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



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List of abbreviations

CAA	Civil Aviation Authority
AERS	Serbia Regulator
RES	Renewable Energy Sources
CCP	Customer Care Programme
CEER	Council of European Energy Regulators
TENG D	Thermal Energy and Natural Gas Department;
LLD	Legal and Licensing Department
CPD	Consumer Protection Department
TPD	Tariffs and Pricing Department
EMD	Energy Market Department
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EMS	Serbia Transmission System Operation
SKE	Energy Community Secretariat
ECRB	Energy Community Regulatory Board
SEE	South East Europe
ENS	Energy Not Supplied
ENTSO-E	European Network of Transmission System Operators for Electricity
GWG	Gas Working Group
GPNL	Permanent High Level Group - PHLG
GWh	Gigawatt hour
HC	Hydropower Plant
IAP	Ion-Adriatic-Pipeline
ITC	Inter TSO Compensation
KE	Energy Community
SEEEC	South East Europe Energy Community
KEK	Kosovo Electricity Corporation
AEC	Albanian Energy Corporation
KEDS	Kosovo Electricity Distribution and Services
KESCO	Kosovo Electricity Supply Company
KfW	German Development Bank
CM	Council of Ministers
km	Kilometre
KOSTT	Transmission, System and Market Operators
KPSC	Public Services Regulatory Commission
kV	Kilovolt
kW	Kilowatt
OL	Overhead line
MAR	Maximum Allowed Revenues
MPA	Ministry of Public Administration
EPA	Energy Purchase Agreement
MESP	Ministry of Environment and Spatial Planning
MVA	Megavoltampere

MW	Megawatt
MW_{TH}	Thermal Megawatt
MWh	Megawatt hour
MED	Ministry of Economic Development
NARUC	National Association of Regulatory Utility Commissioners
DH	District Heating
SS	Substation
DSO	Distribution system Operator
TSO	Transmission System Operator
MO	Market Operator
PECI	Projects of Energy Community Interest
PG TSO KOSTT	Working Group for inclusion of KOSTT in ENTSO-E
RG CE	Regional Group of Continental Europe
RoR	Rate of Return
RAB	Regulated Asset Base
SCADA	Supervisory Control and Data Acquisition
SAIDI	System Average Interruption Duration Index;
SAIFI	System Average Interruption Frequency Index
TAP	Trans-Adriatic-Pipeline
TPP	Thermal Power Plant
TF	Taskforce
ECT	Energy Community Treaty
TR	Transformer
MW	Medium Voltage
LW	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
ERO	Energy Regulatory Office

EXECUTIVE SUMMARY

This report contains detailed information regarding ERO's activities for regulating the energy sectors, and gives an overall snapshot of the energy sector situation, and the level of services provided by energy enterprises in the energy market. Also, the report contains data gathered from energy enterprises on regular basis, and field monitoring of licenses. Following the entry into force of laws on energy sector, ERO is working toward drafting the regulatory framework within certain deadlines. Therefore, a number of rules are in the revision process, for which the harmonization procedure with the applicable laws has commenced, and comments from interested parties and the Energy Secretariat in Vienna are expected. The regulatory framework in the energy sectors and relevant energy laws will reflect the requirements of the Third European Union package in the energy field.

Liberalization of electricity market is reflected in the Market Liberalization Guide adopted in 2016 by the Board of ERO, which is of particular importance. Based on this guide, all customers connected to 220 kV and 110 kV voltages, after March 2017 will be supplied with unregulated tariffs. ERO, in addition to the existing supplier license, has issued two licenses for supply of electricity to other enterprises, based on criteria and procedures that ensure equal treatment and transparency in accordance with the legislation in force.

Based on ERO's legal obligations for developments in construction of new generating capacity from Renewable Energy Sources (RES), during 2016 were received a considerable number of decisions on granting the preliminary and final authorizations for construction of RES capacities.

One of the most important activities is setting electricity prices and tariffs for the energy sector, which for 2016 is approved by the Board of ERO. The Board decided to maintain the same tariffs and tariff structure for residential consumers in 2016, whereas for industrial and commercial customers has made lowering of tariffs from 7.17% to 8%, based on service costs for these categories of consumers. This reduction of tariffs applies to customers connected to voltage level of 220kV, 110 kV, 35 kV, 10 kV and customers connected to voltage level of 0.4 kV that belong to tariff group of commercial customers, as a necessity of eliminating sub-subsidizing between customer categories.

While applying its legal authority, during this year ERO has monitored licensed enterprises. The purpose of monitoring was to assess the level of fulfilling obligations deriving from relevant licenses and regulatory framework by the licensee, and identify gaps and issues that require solution in order to fulfil the obligations.

There was an increase of overall electricity production of 6.04% during 2016, compared to 2015. When compared to electricity balance of 2016, electricity production by generation units was in the amount of 99.05%.

In the recent years, invoiced electricity has had a continuous increase, more specifically there was a visible increase in collection. The level of collection compared to invoicing for 2016 was 96.85%, whereas the total, calculating consumers connected in the transmission network for which collection is 100%, the overall collection reaches 97%.

Technical losses in distribution according to the data sent by the DSO reach the value 13.04%, while in countries with developed networks these losses are at level from 5 to 7%. Commercial losses remain as concerns that are quite high, which account for 16.65% of total consumption in distribution. Commercial losses are a challenge that can not be afforded only by the improved method of KEDS management, but should be considered as a challenge to all institutions of society in general.

Investments in the transmission network have been focused on increasing transmission capacity, increased security and reliability of the transmission network, increasing the security of supplying the consumers with electricity, respectively on load support. The value of total investments in 2016 including the remaining investments from previous years is 28,000,000€.

During 2016 investments in the distribution network were mainly emergency investments and focused on the low voltage network, including overloaded transformers, without neglecting other necessary investments. The value of total investments made in distribution during 2016, including the remaining investments from previous years, is 23,645,000€.

It should be noted that KEK has not managed to carry out the capital investments projected at the level allowed by ERO for 2016. The total value of investments made by KEK is 11,000,000€.

In the carrying out and performance of duties and responsibilities prescribed by law, ERO, also this year, has been continuously assisted by international institutions, particularly from USAID, the World Bank and the Energy Community Secretariat.

1 ENERGY REGULATORY OFFICE

1.1 Description of the Energy Regulatory Office

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

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

1.2 Institutional Organization

ERO headquarters is in Pristine, Str. "Dervish Rozhaja" no. 12. ERO offices have enough space in order to ensure employees the best working conditions. ERO offices are located in a private facility, for which a rent is paid, therefore ERO has continuously asked for the Ministry of Public Administration to find a solution for the deployment of ERO at an appropriate state facility. ERO, also during 2016, has continued with these efforts through communications with the MPA.

1.3 Organizational Structure and Human Resources

The Energy Regulatory Office Board assessed that in order to comply with the legal obligations set under the Law on Energy Regulator, the ERO organizational structure should be adapted so as to function and exercise its legal and professional responsibilities. For this reason, ERO organizational structure is adjusted as necessary for efficient operation and to fulfil its responsibilities stipulated in the law on Energy Regulator.

During 2016, ERO hired new staff filling all vacancies. At the end of 2016, ERO had 31 members, and 2 positions in the Board remained unfulfilled.

