%
April	693	662 194	0,10%
May	550	663 910	0,08%
June	496	665 411	0,07%
July	520	666 704	0,08%
August	660	668 597	0,10%
September	666	671 148	0,10%
October	573	672 538	0,09%
November	592	674 867	0,09%
December	1 140	678 816	0,17%
Total	**8 425**	**7 999 504**	**0,11%**

From the data reported by the KESCO supplier, it can be seen that the number of complaints registered during 2022 is 8,425, which represents 1.24% of the total number of customers, respectively 0.11% against the total number of annual invoices.

The number of complaints registered and completed according to the nature of complaints for 2022, is shown in the following figure.

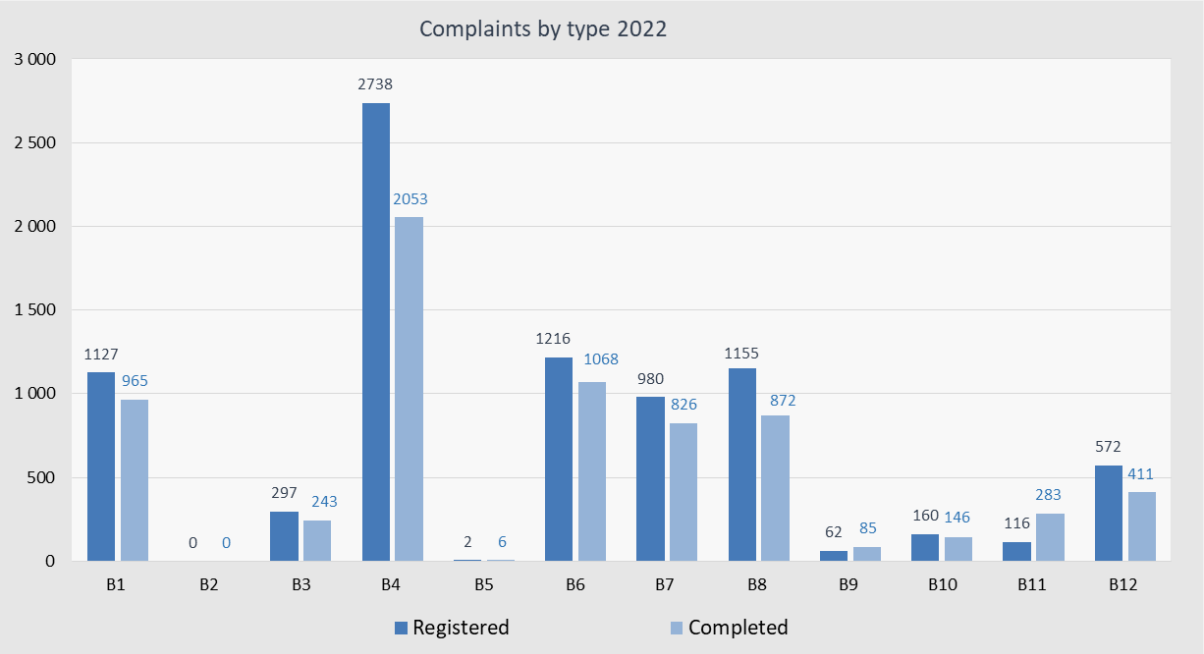


Fig. 5.35 Customer complaints by nature for 2022

Descriptions of the nature of customer complaints submitted to the Supplier - KESCO, are presented below:

B1 - Unregistered payment **-** this nature of complaints concerns if the customer notices that the payment made by him/her has not been registered in his/her account (his/her code), then the

customer must appear at KESCO, and file a complaint for unregistered payment, attaching his payment-receipt and other evidence**.**

B2 - Initial balance error - This nature of complaints concerns when the customer has noticed that a mistake was made during the transfer of the initial data, and as such requests that the initial balance be corrected.

B3 - Non-receipt of invoices - This nature of complaints is related to the fact that electricity bills do not arrive regularly or do not come at all, then the customer based on this, the customer must present this nature of complaints to KESCO so that this does not happen in the future.

B4 - Over limit - This nature of complaints is related to the customer's complaint that it was billed over the limit due to reading or billing errors.

B5 - Flat rate change - This nature of the complaints has to do with the fact that in cases where for a certain period the customer was being billed flat rate/without meter reading, and now the electric meter has been installed, and the customer wants to be billed according to the meter reading recorded in the meter.

B6 - Incorrect reading - This nature of complaints has to do with the fact that the customer's electricity consumption (kWh) read does not match the electricity consumption billed, then the customer must submit a complaint of this nature.

B7 - Irregular reading - This nature of the complaints has to do with the fact that the electric meter that records the electricity consumed is not being read regularly, monthly, and consequently we have the accumulation of electricity consumption in only one bill.

B8 - Incorrect meter - This nature of the complaints is related to the fact that if the customer suspects that the meter makes incorrect reading, then should appear himself to KESCO and make a complaint about the incorrect reading of the measuring point.

B9 - Request for repayment of debt - This nature of complaints is related to the fact that if a customer has privatized an enterprise and in the transactions of the privatized enterprise there is a debt that belongs to the old enterprise, then this debt must be requested to be settled and to change the name, then in these cases the customer must bring 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 J.S.C. is obliged to settle a debt in customer transactions, then the customer must appear himself to KESCO with all relevant documentation.

In cases where the customer has property that has been occupied by different persons and we have debts accumulated by other persons, then the customer must appear to KESCO and bring with him the documents issued by the Kosovo Property Agency, which proves that the property has been occupied, then based on the provided documents the customer requests that the contested debt be settled, but of course the uncontested debt must be paid.

B10 - Disconnection without notice - This nature of the complaints has to do to the fact if the customer considers that he has been disconnected from the electricity network without notice.

B11 - Other – this nature of complaints is related to the fact that if none of the above points suit the customer, then the customer must write his complaint in words.

B12 – Unauthorized use of electricity (Recovery of losses) – This nature of customer complaints is related to complaints which are linked with unauthorized use of electricity, such as uncontracted usage of electricity, and theft of electricity.

From the data reported by KESCO for 2022, it is observed that of the total number of customer complaints, the most complaints 2,738 or expressed as a percentage of 32.5% were related to over-limit invoices due to reading or billing errors, complaints related to incorrect readings of 1,216 or expressed as a percentage of 14.43%, followed by complaints related to unregistered payments, while the least complaints only 2 complaints or 0.02% were related to the change of the flat-rate.

Based on the data reported by KESCO on customer complaints, it is observed that there is an increase in the number of complaints in 2022, and this increase is generally related to over the limit invoices due to reading or billing errors as well as reading errors in metering point (incorrect reading and irregular reading). From the reported data, it can be observed that in 2022 we have a slight increase in complaints related to reading errors at the metering point (incorrect reading and irregular reading). In general, it should be noted that the number of customer complaints related to errors in the reading of the metering point is decreasing and this is thanks to the new way of reading the metering point by means of a hand-held device (eng. "Hand Held Unit"), which has significantly improved the reading of the metering points and reduced the possibility of errors during the reading of the metering point, because the reading and billing are done at the same time.

The figure with the data of complaints resolved by KESCO for 2022, or more precisely the status of resolved complaints, is presented below.

Fig. 5.36 Status of resolved customer complaints for 2022

From the figure above, it can be seen that out of 6,958 resolved customer complaints, KESCO approved 3,342 complaints in favour of customers or 48.03%, while 3,616 or 51.97% expressed as a percentage were rejected.

The diagram with the ratio of complaints submitted and resolved to the supplier KESCO according to the years 2014-2022, is presented below.

Fig. 5.37 Customer complaints at KESCO by years

6 THERMAL ENERGY SECTOR

The thermal energy sector in Kosovo consists of four systems: TH Termokos - Prishtina, TH Gjakova, TH Termomit - Mitrovica, and in Zveçan. This sector has a rather limited outreach at the local level, meeting approximately 3 - 5% of the overall demand for heating in Kosovo.

6.1 Technical characteristics of thermal energy systems

The thermal energy sector in Kosovo consists of 4 thermal energy (central heating) systems with an installed production capacity estimated to be around 289 MWTH. The heating plant of Termomit, Mitrovica and Zveçan, due to known circumstances, do not respond to the requirements for licensing/regulation and monitoring by ERO, so it is impossible to provide relevant updated data; for this reason, detailed data for HP Termokos and HP Gjakova are presented below.

6.1.1 Thermal energy production plants

Thermal energy production plants of HP Termokos consist of the main heating plant with a total installed capacity of 120 MW_{TH}, and the auxiliary heating plant in the University Clinical Center with a capacity of 14 MW_{TH}. With the installation of the thermal energy extraction station in units B1 and B2 of PP Kosova B, the installed cogeneration capacity of 140 MW_{TH}. has been added to this capacity. It should be noted that the fuel oil boilers in the heating plant of HP Termokos have not been decommissioned, but they serve as a reserve capacity to be activated in case of any eventual breakdown in PP Kosova B units.

The new biomass heating plant of the city of Gjakova is equipped with two units for the production of only thermal energy with an installed capacity of 2 x 5.5 MW_{TH} respectively 11 MW_{TH}, and a co-generation unit with a thermal energy production capacity of 4 MW_{TH} and a capacity of electricity production 1.12MW_{EL}. So the new biomass heating plant has a total installed thermal energy production capacity of 15 MW_{TH}.

6.1.2 Thermal Energy Distribution Systems

Thermal energy distribution systems in Kosovo consist of the primary distribution network that extends to the supply point in substations, and the secondary network that extends from the supply point in substations to the end users.

The primary distribution network of HP Termokos has a route length of 47.8 km, respectively a pipeline length of 95.6 km. An integral part of the distribution network is also the pumping station and heat exchangers located in the Sunny Hill (Bregu i Diellit) and 598 active substations which are dividing points between the primary and secondary networks. In addition to the existing distribution network, in 2014 the thermal energy transportation network PP Kosova B - HP Termokos was built, with a length of about 10.5 km.

The primary distribution network of HP Gjakova extends to a route length of about 20.5 km, respectively a pipeline of 41 km in length. An integral part of this network are also about 220 active substations which are the dividing points between the primary and secondary network.