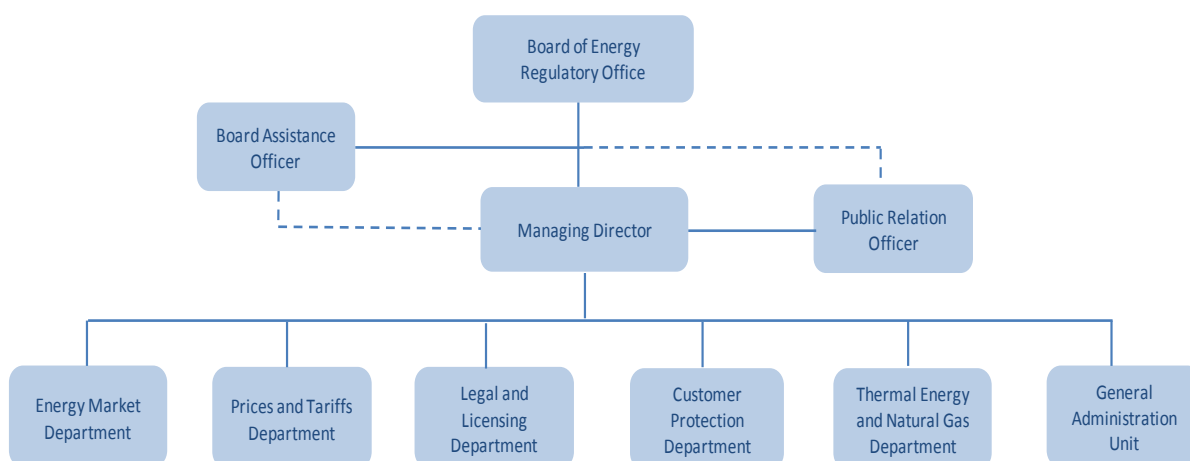


Fig. 1.1 Organizational Scheme of ERO

Brief description of organizational structure with job positions in 2016 is shown in the table below.

Tab. 1.1 Organizational structure with the job positions

Organisational positions	Positions	Employees	Vacancies
ERO Board	5	3	2
Executive Director	1	1	0
Public Relations Officer	1	1	0
Board Assistance Officer	1	1	0
Head of Administration Unit	9	9	0
Chief Financial Officer			
Procurement Manager			
Administration Officer			
Data Manager Officer			
English Language Translator			
Database Development Expert			
Receptionist			
Driver / Maintenance			
Head of the Legal and Licensing (LLD) Department	3	3	0
Legal Affairs and Monitoring Expert			
License Monitoring Analyst			
Head of the Pricing and Tariffs Department for (DPT)	4	4	0
Expert for Regulatory Affairs and Tariffs			
Tariffs and Prices Analyst			
Tariffs Structure Analyst			
Head of the Energy Market Department (EMD)	4	4	0
Power Systems Analyst			
Market Monitoring Analyst			
Power Supply and Market Structure Analyst			
Head of the Thermal Energy and Natural Gas Department (TNGD)	2	2	0
Thermal Energy Analyst			
Head of the Customer Protection Department (DCP)	3	3	0
Standards Performance Analyst			
Customer Protection Officer			
Total	33	31	2

In conformity with the legal obligations, ERO needs to increase the number of employees in order to address the additional obligations of the sector as well as requirements of the Third Energy Package and expected developments in the energy sector in Kosovo.

1.4 ERO Board

ERO Board consists of 5 members including the chairman, who are appointed by the Assembly of Kosovo with a term from 5 years. ERO Board is a decision making body for all matters under the 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. The Board states in addressing of all issues it handles, with decisions that are issued at the open meetings and announced in advance on the ERO official website.

In September 2016, the Board chairman's term has expired, whereas another member resigned from the position as Board member in October 2016. The position of Board chairman, in accordance with the Article 5 paragraph 2 and 3 of the Law on Energy Regulator, is exercised by the member who has the longest experience in capacity of the Board member, until the appointment of the new chairman, while two positions of Board members are vacant. On 31 December 2016 Energy Regulatory Office Board consisted of the following members:

Krenar Bujupi, Acting chairman of Board

Arsim Janova, member of Board

Besim Sejfiqaj, member of Board

The work plan for this year, as well, is based on the Strategic Plan of ERO 2013-2017. Activities of the ERO Board were oriented towards successful implementation of the powers and duties defined by the Law on Energy Regulator and objectives included in the work plan.

The Board is obliged to hold at least ten formal meetings a year, but it also convenes to address specific issues as well as informative and consultative meetings.

For the purposes of decision making, in accordance with the authority granted by the legislation in force, the ERO Board held regular meetings in which was informed, as well as it was discussed about the overall developments of the energy system in Kosovo. All materials with the explanations and information requested regarding the issues to be addressed for decision-making at the Board meetings are made available to the Board members by ERO departments.

During 2016, the ERO Board held seven (7) public discussion processes and a total 14 public meetings, in which were issued 126 decisions related to:

- Market Monitoring and activities in the energy sector;
- Liberalization of the energy market;
- Price Adjustment;
- Licensing of Energy Activities in Kosovo;
- Authorizing the construction of new power generation capacity from renewable sources;
- Consumer protection;

- Approval of rules, methodologies and other energy sector documents;
- Other issues within its responsibilities.

All approved and reviewed documents were initially subject to public discussion to include all parties involved in the decision-making processes.

All decisions issued in 2016 are published in the ERO official website.

The Board, for all activities, is supported by: Managing Director, administration and technical staff organized in 5 departments as follows:

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

In terms of professional qualifications, the Board this year has also targeted the employees' specialization in the relevant profiles within their responsibilities, through various training courses organized inside and outside the country.

1.5 ERO Departments

Legal and Licensing Department (LLD)

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

Energy Market Department (EMD)

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

Tariffs and Pricing Department (TPD)

Tariffs and Pricing Department is responsible for evaluation of tariff applications of the licensed enterprises and presents them to the Board for approval; 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 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 customers.

Thermal Energy and Natural Gas Department (TENGD)

Thermal Energy and Natural Gas Department is responsible for the review and implementation of 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 the integration of incentives and targets for efficiency. It also cooperates with other departments of ERO by providing support and technical expertise on issues related to thermal energy and natural gas.

Administration Unit (AU)

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

1.6 ERO funding

ERO is funded from the dedicated revenues, collected from fees of licensees pursuant to Article 24 of the Law on Energy Regulator.

ERO collects fees for:

- Initial and annual fees for licensing;
- Applications for issuance and modification of licenses;
- Issuance of certificates of origin;
- Reviewing of applications for authorization and licensing.

2 ACTIVITIES OF THE ENERGY REGULATORY OFFICE

2.1 Activities in developing the secondary legislation and energy market liberalization

In July 2016, the Assembly of Kosovo adopted new laws for energy sector, in compliance with the Third Energy Package legislation of the European Union. The adoption of these laws aims at aligning the legal framework with the third package, having as objective the effective and competitive establishment and functioning of the energy market.

ERO considers as important the supplement of these laws with other bylaws, a significant part of which is the responsibility of ERO and should be approved within the time limits set by law, enabling the creation of a competitive and efficient market to increase the security and quality of power supply in the country, as well as the integration of the electro-energetic system in the regional market.

In the process of review by ERO, but also awaiting comments by stakeholders and the Secretariat of the Energy Community in Vienna, there are 14 rules below mentioned for which procedures for compliance with the laws in force during 2016 have started:

- Rule on general conditions of electricity supply;
- Rule on the Resolution of Complaints and Disputes in Energy Sector;
- Rule on Authorization Procedure for Construction of new Generation Capacities;
- Rule on maximum allowed revenues of Transmission System and Market Operator;
- Rule on maximum allowed revenues of Distribution System Operator;
- Rule for the establishment of the Universal Service Supply income;
- Rule on Supplier of last resort;
- Rule on Support Scheme for renewable energy sources;
- Rule for the establishment of Certificates of Origin system for electricity produced from renewable sources;
- Rule on disconnection and reconnection of customers in the energy sector;
- Rule on taxes;
- Rule on licensing the energy activities in Kosovo;
- Rule on administrative measures and fines;
- Rule on confidential information;
- Principles of determining the tariff of use of the transmission system and connection taxes;

Actions undertaken during 2016 by ERO for market liberalization are as follows:

- ☑ Approval of the **Supplier Switching Rule**, which defines the respective roles of the market and the way of communication between the parties during the process of changing suppliers;
- ☑ The granting of licenses for electricity supply of companies “HEP-KS” LLC and “GSA” LLC;
- ☑ Approval of the Methodology for calculating the price of imbalances and compensation prices. This methodology determines the manner of calculating the price of energy imbalance of parties in the energy market in Kosovo in the absence of a competitive market;
- ☑ Approval of Regulatory Accounting Guidelines;
- ☑ Drafting and approval of guidelines for the unregulated tariff supply. Through this guide are defined the roles of the parties in the market in order to enable the supply of electricity at unregulated tariffs for consumers connected to the level of voltage 220 kV;
- ☑ Preparation of guidelines for market liberalization. This guide sets out the manner, conditions and timing of liberalization of the electricity market in Kosovo, the level of production and supply of electricity.