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

Tab. 6.1 Technical data of central heating systems

Company (City)	Installed capacity [MW_{TH}]	Operational capacity [MW_{TH}]	Thermal energy network	
			Network length (route) [km]	No. of substation
TERMOKOS (Prishtina)	2 x 58 = 116	2 x 49.3 = 98.6	Distrib. network	
	2 x 7 = 14	2 x 6.3 = 12.6	47,8	605
	1 x 4 = 4	3,6	Transp. network	(active-598)
	[Co-generation] 2 x 70 = 140	2 x 68.7 = 137.4	10,5	
Subtotal	274,0	252,2	58,3	605
DH GJAKOVA (Gjakova)	2 x 5.5 = 11	2 x 5.5 = 11	Distrib. network	353
	[Co-generation*] 1 x 4 = 4	[Co-generation*] 1 x 4 = 4	20,5	(active-220)
Subtotal	15,0	15,0	20,5	353
Total	**289,0**	**267,2**	**78,8**	**958 (Active - 818)**

** The cogeneration unit of HP Gjakova has a thermal capacity of 4MW_{TH} and an electrical capacity of 1.12 MW_{EL}*

6.2 The main developments in the thermal energy sector

Referring to the development of the thermal energy sector in general, it is important to note that, during 2022, the preparation of the Feasibility Study for new thermal energy systems (central heating) in eight cities of Kosovo continued. This study is developed within the framework of the WBIF platform, where the leading financial institution is the European Investment Bank, analyses the economic-financial and technical reasoning of the creation of thermal energy systems in 8 cities of Kosovo - Peja, Prizren, Gjilan, Ferizaj, Mitrovica, Drenas, Obiliq and Zvecan.

This project will have a positive impact on the energy stability of Kosovo in the first place by significantly reducing the use of electricity for heating, as well as it will have a positive effect on the preservation of the environment by contributing to the achievement of the goals of energy efficiency and renewable resources.

6.2.1 Developments in HP Termokos

In order to meet the growing demands for connection to the HP Termokos system, during 2022 a number of rehabilitation and expansion projects have been developed respectively initiated, mainly in the distribution network, which are in different stages of development.

During this year, the implementation of the project for the rehabilitation and expansion of the HP Termokos network continued; This project that is led by the German Development Bank (KfW) and contains the following main components:

- Rehabilitation of the distribution network of HP Termokos: Rehabilitation of the network (replacement of pipelines) in a route length of 6.5 km, in the neighbourhood of Centre, Ulpiana and Kodra e Diellit(Sunny Hill);
- Expansion of the network with new segments with a total route length of 16.15 km: Mati 1 7.15 km, Center east 3 km, Arbëria 3 km, and densification of the network in different parts of the city of 3 km route;

- Rehabilitation and modernization of 235 existing substations in the Ulpiana, Dardania, Kodra e Diellit and Center neighbourhoods;
- Installation of 320 new substations in almost all neighbourhoods of the city - where expansion and densification of the network is planned; it should be noted that the largest number of new substations (141) are planned in Mati 1 neighbourhood.
- Installation of 2 tanks for storage of heat with a capacity of 800 m3 (2x400 m3), as well as equipment for chemical water treatment.
- Improvement of the pressure maintenance system in the primary network, including the installation of new pumps, and the remote control system - SCADA

This project, which is the final stage of the implementation, is financed for the most part as a donation from the German Government in the amount of €10 million and the Government of Luxembourg €2.3 million, funds that will be allocated and managed through KfW, as well as the rest of the cost of the investment will be covered by self-financing from Termokos.

Fig. 6.1 View from the network extension and substation rehabilitation works

With the finalization of this project, a reduction in the losses of the thermal energy distribution network is expected to be achieved and the quality of heating in some parts where they are more problematic to be improved; also, the expansion of the network will affect the increase in the number of customers who benefit from thermal energy supply (central heating), respectively the increase of the area for heating the spaces covered by the central heating supply service from Termokos.

In the second half of 2022, the implementation of the project of MCC - USA ("Millennium Challenge Corporation") "Metering the central heating" within the framework of the "Reliable Energy Spectrum" Program has begun. With the installation of individual heating meters at the apartment level, billing based on metered consumption will be facilitated, and by creating a modern billing system for Termokos, it is intended to achieve efficient use of thermal energy. Otherwise, the project 'Metering the Central Heating' in the anticipated value of $10.9 million, as a donation from MCC - USA, will include about 300 collective housing buildings, respectively about 17,500 household and commercial customers; the main components of the project are as follows:

- Installation of 54,000 heat allocators and 5,100 individual thermal energy meters;
- Installation of 85,500 thermostatic valves in customer radiators (apartments and commercial units), as well as installation of circulating pumps in a limited number of thermal substations;
- Development of software for billing and reading thermal energy consumption;

- Assistance in improving billing services based on metered consumption.

The complete implementation of this project will enable the metering of consumption and the implementation of billing based on the recorded metering of consumption, which the saving of thermal energy that will free up the capacities for expanding the customer base will be achieved, respectively it will enable connection of a significant number of customers to the heating system who currently use electricity for space heating.

The year 2022 has marked the initiation of two important projects for thermal capacities building of HP Termokos:

- **"Solar4Kosova - Solar for district heating" project:** Project initiated within the cooperation of our Government with KfW and EBRD, for the production of thermal energy from solar energy, with an estimated investment value of about € 80 mil. The grant and loan agreement signed in December 2022 provides for the combined financing of this project: a €31.6 million grant from the German Government through KfW, €21.5 million grant from the EU, and a €23.2 million loan from the EBRD.
- **The project for doubling the capacity of extraction of thermal energy from cogeneration in PP Kosova B:** This project is in the initial study phase within the framework of the IPA supported by the EU and the EIB (European Investment Bank). In June 2022, the Government of Kosovo has signed an agreement with the EIB for a financial grant in the amount of €1.5 million for the design of the study for this project. This project, which is expected to have an investment value of about €25 million, will contribute to the further expansion of the central heating system of Termokos with a positive impact on preserving the environment and increasing the quality of life of the citizens of Pristina.

Regarding the development projects, it should be noted that these projects are included in the ten-year Development Plan of THP Termokos, approved by the ERO Board. The Development Plan presents the efficient measures that will be taken to guarantee the suitability of the system and to ensure the best possible supply of thermal energy (central heating), including the plannings for the rehabilitation and expansion projects of the infrastructure of the central heating system in the municipality of Pristina, during the next ten years.

6.2.2 Developments in FTHP Gjakova

After the completion of the main development project of THP Gjakova - the new biomass heating plant that also includes the unit of co-generation of electricity and thermal energy - during 2022, the implementation of the project "Improving the performance of the central heating system of Gjakova" continued ; 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 thousand.

This project, which is the final phase, has included the complete rehabilitation of the Gjakova THP system and the increase of energy efficiency, as well as the increase of the operational and financial performance of the enterprise; 4 main components are briefly described below:

- The corporate development of the enterprise - the heating plant of the city of Gjakova;
- Rehabilitation of the distribution network and substations: rehabilitation of about 9.7 km of pipelines, where for the most part it is the replacement of 6.2 km of old steel pipes;

rehabilitation of 342 thermal substations including the installation of pressure/temperature/flow control devices (instruments) and metering devices;
- Rehabilitation of the internal network (secondary network) and 14 thermal substations of the regional hospital of Gjakova; and
- The connection to the central heating system of 13 new buildings - mainly public ones, which also includes the installation of new substations.

6.3 Performance of thermal energy enterprises

In the 2021/2022 season, THP Termokos has continued with the positive trend of stable production and supply of thermal energy, providing uninterrupted 24-hour supply, which is mainly the result of sufficient production from the cogeneration plants in PP Kosova B, but also the implementation of network rehabilitation projects and thermal substations.

Regarding PE Gjakova, it should be mentioned that the 2021/2022 season was the first season of commercial operation of the new biomass heating plant; it should be noted that PE Gjakova has activated only the units for the production of thermal energy only, and that the production and supply of heat started in November 2021 and ended at the beginning of March 2022. The reasons for the late start of the season were related to the non-fulfillment of the legal requirements for issuing the environmental permit on time - concretely, the contracting of the licensed company for the measurement of emissions has been delayed. This then caused delays in the issuance of the environmental permit as well as the operating license.

6.3.1 Production, supply and losses in the system

THP Termokos

- **Thermal energy production**

DH Termokos has based the production of thermal energy from cogeneration plants in PP Kosova B. In fact, in the 2021/2022 season, the overwhelming amount of thermal energy production has been from cogeneration plants in PP Kosova B, while oil-fired boilers have only been used one day, when due to breakdowns of two blocks in PP Kosova B, the supply of thermal energy from the co-generation plants was interrupted; The registered gross production of thermal energy from fuel oil boilers was 96 MWhTH.

The amount of thermal energy extracted from co-generation in the 2021/2022 season was **294,373 MWh_{TH}**, which is for 5,720 MWh_{TH} or 2% greater than the amount of thermal energy in the previous season (288,653 MWh_{TH}). While the amount of thermal energy received at the heat exchange station at THP Termokos was **288,485 MWh_{TH}**, which also represents an increase of about 2% compared to the previous season (282,881 MWh_{TH}) .

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

Tab. 6.2 Thermal energy production from cogeneration

Thermal Energy from Co-generation – DH Termokos, Season 2021/2022			
Month	Unit	Term. ener. extracted (measured in TC Kosovo B)/Gross production	En.term. received (measured in NQ Termokos)/Net production
October 2021	MWh_{TH}	24 764	24 269
November 2021	MWh_{TH}	37 423	36 675
December 2021	MWh_{TH}	49 979	48 979
January 2022	MWh_{TH}	56 732	55 597
February 2022	MWh_{TH}	46 678	45 744
March 2022	MWh_{TH}	50 177	49 173
April 2022	MWh_{TH}	28 620	28 048
Total	**MWh_{TH}**	**294 373**	**288 485**

- **Thermal energy supply**

In the 2021/2022 season, THP Termokos has also continued with sufficient quantitative and qualitative supply of thermal energy, which is mainly the result of continuous improvement of thermal energy production, as well as maintenance, repairs and rehabilitation of the network.

The supply of customers with thermal energy (central heating) in this season is estimated to be **256,616 MWh_{TH}**, which represents an increase of **3,406 MWH_{TH}** or 1.3% compared to the previous season 2020/2021 (253,210 MWh_{Th}**).** This realized supply is quite satisfactory and has met the plans and objectives for a sufficient and quality supply.