In addition to the documents mentioned above, ERO is in the process of establishing measures to increase security of supply and to protect consumers in a competitive market. This will involve the selection of last resort suppliers through an open, transparent and competitive process. For the first half of 2017, ERO has planned to issue the necessary procedural rules for selecting the last resort suppliers.

2.2 Key issues about the energy agreement implementation

The 2013 energy agreement signed between the Prime Minister of Kosovo and the Prime Minister of Serbia obliged KOSTT and EMS (Serbian TSO), within three months to sign a bilateral agreement for the operation in which KOSTT will be known as Transmission and Operator System of Kosovo. This will enable the integration of KOSTT in the regional mechanisms (ITC, the congestion management, etc.), and EMS will support KOSTT in the accession process to ENTSO-E.

In February 2014, after several meetings of the technical group of KOSTT experts and EMS mediated by ECS, was signed the framework agreement for cooperation in the operation of transmission systems between KOSTT and EMS under which the parties agree to steadily improve cooperation between them in all areas of system operation with the aim of establishing the Regulatory Area to be operated by KOSTT in accordance with the manual of ENTSO-E operation, and that the TSO of Serbia will support KOSTT in the accession process to ENTSO-E.

In September 2014, after several technical working group meetings of experts and OST of Serbia mediated by ECS, was signed the agreement between OST of Kosovo and OST of Serbia. This agreement sets out rules and regimes to be implemented by EMS and KOSTT to ensure safe operation of the transmission interconnection network. Under this agreement as of 1 January 2015, KOSTT and TSO of Serbia were supposed to operate with their transmission systems according to their responsibilities as independent regulatory areas. In this principle KOSTT will operate in

compliance with the applicable standards of Operational Manual of ENTSO-E and other conditions that ENTSO-E may determine.

On 25 August 2015, the Prime Minister of Kosovo and of Serbia reached a detailed agreement on energy with deadlines when should the trade party and energy supplier (Elektrosever) in the north of Kosovo be licensed, in accordance with the Brussels Agreement and Kosovo laws.

On 16 September 2015, in the plenary session RG CE admitted the proposal of EMS that the connection agreement with ENTSO-E to be conditioned with the licensing of Serbian supply company "Elektrosever" in the north of Kosovo.

On 1 October, 2015 was signed Connection Agreement, on condition imposed by EMS, between KOSTT and OST 30 in Continental Europe. Believing that the supply company will be registered and licensed in the deadline, the date of implementation of the connection agreement is scheduled for 30 November, 2015.

For the implementation of this agreement were held several meetings of different levels where have been defined steps to be taken by the parties, where the key condition for implementation has been that Serbian party should register the supply company in the northern part of Mitrovica under the Kosovo law.

Since the Serbian party has not fulfilled this obligation as agreed, registration and licensing of company has failed as well, was postponed the date of commencement of KOSTT operation as regulatory area. In order to start the implementation of the agreement, new deadlines were set (08 February 2016) for connection of KOSTT to ENTSO-E.

After the failure of these terms, ECS has sent letter to ENTSO-E to review the conditions in the agreement on connection to enable KOSTT the implementation of the agreement on connection.

Given all the above said, KOSTT, on 22 February, 2016 has once again asked for ENTSO-E to explore the possibility of removing the supplying company's licensing requirement from the Agreement on connection.

On 25 November 2016, a meeting was held in ENTSO-E between representatives of ENTSO, EC, ECS, KOSTT and EMS in order to find a technical solution to unblock the situation and enable the commencement of the implementation of the agreement on connection KOSTT - ENTSO- E and in accordance with the Framework agreement reached between KOSTT and EMS in 2014.

It is expected that in early 2017 RG CE will formulate a recommendation on the Agreement for connection KOSTT- ENTSO -E.

2.3 Construction of new generation capacities

Among the responsibilities vested to ERO under the legislation in force, it is to provide authorization for construction of new energy capacities. During 2016 there was an increase in the number of applications for authorization to construct new generation capacities submitted to ERO by various legal entities. 19 applications received require the construction of new generators and 12 requests for conversion of preliminary authorization to final authorization.

All applications for obtaining authorization to construct new generation capacities have been subject to analysis of compliance and correct completion of legal, administrative, technical and financial documentation, and supporting the application with other relevant evidence issued by relevant institutions related to the right of land use, environment, water use, connecting to the grid, etc.

2.3.1 Issuance of preliminary authorization

ERO during this reporting period has received several new applications for the construction of new generators from renewable energy sources. Applications are reviewed and evaluated by ERO and have been granted a preliminary authorization for construction of new generation capacities.

The following table shows the number of preliminary authorization issued by the Board of ERO in 2016.

Tab. 2.1 RES preliminary authorizations

Preliminary authorizations of RES	No. of issued decisions
Hydro Power Plant	15
Wind	3
Solar Panels/Photovoltaic	5
Total	23

The installed capacity of 23 generators to whom the preliminary authorization is issued is 162 MW, of which:

- 15 Preliminary authorization for hydropower of capacity 42.7 MW
- 3 Preliminary authorizations for wind generators of capacity 105 MW
- 5 Preliminary authorizations for solar panels generators of capacity 15 MW

The table below presents enterprises which have been issued with a preliminary authorization.