- **Losses in the system**

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

The losses in the thermal energy transport network TC Kosova B - DH Termokos, in a length of 10.5km, have been determined by the measurements that were carried out at the thermal energy extraction station in TC Kosova B and in the receiving station of thermal energy in DH Termokos. From the measurements that were carried out in the period October 2021 - April 2022, it results that the quantitative losses in this period are **5,888 MWh_{TH}** respectively **2%;** the level of losses in the transportation network is the same as last season. Details about the losses in the thermal energy transportation network are given in the following table.

Tab. 6.3 Thermal energy and losses in the transmission network of PP Kosova B - THP Termokos - season 2021/2022

Losses in the trans. network Term. En. Season 2020-2021	October	Novem ber	Decemb er	January	Februar y	March	April	Total
Thermal energy extracted - measured in TPP Kosova B [MWh]	24 764	37 423	49 979	56 732	46 678	50 177	28 620	294 373
Thermal energy received - measured in DH Termokos [MWh}	24 269	36 675	48 979	55 597	45 744	49 173	28 048	288 485
Quantitative losses of energy [MWh]	495	748	1 000	1 135	934	1 004	572	5 888
Losses in [%]	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%

Losses in the primary distribution network of thermal energy are normally determined by measurements of thermal energy at the entrance of the distribution network and from the supply of thermal energy to customer substations. However, in the absence of the complete measurement of the thermal energy supply (in substations), some approximations have been made for the calculation of the supply, using in the first place the parameters such as: the specific demand for heating capacity (W/m2) and hours of full load respectively specific consumption (kWh/m2). The calculated value of consumption is **256,616 $MWh_{Th.}$** By deducting this consumption value from the amount of thermal energy fed into the distribution network **(287,830 MWh_{Th})** it results that the quantitative losses in the distribution network for the 2021/2022 season are **31,214 MWh_{Th}**, which represents **10.84%** in percentage**.** This level of losses represents an increase of 0.6% compared to the previous season (10.24%); this increase in losses is a consequence of network rehabilitation works that were also carried out during part of the heating season, where it was necessary to perform 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 summarized data for production, supply and total losses in the network - thermal energy transport network and in the distribution network, are presented in the following table:

Tab. 6.4 Energy performance of THP Termokos - season 2021/2022

DH Termokos- Heating Season i 2021/ 2022		
Description	Unit	Value
Gross production in central heating plants	[MWh_{th}]	96
Gross production in co-generation plants	[MWh_{th}]	294 373
Quantitative loss in the transport network (TPP Kosova B - DH Termok	[MWh_{th}]	5 888
Percentage losses in the transport network	[%]	2,00
Own consumption	[MWh_{th}]	752
Net production of thermal energy	[MWh_{th}]	287 829
Quantitative losses in distribution network	[MWh_{th}]	31 214
Percentage losses in the distribution network	[%]	10,84
Supplying consumers with thermal energy	[MWh_{th}]	256 615

THP Gjakova

- **Production of thermal energy**

In the 2021/22 season, THP Gjakova has started commercial operation in the new biomass heating plant. However, due to the impossibility of securing the necessary amount of fuel, even in this season the production of thermal energy has been reduced - the gross production was **12,773 MWh_{TH}** while the net production of thermal energy was **12,713 MWh_{TH}**. For this production of thermal energy in this season, **5,150 tons** of fuel - biomass were consumed.

- **Supply of heating**

As a result of reduced production, THP Gjakova during the 2021/2022 season has provided a reduced supply; it should also be noted that for this reason the supply was stopped before the official end of the season. The supply of customers with thermal energy in this season was **10,170 MWh_{TH}**, an amount that does not meet the heating demand of all customers connected to the Gjakova THP system.

- **Losses in the system**

Regarding the losses in the production of thermal energy, it should first be noted that the metering devices in the new heating plants are installed, but the correct reading of these devices must be carried out, as well as the correct processing and reporting of the data for the production of thermal energy. According to the company's reporting, the efficiency of the boilers for the production of thermal energy is estimated at about 80%, which causes a loss during the process of transforming fuel energy into thermal energy, which is estimated to be 3,193 MWh_{TH}.

Losses in the primary distribution network are calculated as the difference between the amount of thermal energy fed into the distribution network and supply/consumption. In the absence of metering the amount of thermal energy supplied (in substations), some approximations have been made to calculate the supply, using first of all parameters such as: the specific demand for heating capacity (W/m2) and hours of full load, respectively specific consumption (kWh/m2). The calculated value of consumption is **10,170 $MWh_{Th.}$** By deducting this consumption value from the amount of thermal energy fed into the distribution network **(12,713MWh_{Th})** it results that the quantitative losses in the distribution network for the 2021/2022 season are **2,543MWh_{Th}**, which in percentage are about 20%.

The summarized data for production, supply and losses in the distribution network are presented in the following table:

Tab. 6.5 Energy performance of THP Gjakova - season 2021/2022

DH Gjakova- Heating Season 2021 -2022		
Description	Unit	Value
Amount of fuel - biomass	[ton]	5 150
Calorific value	[MWh_{th}/ton]	3,1
Energy input from the fuel - biomas	[MWh_{th}]	15 966
Boiler efficiency	[%]	80,00
Gross production of thermal energy	[MWh_{th}]	12 773
Own consumption	[MWh_{th}]	60
Net thermal energy production / Energy input in the distribution netwc	[MWh_{th}]	12 713
Quantitative losses in distribution network	[MWh_{th}]	2 543
Losses in percentage	%	20,00
Supplying consumers with thermal energy	[MWh_{th}]	10 170

The data of production, supply and losses in the system, summarized for the entire thermal energy sector, are presented in the following table.

Tab. 6.6 Energy performance of the thermal energy sector - 2021/2022 season

Thermal Energy Sector - Season 2021/2022				
Description	Unit	DH Termokos	DH Gjakova	Total
Gross production of thermal energy	[MWh_{th}]	294 469	12 773	307 242
Quantitative losses in transport network	[MWh_{th}]	5 888	-	5 888
Percentage losses in the transport network	[%]	2,00	0,00	2,00
Own consumption	[MWh_{th}]	752	60	812
Net production of thermal energy	[MWh_{th}]	287 829	12 713	300 542
Quantitative losses in distribution network	[MWh_{th}]	31 214	2 543	33 757
Percentage losses in the distribution network	[%]	10,84	20,00	11,23
Supplying consumers with thermal energy	[MWh_{th}]	256 615	10 170	266 785

6.4 Billing, collection and heating area

6.4.1 Billing and collection

Regarding billing, it should first be mentioned that even in the 2021/2022 season, the billing of thermal energy customers was mainly based on the heating surface (per square meter), while a smaller number of customers were billed based on metered consumption, in THP Termokos, the number of customers billed by metering has reached 129 customers, mainly commercial and institutional ones, while THP Gjakova, in the absence of functional meters, almost entirely bills according to the heating surface.

THP Termokos in the 2021/2022 season has recorded an increase in billing compared to the previous season, which is mainly due to the increase in the number of customers, respectively the increase in

the heating surface and the continuous improvement of supply. In fact, the billing made in the 2021/2022 season was **€7,487,083**, which represents an increase of €274,823 or 3.8% compared to the 2021/2022 season (€7,212,260).

Of the total billing realized in the 2021/2022 season of **€7,487,083**, billing with metering was **€2,869,927**, while billing without metering was **€4,617,156**; the ratio of metered and unmetered billing as well as the respective values are shown in the diagram below.

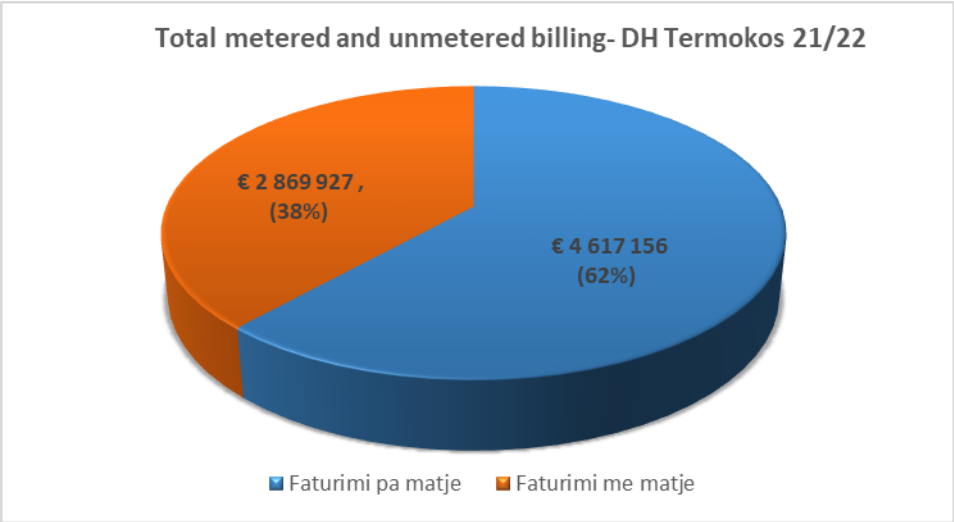


Fig. 6.2 Participation of metered and unmetered billing values in total billing

THP Termokos in the 2021/2022 season has collected the amount of **€5,049,572**, which represents the overall collection rate of **67.44%**. It should be noted that the collection level has marked an increase of close to 4% compared to the previous season 2020/2021 where the percentage of collection was 63.46%. It should be mentioned that in this season the collection of payments from the group of domestic (household) customers is significantly lower (53.70%); while the payment collection of commercial and institutional customers was.

As it was emphasized above, THP Gjakova during the 2021/2022 season has offered a reduced supply, as a result of shortening the heating season and also the active heating surface still remains small compared to the total connected heating surface. Consequently, the billing in this season has been quite small - **€398,584**, while the collection as a monetary amount has reached the value of **€353,094**, which represents a collection rate of 88.59%.

Details regarding billing and collection are shown in the table and chart below.