Tab. 2.2 Enterprises to which was issued Notice of Preliminary Authorization

No.	Legal Entity	Facility	Location	Installed capacity	Date of entry into
1	2 Korriku L.L.C.	Hydro Power Plant	HPP Soponica Municipality of Kaçanik	1.3 MW	28 Jan 2016
2	Eurokos JH L.L.C.	Hydro Power Plant	HPP Brodi I & HPP Brodi III Munic. of Dragash	5.76 MW	28 Jan 2016
3	Eurokos JH L.L.C.	Hydro Power Plant	HPP Restelica III. Municipality of Dragash	1.49 MW	28 Jan 2016
4	AFA Energy L.L.C.	Hydro Power Plant	HPP Kotlina 1 Municipality of Kaçanik	2.4 MW	28 Jan 2016
5	AFA Energy L.L.C.	Hydro Power Plant	HPP Kotlina 2 Municipality of Kaçanik	2.7 MW	28 Jan 2016
6	Triangle General Contractors INC	Hydro Power Plant	HPP Ma-Erenik Municipality of Junik	7.5 MW	28 Jan 2016
7	Triangle General Contractors INC	Hydro Power Plant	HPP Jasiq - Erenik Komuna e Junikut	5 MW	28 Jan 2016
8	Çeta –General Invest grup L.L.C.	Hydro Power Plant	HPP Lubinje-Reçan Municipality of Prizren	3.5 MW	28 Jan 2016
9	N.T.N. Renelual Tahiri L.L.C.	Hydro Power Plant	HPP Orqusha Municipality of Dragash	4 MW	23 Feb 2016
10	N.T.N. Renelual Tahiri L.L.C.	Hydro Power Plant	HPP Dragash Municipality of Dragash	3.45 MW	23 Feb 2016
11	Fidani –Water Energy L.L.C.	Hydro Power Plant	HPP Radoniqi Municipality of Gjakova	0.43 MW	19 May 2016
12	gEnCi L.L.C.	Hydro Power Plant	HPP Prizreni 9 Municipality of Prizren	1.938 MW	11 Nov 2016
13	gEnCi L.L.C.	Hydro Power Plant	HPP Prizreni 8 Municipality of Prizren	2.1 MW	11 Nov 2016
14	gEnCi L.L.C.	Hydro Power Plant	HPP Prizreni 4 Municipality of Prizren	2.83 MW	11 Nov 2016
15	Hidro Forca L.L.C.	Hydro Power Plant	HPP Soponica 2 Komuna e Kaçanikut	3 MW	11 Nov 2016
16	Sowi Kosovo L.L.C.	Wind Turbines	Wind Park Selac 1 Municipality of Mitrovica	35 MW	25 Nov 2016
17	Sowi Kosovo L.L.C.	Wind Turbines	Wind Park Selac 2 Municipality of Mitrovica	35 MW	25 Nov 2016
18	Sowi Kosovo L.L.C.	Wind Turbines	Wind Park Selac 3 Municipality of Mitrovica	35 MW	25 Nov 2016
19	VBS L.L.C.	Solar Panel	Madanaj – Rrypaj Municipality of Gjakova	3 MW	11 Feb 2016
20	Vita – Energy L.L.C.	Solar Panel	Madanaj – Rrypaj Municipality of Gjakova	3 MW	11 Feb 2016
21	Devolli Group L.L.C.	Solar Panel	Madanaj – Rrypaj Municipality of Gjakova	3 MW	21 Apr 2016
22	Energy Development grup L.L.C.	Solar Panel	Madanaj – Rrypaj Municipality of Gjakova	3 MW	17 May 2016
23	Solar Gate L.L.C.	Solar Panel	Llapashticë Komuna e Podujevës	3 MW	11 Nov 2016

Compared to 2015, where ERO issued only six (6) Preliminary Authorization, in 2016 we marked an increase of applications/requests for construction of new generators from RES, and ERO has issued twenty-three (23) preliminary authorizations with total installed capacity of 162.7 MW. These applications must be completed within the legal limits in order for ERO to issue final authorization to commence their construction.

Decisions on Notice of Preliminary Authorization stipulate that applicants have proved their eligibility for the construction of new generating establishments, nevertheless they have not yet met the other requirements relevant to the commencement of construction of new generation establishment. Such decisions oblige the applicants that within a period of one (1) year from the issuance of preliminary authorization, they must meet other legal requirements and make a written request in order to be granted with final authorization for construction.

Preliminary authorizations issued for solar/photovoltaic panels that are not within RES target determined in the Administrative Instruction No 01/2013 MED, are included in the Support Scheme as "pending" applications if any of the final authorizations eventually fails.

It is worth mentioning that upon issuance of preliminary authorization, all projects which are within the RES targets defined by AI 01/2013, are eligible to the Support Scheme and guaranteed sale of electricity with feed-in tariffs for the period specified with applicable legislation.

2.3.2 Applications under review by ERO

ERO has also received applications for being granted with an authorization for construction of new generation capacities, which are in the stage of the completion of applications. The list of applications, which are under the process of review, is shown below (see Table 2.3).

Tab. 2.3 Enterprises under the process of review for being granted with a decision on preliminary authorization

No.	Legal Entity	Facility	Location	Installed capacity	Application date
1	Hidro Line L.L.C.	Hydro Power Plant	HPP Kaçandoll Municipality of Podujeva/ Vushtrri	1.64 MW	08 Feb 2016
2	Edelweiss Energy L.L.C.	Hydro Power Plant	HPP Ura e Shenjtë Municipality of Rahovec	6.4 MW	15 Feb 2016
3	Drini i Bardhë J.S.C.	Hydro Power Plant	HPP Dobrusha Municipality of Prizren	9.9 MW	15 Feb 2016
4	EcoDri L.L.C.	Hydro Power Plant	HPP Radesha 1& 2 Municipality of Dragash	3.3 MW	11 Nov 2016
5	Hidro Forca L.L.C.	Hydro Power Plant	HPP Strazha Municipality of Kaçanik	1.08 MW	23 Dec 2016
6	PSHP Vërmica L.L.C.	Hydro Power Plant	HPP Vërmica Municipality of Prizren	480 MW	25 Nov 2015
7	Rimed L.L.C.	Hydro Power Plant	HPP Kuçisht Municipality of Peja	3.1 MW	23 Jul 2015
8	Benesa L.L.C.	Hydro Power Plant	HPP Lloçan Municipality of Deçan	2.075 MW	18 Sep 2014
9	Lumbardhi i Prizrenit L.L.C.	Hydro Power Plant	HPP Manastirica	2.340 MW	23 Sep 2014
10	Upwind International I, Branch in Kosovo	Wind Turbines	Wind Park Zatriç Municipality of Rahovec	35 MW	27 Oct 2016
11	Prishtina Energy L.L.C.	Wind Turbines	Wind Park Koznicë Municipality of Novobërda	34.5 MW	05 Dec 2016
12	Upwind International AG, Branch in Kosov	Wind Turbines	Wind Park Çiçavica Municipality of Drenas	51 MW	27 Aug 2013
13	Hig Energy SH.A.	Biomass	Prishtina 1 Municipality of Prishtina	13 MW	21 Oct 2016

2.3.3 Issuance of final authorization

ERO during 2016 reviewed applications for obtaining final authorization, along with complete documentation for converting the preliminary authorization into final authorization for construction of new generators.

The table below represents the number of Final Authorizations granted by the Board of ERO during 2016.

Tab. 2.4 Final Authorization for RES

Final authorizations from BRE	No. of issued decisions
Hydro Power Plants	8
Wind power	1
Solar Panels/Photovoltaic	3
Total	12

The installed capacity of generators authorized for construction by type of RES is 82 MW, of which:

- 8 Authorizations for hydropower plants 40.6 MW
- 1 Authorization for Wind Turbines 32.4 MW
- 3 Authorizations for solar panels 9.0 MW

The following table shows the enterprises that have been granted with final authorization for construction of new generators.

Tab. 2.5 Enterprises granted with final authorization for construction

No.	Legal entity	Facility	Location	Installed capacity	Final authorization issuance date
1	Matkos Group L.L.C.	Hydro Power Plant	HPP Sharri Municipality of Shterpce	6.45 MW	V-735-2015 28 Jan 2016
2	Matkos Group L.L.C.	Hydro Power Plant	HPP Brezovica Municipality of Shterpce	2.1 MW	28 Jan 2016
3	Matkos Group L.L.C.	Hydro Power Plant	HPP Shtërpce Municipality of Shterpce	5.032 MW	28 Jan 2016
4	Hidro Line L.L.C.	Hydro Power Plant	HPP Albaniku 2 Municipality of Mitrovica	3.55 MW	28 Jan 2016
5	Hidroenergji L.L.C.	Hydro Power Plant	HPP Lepenci 1 Municipality of Hani i Elezit	9.98 MW	28 Jan 2016
6	Hidroenergji L.L.C.	Hydro Power Plant	HPP Lepenci 3 Municipality of Kaçanik	8.5 MW	28 Jan 2016
7	Eurokos JH L.L.C.	Hydro Power Plant	HPP Brodi III Municipality of Dragash	4.7 MW	28 Jan 2016
8	N.N. Dilli - Com	Hydro Power Plant	HPP Bresana Municipality of Dragash	0.31 MW	28 Jan 2016
9	Air – Energy L.L.C.	Wind Turbines	Wind Park Kitka Municipality of Kamenica	32.4 MW	23 Jun 2016
10	Birra e Pejës J.S.C.	Panele Solare	Madanaj, Kusar Municipality of Gjakova	3 MW	03 Oct 2016
11	Solar Green Energy L.L.C.	Panele Solare	Novosellë Municipality of Kamenica	3 MW	03 Oct 2016
12	Frijo Food Kosovë L.L.C.	Panele Solare	Madanaj, Kusar Municipality of Gjakova	3 MW	03 Oct 2016

Compared to 2015, where ERO issued only one final authorization for the construction of a new generator with an installed capacity of 0.6 MW, this year were issued 12 final authorizations for construction of new generating capacities from RES with total installed capacity of 82 MW, which are expected to be built within a period of two (2) years pursuant to criteria under the Authorization.