Tab. 6.7 Billing and collection – 2021/2022 season

Heating season i 2021/ 2022	Heating surface [m^2]	Share in percentage	Billing [€]	Collection [€]	Collection rate [%]
DH "Termokos" Prishtina					
Households	855 044	58,71%	3 698 216	1 985 788	53,70%
Commercial and Institutio	601 241	41,29%	3 788 867	3 063 784	80,86%
Total	1 456 285	100,00%	7 487 083	5 049 572	67,44%
DH "Gjakova" (Gjakova)					
Households	32 239	44,93%	150 084	132 297	88,15%
Commercial and Institutio	39 516	55,07%	248 500	220 797	88,85%
Total	71 755	100,00%	398 584	353 094	88,59%

Fig. 6.3 Billing and collection THP Termokos - season 2021/2022

6.4.2 Heating surface

In the 2021/2022 season, THP Termokos had a total heating surface of customers of **1,456,285 m2**, which is divided into household, commercial and institutional customer groups according to the proportion 59%: 41%.

While the total heating surface of THP Gjakova is **71,755 m2**, divided in the proportion of 45% household customers and 55% commercial and institutional customers. As mentioned above, the heating area of active customers is still small compared to the total area of customers connected to the system and it remains a challenge for THP Gjakova to activate passive customers by providing sufficient and quality supply**.**

The heating surfaces of THP Termokos and THP Gjakova, divided according to customer groups, are presented in the graphs below.

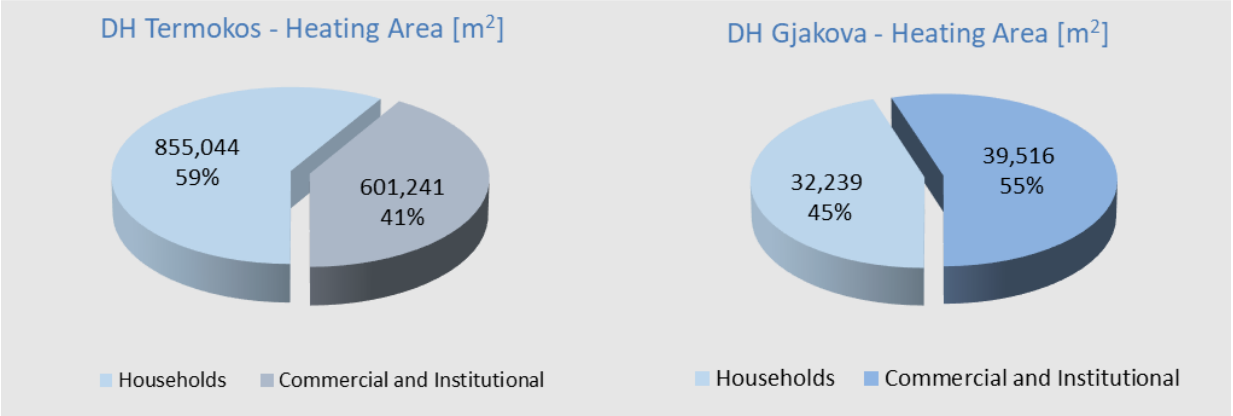


Fig. 6.4 Heating surface according to customer groups in the 2021/2022 season

7 NATURAL GAS SECTOR

7.1 The perspective of the development of the natural gas sector in Kosovo

In order to open the perspective of the development of the natural gas sector and at the same time fulfill the obligations that Kosovo has towards the Energy Community Treaty, the Parliament of Kosovo in June 2016, within the package of energy laws, approved the Law on Gas Natural, No. 05/L-082.

With this law, the third package of European legislation relevant to natural gas has been transposed, mainly:

- Directive No. 2009/73/EC on Common Rules for the Internal Market in Natural Gas; and
- Regulation No. 715/2009/EC on Conditions of Access to Natural Gas Transmission Networks.

The law on natural gas lays the foundations for the legal and regulatory framework for the transmission, distribution, storage and supply of natural gas and for the operation of gas transmission and distribution systems. Consequently, this law defines the organization and operation of the natural gas sector and access to the gas networks and market.

The development of natural gas infrastructure in Kosovo is linked to gas infrastructure projects in the South-Eastern Europe region. It is estimated that the TAP gas pipeline project will have a positive impact on the development of gas infrastructure in the Energy Community, respectively in the region of Southeast Europe, providing opportunities for the connection of planned regional projects such as the Ion-Adriatic gas pipeline (IAP), ALKOGAP and the North Macedonia - Kosovo Interconnection, these projects complete the so-called 'Gas Ring of the Energy Community'.

With the operationalization of the Transadriatic gas pipeline (TAP) along its 878 kilometers of trajectory in Greece, Albania, the Adriatic Sea and Italy, the first gas flows from the "Shah Deniz II" gas sources in Azerbaijan have been enabled. The initial capacity of TAP is 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. So with the state agreements with the "host" states (Greece, Albania and Italy) the connection places and the quantities and capacities of the gas have been predetermined.

In this context of regional developments in the gas sector, in the last 2-3 years, a number of activities have been undertaken related to the current regional gas pipeline projects, such as the pre-feasibility study for the Albania-Kosovo Pipeline project (ALKOGAP) and the North Macedonia - Kosovo Gas Pipeline.

Fig. 7.1 Regional gas infrastructure projects and options for connecting Kosovo (including ALKOGAP and gas interconnection North Macedonia - Kosovo)

The main development during 2022 has been the finalization of the drafting of the National Gas Sector Development Plan and the Review and Assistance for the Regulatory Framework, financed through the WBIF platform, where the leading financial institution is the EBRD. This plan has addressed the development of a comprehensive medium-term plan and the identification of key gas projects, with the main objective of developing the relevant gas infrastructure within the country. Also, within this plan, the review of the regulatory framework, the organizational and institutional assessment and the environmental impact assessment (EIA) were carried out.