2.3.4 Modification of Final Authorization

ERO during this year has received numerous requests for modification of Final Authorization for the construction of new generation capacities from RES. Such applications after being completed with relevant evidence issued by relevant institutions in Kosovo are assessed and reviewed by ERO, in accordance to the provisions of the Rule on Authorization Procedure.

The following table shows the enterprises which have been granted with final authorization for modification of the installed capacity for electricity generation from RES.

Tab. 2.6 Enterprises to which the Final Authorization has been modified

No.	Legal entity	Facility	Location	Installed capacity	Final authorization modification
1	Eurokos JH L.L.C.	Hydro Power Plant	HPP Brodi II. Municipality of Dragash	4.8 MW	31 Mar 2016
2	Kelkos Energy L.L.C.	Hydro Power Plant	HPP Deçan Komuna e Deçanit	9.8 MW	19 May 2016
3	Kelkos Energy L.L.C.	Hydro Power Plant	HPP Bellaja Komuna e Deçanit	8 MW	19 May 2016

Modification of Final Authorization of the enterprise "Eurokos JH" LLC is required for hydropower plant HPP "Brodi II" (Mlikë) for installing capacity of 3.89 MW authorized by Decision V-573-2013 of October 24, 2013, and modified by Decision V-805-2016 dated 31.03.2016 of the installed capacity 4.8 MW in Brod River, Municipality of Dragash, according to the Decision for modification of the decision No. 1782-2 / 11 -ZSP-621 for Water permit, dated the 23.08.2012, issued by the MESP, dated 29/01/2016. Also we modified the Final Authorization V-402-2012 dated 15 June 2012 issued

to the enterprise "KelKos Energy" SH.P.K. for HPP "Belaja" from initial installed capacity of 9.2 MW to the installation of capacity of 8.06 MW pursuant with Construction permit and Decision no. 1287/16 –ZSP -355 DU/16 on amending the Decision on Water Permit No. 1839/11 –ZSP-69/12, dated 09.02.2012, issued by the MESP date 24.03.2016, and for HPP "Deçan" from initial installed capacity of 8.4 MW to the installation of capacity of 9.8 MW under the Construction Permit and Decision no. 1287/16 –ZSP -355 DU/16 on amending the Decision on Water Permit No. 1839/11 –ZSP-69/12, date 09.02.2012, issued by MESP, dated 24.03.2016, at river Lumbardh, Municipality of Deçan. Such modifications are conducted pursuant to the applicable legislation criteria and requirements.

2.3.5 Entry into operation of generators from RES

During this year are implemented 6 projects from RES, of which 5 for construction of hydropower plants and one generator with solar / photovoltaic panels, with a total installed power of 29.65 MW. All generators have been finalized and are now in operation.

- 5 Hydropower Plants 29.15 MW
- 1 Solar Park 0.5 MW.

The following table shows the enterprises which are in operation for the production of electricity from RES.

Tab. 2.7 Enterprises entered into operation

No.	Legal Entity	Facility	Location	Installed capacity	Date of entry into operation
1	Kelkos Energy L.L.C.	Hydro Power Plant	HPP Bellaja Municipality of Deçan	8 MW	01 Apr 2016
2	Kelkos Energy L.L.C.	Hydro Power Plant	HPP Deçan Municipality of Deçan	9.8 MW	01 Apr 2016
3	Eurokos JH L.L.C.	Hydro Power Plant	HPP Brodi II. Municipality of Dragash	4.8 MW	01 Jan 2016
4	Hidro Line L.L.C.	Hydro Power Plant	HPP Albaniku 3, Selac Municipality of Mitrovica	4.267 MW	30 Jan 2016
5	Eurokos JH L.L.C.	Hydro Power Plant	HPP Restelica 1&2 Municipality of Dragash	2.28 MW	01 Dec 2016
6	Onix SPA L.L.C.	Solar panels	Banja e Pejës Municipality of Istog	0.5 MW	01 Jul 2016

2.4 Licensing of energy activities

During 2016 ERO received applications for licensing of power supply activity and import, export and transit of electricity energy activities. Any application for a license has been subjected to analysis of correct compliance and completion of the legal, administrative, financial, technical documentation and obtaining of relevant permits from other institutions.

2.4.1 Licensing of electricity supply activities

ERO based on the legal provisions in force, having considered all the necessary documentation, on October 14, 2016 has licensed the enterprise "HEP - KS SH.P.K", and on 11 November 2016, and licensed the enterprise "GSA ENERGY" LLC for electricity supply activity for a period of five (5) years. During 2016, representatives of the enterprise "FUTURE ENERGY TRADING" LLC expressed their interest in obtaining a license for such activity, the same on June 24, 2016 submitted to ERO an application attached with evidence, but have not yet submitted some other evidence which are

considered necessary to carry out this activity in Kosovo. After submission of this evidence, ERO will take a decision on licensing of this enterprise as well.

2.4.2 Licensing of electricity import, export and transit activity

During 2016 ERO received eleven (11) applications from enterprise requesting the licensing of electricity import, export and transit activities, namely wholesale (trade) supply of electricity. ERO reviewed all applications of these enterprises, whereby nine (9) are licensed, while two applications are in the licensing process.

The ERO licensed enterprises for this activity are presented in Table 2.8 as follows:

Tab. 2.8 Licensed enterprises for electricity import, export and transit

No.	Enterprise name	Description of licensed activity	License number	Address, licensee's headquarter	License validity
1	"ENERGY FINANCING TEAM" L.L.C.	Import, export and transit of electricity	ZRRE/Li_44/15	Address: Fehmi Agani 1/16, Prishtina, Republic of Kosovo	28.01.2016-27.01.2021- License Issuance
2	"AXPO KOSOVO" L.L.C.	Import, export and transit of electricity	ZRRE/Li_46/15	Address: Pashko Vasa No. 18, Prishtina, Republic of Kosovo	28.01.2016-27.01.2021- License Issuance
3	"EDS International KS" L.L.C	Import, export and transit of electricity	ZRRE/Li_47/15	Address: Pejton Mujo Ulqinaku No. 5 ap 4, Prishtina, Republic of Kosovo	31.03.2016-30.03.2021- License Issuance
4	"GSA ENERGI" L.L.C.	Import, export and transit of electricity	ZRRE/Li_51/16	Address: Xheladin Hana, Obj.35/15, Prishtina, Republic of Kosovo	19.05.2016-18.05.2021- License Issuance
5	"PAN INTERTRADE" L.L.C.	Import, export and transit of electricity	ZRRE/Li_45/15	Address: Afrim Loxha, Lagjja Gjinaj, Prishtina, Republic of Kosovo	19.05.2016-18.05.2021- License Issuance
6	"PETROL TRADE SLOVENIJA" L.L.C.	Import, export and transit of electricity	ZRRE/Li_53/16	Miradi e Epërme, F.Kosovë, Republic of Kosovo	23.06.2016-22.06.2021- License Issuance
7	"FUTURE ENERGY TRADING" L.L.C.	Import, export and transit of electricity	ZRRE/Li_52/16	Lagjja Kalabria, A1, CII, No. 25, Prishtina, Republic of Kosovo	23.06.2016-22.06.2021- License Issuance
8	"EnergoSupplier" L.L.C.	Import, export and transit of electricity	ZRRE/Li_54/16	Rilindja, Veternik, Prishtina, Republic of Kosovo	23.06.2016-22.06.2021- License Issuance
9	ENERGY FINANCING GROUP AD - Branch office in Kosovo	Bulk supply (trade) of electricity	ZRRE/Li_41/15	Dardania SU/1/6, H-1-8, 10000 Prishtina, Republic of Kosovo	14.10.2016-13.10.2021 - License Issuance

2.4.3 Licensing of electricity production activity

During 2016, ERO has extended the license for the production of electricity from TPP Kosova A, while enterprise applications "KelKos Energy" L.L.C (HC Decani& HC Belaje) are in the process.

2.5 Annual and long-term balance of electricity and thermal energy

Pursuant to old law on energy (no. 03/L-184), MED has been responsible for approving energy balances. After the amendment of the energy laws in 2016 the responsibility on balances, in accordance with Article 8 of the Law on Energy (no. 05/L-081), passes to ERO. This includes annual and long-term balances (10 years) of electricity, thermal energy and natural gas. Also according to the law, the obligations of systems operators are defined. Annual and long-term balance approved by ERO shall be published on the website.

Based on legal requirements, the Board of Energy Regulatory Office has approved:

- Annual balance of electricity;
- Annual balance of thermal energy;
- Long-term balance of electricity; and
- Long-term balance of thermal energy

Annual balances have been approved separately, whereas were published as a single document.

Since Kosovo does not have an organized system of natural gas, respective balances for natural gas are not prepared.

These documents have been prepared in accordance with the Law no. 05/L-081 on Energy (Article 8), and methodology for the preparation of electricity balances and contain:

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

The purpose of these documents is to inform all interested parties to forecast energy demand for 2017, respectively 2017 to 2026. Documents are published on ERO's website www.ero-ks.org.

2.6 ERO's activities in the field of pricing regulation

According to the Law on Energy Regulator and rules for determining prices, ERO is the only responsible authority for determining the Maximum Allowed Revenue (MAR) and tariffs for regulated activities carried out in the energy sector. Pursuant to this legal obligation, one of the main activities of the ERO in 2016 has been the annual adjustment process to MAR and review applications for new tariffs by the licensees in the energy sector, including manufacturing activity, transmission, distribution and public supply of electricity for tariff customers and licensees in the thermal energy sector.

ERO throughout the whole review process has given a special emphasis on public consultation. It also includes the publication of documents on the website as follows:

- Consultation Report for the maximum revenue of generation;
- Consultation Report on wholesale energy purchases;
- Consultation Report - Calculation of Maximum Allowed Revenues of KOSTT;
- Consultation Report - Calculation of Maximum Allowed Revenues of KEDS;

- Consultation Report - Calculation of the maximum allowed revenue of the Public Supplier;
- Consultation Report - Methodology for the calculation of the incentive tariffs for electricity from wind plants and small hydro power plants technology;
- Rule on determining the pricing of thermal energy;
- Regulatory Report for determining the allowed revenues for Pristine District Heating Termokos JSC for the heating season 2016-2017.

Public meetings and direct discussions were also held with licensees and other stakeholders.

2.6.1 Tariffs for regulated generators (KEK JSC)

Review of regular MAR adjustment and setting of tariffs for 2016/2017 was made in accordance with the Rule on Generation Prices. The adjustment process has been started by KEK submitting the application package to ERO together with accompanying documents. Through its application, KEK has requested revenues of 169.4 million euro for 2016.

After the application analysis and evaluation of components operating expenses and capital expenditures and intensive communication with KEK, ERO has prepared a Consultation Report to generate maximum revenues, which report has been subject to public discussion.

After reviewing all relevant documents, ERO Board in its session of March 31, 2016 has issued the following decisions:

- V_797_1_2016, for approval of the Maximum Allowed Revenues for KEK JSC;
- V_801_2016, for approval of tariffs for electricity generated from KEK JSC.

ERO Board has approved revenues for KEK from 147.27 million euro or 22.13 million euro less from the KEK request for 2016, but compared with 2015 is higher for 7.17 million euro. The revenues from 147.27 million euro are estimated by ERO as sufficient to guarantee a stable operation and financial liquidity for KEK.

In order to cover the maximum allowed revenues, ERO based on the methodology of tariff setting for regulated generators has approved tariffs for KEK.

The tariff structure of KEK consists of energy tariffs and tariffs for capacity which applied as of 1 April 2016. The KEK tariff structure is presented in the table below.

Tab. 2.8 Energy and capacity tariffs for KEK generation

Tariff elements	Unit	Tariff
Electricity Tariff	€/M W h	8.32
Capacity Tariff	€/M W	19.83
The Average Tariff	€/M W h	28.15

The KEK revenues for the relevant tariff year are collected under the agreement for the sale of electricity with the Public Supplier (KESCO) through regulated tariffs set by ERO.

It should be noted that the new legal framework requires from manufacturers to offer all their capacity in the organized market and all suppliers to buy electricity on the market at unregulated prices, meaning that after 31 March, 2017, ERO does not have the responsibility to regulate generation prices.

2.6.2 Tariffs for Transmission Use of System

Review of regular adjustments of MAR and tariff setting for the tariff year 2016/2017 was made in accordance with Rule on Pricing of Transmission System and Market Operator (TSO/MO). ERO has received the request of KOSTT for revenues in the amount of € 25.7 million for the tariff year 2016/2017.

After the application analysis and evaluation of operational expenditure components and capital expenditures, as well as intensive communication with KOSTT, ERO it has prepared a consultation report on the maximum allowed revenues of the TSO/MO which placed it for public consultation.

After reviewing all relevant documents, ERO Board in its session of 31 March, 2016, has issued the following decisions:

- V_798_2016, for approval of the Maximum Allowed Revenues for KOSTT;
- V_802_2016, for approval of tariffs and charges for TSO/MO.

ERO Board has determined the KOSTT revenues amounting to € 22.4 million or € 3.9 million less than the KOSTT request, but compared with 2015 is lower for 3.4 million euro. Reduction of incomes is a result of non-execution of expenditures for auxiliary services allowed in 2015, stemming from a legal obligation of the TSO/MO to perform functions given with license. The reason for the non-execution of these costs is the inability of KOSTT to begin operating as a regulatory area.

The following table shows the structure of TSO/MO tariffs applied from 1 April, 2016.

Tab. 2.9 Tariffs for the Transmission System Operator (KOSTT)

Tariff group	Tariff element	Unit	Tariff
Generation connected to transmission	System Operator Tariff	€/M W h	0.526
	Market Operator Tariff	€/M W h	0.041
Generation connected to distribution	System Operator Tariff	€/M W h	0.234
	Market Operator Tariff	€/M W h	0.041
Supply	Tariff TNUOS 400/220 kV	€/kW	7.464
	Tariff TNUOS110 kV	€/kW	14.589
	System Operator Tariff	€/M W h	0.473
	Market Operator Tariff	€/M W h	0.037

2.6.3 Tariffs for Distribution Use of System

ERO has received from KEDS the request for revenues for the relevant tariff year 2016/2017 in the amount of 83.7 million euro. After the application analysis and assessment of operating expenses and capital expenditures components, as well as, intensive communication with KEDS, ERO has prepared a consultation report for MAR Operator Distribution System which was subject to public consultation.

After reviewing all relevant documents, ERO Board in its session of 31 March, 2016 has approved the Maximum Allowed Revenues and charges by decisions:

- V_799_2016 , for approval of the Maximum Allowed Revenues for the DSO;
- V_803_2016, for approval of tariffs for use of the Distribution Network.

ERO Board has determined KEDS's revenues in the amount of € 75.6 million or 8.1 million euros less than the request of KEDS. Approval of revenues by the ERO at this level is as the result of:

- Application of the efficiency factor for operating and maintenance costs of 5%;
- Application of the target to reduce losses by ERO;
- Carrying out the unregulated revenues by KEDS such as: new connections, rental of assets, using the DSO's network by IPKO and Kujtesa operators etc.