This plan includes the following main components:

- Long-term gas demand projections, which include: household and service sectors, industry, central heating sector and electricity generation.
- Evaluation of the most favourable options for supply (import) of natural gas through regional interconnectors and relevant evaluations for the development of the internal natural gas network.
- Definition of the technical parameters of the pipeline and related stations and equipment, as well as the hydraulic analysis of the pipeline and the configuration and optimization of the system.
- Economic and financial analysis including assessment of investment, operation and maintenance costs, as well as cost benefit analysis.

It should be noted that the identification of priority investment projects is based on the preferred industrial scenario that includes the main transmission segment and two segments in the main industrial centers (shown in the map below); specifically:

- Hani Elezit - Pristina segment, as part of the North Macedonia (Skopje) - Kosovo (Pristina) interconnector;

- Prishtina - Mitrovica segment, which also includes Obiliq; and
- Hani Elezit segment - Sharrcem cement factory.

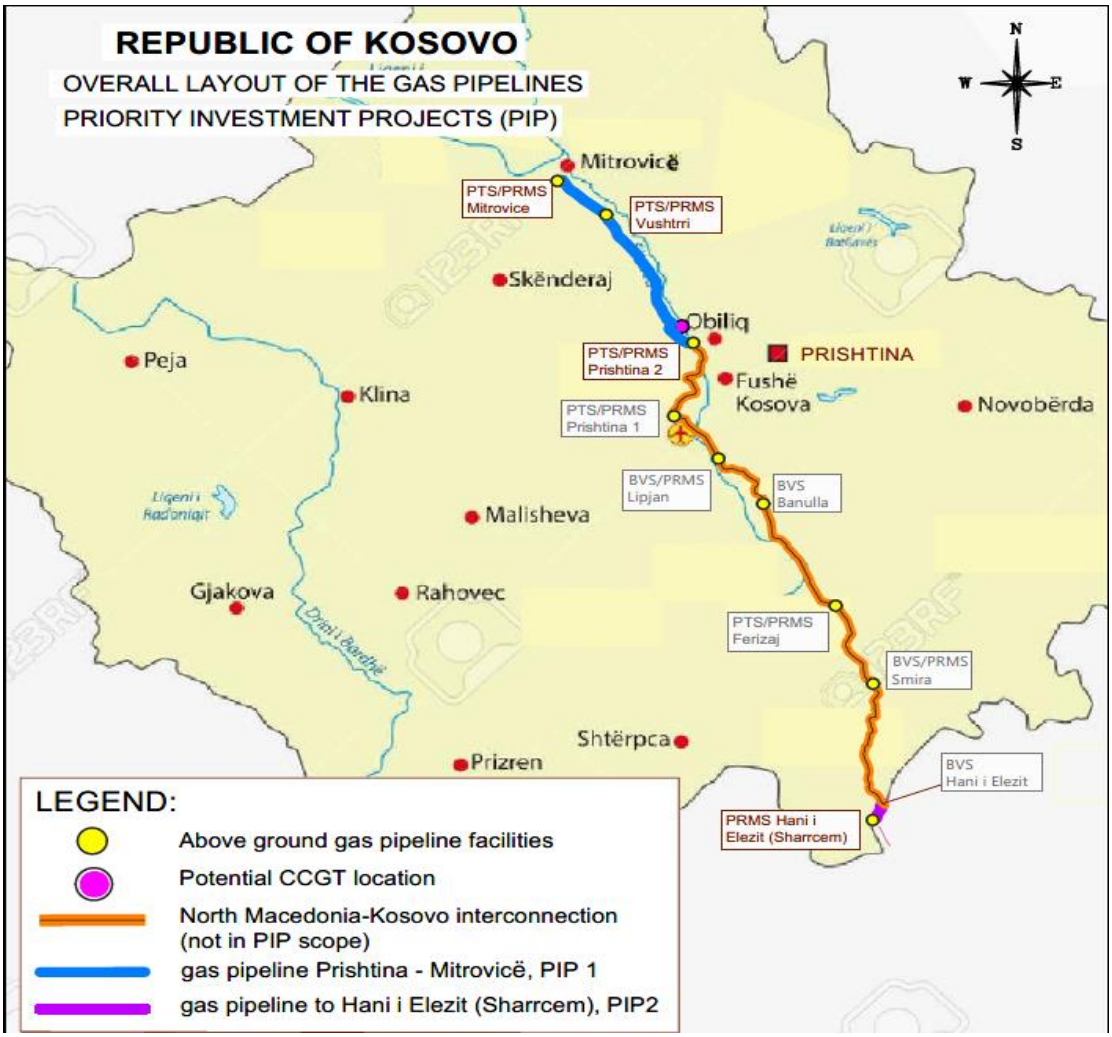


Fig. 7.2 Priority investment projects within the country according to the industrial scenario

It should also be noted that ERO was involved in the 'Project Steering Committee', which had the task of moniftoring the drafting of the study and also contributing by providing relevant comments and inputs.

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