In order to cover the allowed revenues, ERO based on the Methodology of Setting Tariffs for Distribution Network Use has approved tariffs for KEDS. The following table shows the tariff structure for DSO applied from 1 April, 2016.

Tab. 2.10 The structure of tariff for DSO

Tariffs for customers connected to DSO		
Voltage level	Unit	Tariff
35 kV	€ c/kW h	1.37
10 kV	€ c/kW h	1.64
0.4 kV	€ c/kW h	2.46

Tariffs for use of the distribution system established by ERO are charged to users of the distribution system by the DSO based on the voltage level.

2.6.4 Electricity tariffs for final customers

After evaluating the applications by the licensees, ERO board via V_800_2016 decision, has determined the revenues of 244.1 million euro, including the revenues of KEK, KOSTT, KEDS and KESCO, which will be collected from customers regulated through tariffs approved by ERO.

ERO Board has decided to maintain the same tariffs for household customers and the same tariff structure for 2016, and has made a lowering from 7.17% to 8% on tariffs for industrial and commercial customers, based on service costs for these customer categories. This lowering of tariffs applied to customers connected to voltage level of 220 kV, 110 kV, 35 kV, 10 kV and customers connected to voltage level of 0.4 belonging to tariff group of commercial customers. Lowering of tariffs for industrial and commercial customers has come due to the need to eliminate cross-subsidizing between customer categories.

Tariffs reflect the time of electricity use by customers (day-night tariff, seasonal summer-winter tariff) that encourage the efficient use of energy and are good mechanism for managing demand in order to shift a portion of consumption from high to lower consumption.

Block tariff structure for household customers, in addition to the effect on the efficient use of electricity, has a key role in protecting customers with low incomes by providing affordable electricity prices.

The structure of the electricity retail tariffs for tariff regulated customers approved by the Board of ERO upon the decision V_804_2016 applied from 1 April, 2016 is shown at table 2.12.

Tab. 2.11 The electricity retail tariff structure for regulated customers

Tariff group	Voltage level of supply	Tariff element	Unit	Time-of-day	ETR10	
					High season	Low season
					1 October - 31 March	1 April - 31 September
0-1	220kV	Standing (customer) charge	€/customer/month		184.69	
		Standing (demand) charge	€/kW /month		15.09	
		Active energy (P), of which	€/kW h		2.27	
0-2	110kV	Standing (customer) charge	€/customer/month		92.35	
		Standing (demand) charge	€/kW /month		6.16	6.16
		Active energy (P), of which	€/kW h	High tariff	7.22	2.14
			€/kW h	Low Tariff	3.00	1.75
		Reactive energy (Q)	€/kVArh		0.00	0.00
		1	35kV	Standing (customer) charge	€/customer/month	
Standing (demand) charge	€/kW /month				6.40	6.40
Active energy (P), of which	€/kW h			High tariff	7.48	3.24
	€/kW h			Low Tariff	3.96	2.92
Reactive energy (Q)	€/kVArh				0.73	0.73
2	10kV	Standing (customer) charge	€/customer/month		5.05	
		Standing (demand) charge	€/kW /month		5.51	5.51
		Active energy (P), of which	€/kW h	High tariff	8.38	3.74
			€/kW h	Low Tariff	4.52	3.40
		Reactive energy (Q)	€/kVArh		0.73	0.73
3	0.4 kV Category I (large reactive power consumers)	Standing (customer) charge	€/customer/month		2.86	
		Standing (demand) charge	€/kW /month		3.23	3.23
		Active energy (P), of which	€/kW h	High tariff	9.36	5.20
			€/kW h	Low Tariff	5.90	4.90
		Reactive energy (Q)	€/kVArh		0.73	0.73
4	0.4kV Category II	Standing (customer) charge	€/customer/month		3.24	
		Active energy (P)	€/kW h	Single tariff	11.53	7.46
		Active energy (P), of which	€/kW h	High tariff	13.88	9.09
			€/kW h	Low Tariff	6.94	4.54
5	0.4kV (domestic 2-rate meter)	Standing (customer) charge	€/customer/month		2.50	
		Active Energy (P) for consumption:				
		<200kW h/month (First block):	€/kW h	High tariff	5.55	3.99
			€/kW h	Low Tariff	2.79	1.99
		200-600kW h/month (Second block)	€/kW h	High tariff	7.70	5.51
			€/kW h	Low Tariff	3.86	2.76
		>600 kW h/month (Third block):	€/kW h	High tariff	11.17	8.00
€/kW h	Low Tariff	5.58	4.01			
6	0.4kV (domestic, 1-rate meter)	Standing (customer) charge	€/customer/month		2.50	
		Active Energy (P) for consumption:				
		<200kW h/month (First block):	€/kW h	Single tariff	4.96	3.54
		200-600kW h/month (Second block)	€/kW h	Single tariff	6.86	4.91
		>600 kW h/month (Third block):	€/kW h	Single tariff	9.95	7.14
7	0.4kV (domestic unmetered)	Assessed consumption:				
		<200 kW h/month	€/customer/month		25.75	
		200-600 kW h/month	€/customer/month		46.60	
		>600 kW h/month	€/customer/month		78.53	
8	Public lighting	Standing (customer) charge	€/customer/month		3.50	
		Active Energy (P) for consumption:	€/kW h	Single tariff	10.09	10.09
High Tariff applies 07:00-22:00 during the High Season and 08:00-23:00 during the Low Season.						
Customer will be charged with reactive energy above allowed cos(Φ)=0.95						

2.6.5 Thermal energy tariffs

With the aim of developing and completing the regulatory framework and the reflection of current and projected changes in the thermal energy sector, the Rule on setting thermal energy prices was drafted during 2016 and approved by the ERO Board on 15 July 2016.

This Rule, inter alia:

- Defines the basis and methodology for calculating maximum allowed thermal energy revenues and tariffs;
- Establishes the procedures for application lodging, review, adjustment and approval of tariffs in the regulated thermal energy sector.

A mode for calculating maximum allowed thermal energy revenues and tariffs was developed for purposes of implementing this Rule, namely the methodology for calculation of maximum allowed thermal energy revenues and tariffs.

In accordance with legal provisions, ERO sets maximum allowed thermal energy revenues and tariffs based on the tariff setting methodology.

To ensure a successful tariff review, ERO has carried out a tariff review process by organizing information meetings or other interactive forms with thermal energy companies and other relevant stakeholders aimed at explanation of the Rule on setting thermal energy prices and of main aspects related to the tariff review process.

Pursuant to the Rule on Setting Thermal Energy Prices, ERO commenced the tariff review process on 1 July 2016 by issuing a notice on the review of thermal energy tariffs, subsequent to which thermal energy companies submitted their application packages and regulatory reports. The tariff review process for 2016/2017 consisted of two phases:

1. Definition of maximum allowed revenues (MAR) included:
 - a. Assessment and identification of allowed operating costs;
 - b. Assessment and identification of depreciation;
 - c. Definition of allowed return in RAB (allowed company profit);
 - d. Assessment and definition of allowed cost for network losses.
2. Tariff calculation based on defined MAR and on thermal energy supply projections, thermal capacity and consumer heating surface.

ERO drafted the Regulatory Report: Preliminary Evaluations on Definition of Maximum Allowed Revenues and submitted it for public consultation on 20 September 2016.

On 4 October 2016, the ERO Board held a public session, where it presented the key points of the Regulatory Report and its evaluations related to setting MAR and thermal energy tariff levels. Interested parties had the opportunity to ask questions and provide their comments on these evaluations and obtained the relevant answers and explanations.



Fig. 2.1 Public session for reviewing Maximum Allowed Revenues for Pristine City District Heating Company "Termokos" JSC for the season of 2016/2017

On 14 October 2016, after reviewing all relevant documents, the ERO Board issued the following decisions:

- V_847_2016 on approval of Maximum Allowed Revenues for the City district Company Termokos JSC for the season of 2016/2017;
- V_848_2016 on approval of thermal energy tariffs for final customers of the City district Heating Company Termokos JSC for the heating season of 2016/2017;
- V_849_2016 on approval of thermal energy tariffs for final customers of the City district Heating Company Gjakova JSC for the heating season of 2016/2017.

The new thermal energy tariffs of CDH Termokos is decided to be on average 5% lower than in the previous season; more precisely, they have been lowered for around 7% for household customers and 3% for commercial and institutional customers. The ERO Board has decided to maintain the previous season tariffs for CDH Gjakova.

The structure of thermal energy tariffs for CDH Termokos and CDH Gjakova is shown below.

Tab. 2.12 Thermal energy tariffs – season of 2016/2017

Thermal Energy Tariff - Season 2016/2017					
Tariff components with measurements	Unit	DH Termokos		DH Gjakova	
Thermal Capacity Monthly Tariff (fixed component)	[€/kW /month]	0.93		0.91	
Thermal Energy Supply /Consumption Tariff (variable component)	[€/MWh]	41.47		58.76	
Tariff components without measurements	Unit	Residential customers	Commercial and institutional customers	Residential customers	Commercial and institutional customers
Thermal Capacity Monthly Tariff (fixed component)	[€/m ² per month]	0.11	0.15	0.09	0.12
Thermal Energy Supply /Consumption Tariff (variable component)	[€/m ² per month]	0.67	0.82	0.88	1.27

2.7 Setting feed-in tariffs for electricity produced from renewable energy sources

Feed-in tariffs are a mechanism used to encourage investment in electricity production from renewable sources. Such tariffs are applied in developing and developed countries (EU, USA and wider).

Based on the Law No. 05/L – 081 on Energy, the Ministry of Economic Development (MED) is responsible for setting targets on RES energy. Based on these responsibilities, MED issued the Administrative Instruction 01/2013, which sets out RES targets as shown below.

Tab. 2.13 Set targets for RES by 2020

RES Target	
RES	M W
Wind	150.00
Photovoltaic	10.00
Hydro Power Plants	240.00
Biomass	14.00

In order to achieve the targets set by MED, ERO sets feed-in tariffs for electricity generated from RES. Based on the feed-in tariff setting methodology and on the public consultation held in May 2016, ERO set the feed-in tariff levels for energy generated from wind and water sources. This methodology considered investment costs, operating costs, return on equity and other relevant data necessary to calculate the feed-in tariffs.

ERO has revised feed-in tariffs for wind energy, given the fact that so far we do not have satisfactory development of renewable energy projects from this source. After analyzing all the factors, ERO has concluded that the current support scheme for wind energy is not sufficiently attractive to attract investors and as such must undergo some changes. ERO has changed the duration of the wind Energy Purchase Agreements (EPAs) wind from 10 years to 12 years, while the price remains the same at 85 €/MWh.

Considering the small number of implemented projects for hydropower plant energy production, ERO has made changes to the support scheme. The approved price for HPPs is 67.5 €/MWh from 63.3 €/MWh previously, whereas the EPA term remains the same at 10 years.

The following table shows feed-in tariffs for electricity production using RES, by type, which are approved by the ERO Board through Decision No. V_810_2016.

Tab. 2.14 RES feed-in tariffs by technology

Feed-in tariffs applicable to RES	
RES	€/M W h
Wind	85.00
Photovoltaic	136.40
Hydro Power Plants	67.47
Biomass	71.30

2.8 Market monitoring

The monitoring of licensees is conducted in accordance with ERO's responsibilities set out by the Law No. 05/L – 084 on the Energy Regulator. The following licensed energy companies were subject to monitoring in 2016: Kosovo Energy Corporation (KEK), Operator of the Transmission System and Market Operator (KOSTT), Distribution System Operator (KEDS), Public Supplier (KESCO) and KELKOS. Their monitoring was performed based on preliminary plans and organized in such a way as to ensure continuous monitoring of the results of market participants electricity and consisted of the following main areas: Fulfillment of license conditions with special emphasis on:

- i) compliance with market rules,
- ii) periodical reporting as defined in the Reporting Manual, and
- iii) adherence to legal obligations and implementation of ERO rules and decisions.

The monitoring helped to:

- a) Assess the implementation level of obligations arising from relevant licenses and regulatory framework by the licensees;
- b) Identify gaps and issues to be resolved to ensure implementation of obligations.

As a result of this monitoring, ERO has planned activities, in terms of determining specific requirements and guidelines for licensees and concrete measures to be undertaken by each party in order to eliminate gaps and resolve identified issues.

The data collected during monitoring, but also those reported in other forms and which are quite complex, are addressed in a comprehensive manner from a legislative biased, financial and technical perspective, including their verification and a comparative analysis. The monitoring reports are published on ERO's website www.ero-ks.org.

2.8.1 Monitoring of electricity interruptions

In relation to electricity interruptions, ERO has set supply and service quality standards to be met by licensees, with special emphasis on consumer information about electricity interruptions, both planned and unplanned.

Planned interruptions are the result of planned works for purposes of planned repairs and maintenance and reconstructions in the electricity transmission or distribution network. All customers who are affected by these outages must be notified at least 24 hours in advance, including the time of the outage and its duration. Such notices are made through national newspapers, TV stations, local radio stations and operator websites.

The increased number of consumer complaints regarding power outages was a sufficient indication for ERO to begin, pursuant to its responsibility under Articles 55 & 56 of the Law No. 05/L – 084 on the Energy Regulator, commence inspection and investigation of the licensee KEDS for planned outages of the distribution network for maintenance purposes. This inspection was undertaken in late October 2016 by a working group established by the ERO Board. The Working Group initially prepared a preliminary report to the ERO Board presenting irregularities in connection with the planned maintenances process of KEDS. After reviewing the preliminary report, the Board decided to temporarily suspend the planned maintenance of KEDS until completion of the full inspection of

this process.

ERO's working groups has identified the following irregularities during inspection+:

- a) Deterioration of electricity supply due to planned interruptions under the pretext of regular maintenance which in most cases are not implemented;
- b) Unreasonable time period of interruptions, especially during 16: 00-20: 00 and the duration of four hours for each maintenance, regardless of the nature of work;
- c) Frequent interruptions of the same exits within a month without any technical reason;
- d) Inadequate description of maintenance, i.e., in most cases, the scheduled maintenance is described in general terms - Revision;
- e) Inadequate planning of maintenance teams (same team assignment for maintenance and failures);
- f) Inconsistency between plans submitted to ERO and those published by KEDS.

The final inspection report was presented to the ERO Board in the public meeting held in December 2016. After reviewing the report, the ERO Board decided to uphold the temporary measure of suspending planned maintenance, except for essential maintenance for system safety, and to submit the report to KEDS for commenting.

The ERO Board, after analyzing all the documentation including the explanations by KEDS, will decide on measures during 2017 in accordance with legal provisions.

2.9 Monitoring the construction of new generation capacity

During this year, ERO conducted field monitoring of enterprises which have been issued final authorization for the construction of electricity generating capacity.

In May 2016, ERO representatives conducted field visits to 12 locations to watch closely the flow and dynamics of the implementation of projects under implementation, the construction phases, the values of conducted investment up to that time and other relevant issues. In the locations mentioned above 11 hydropower plants and one solar park are under construction with a total installing capacity of 77 MW.

The monitoring covered all the works that are being carried out by Hydroenergy company LLC which has been authorized to construct HPP Lepenci 3 with an installed capacity of 9.98 MW in Lepenc River, Municipality of Hani i Elezit and HC Lepenci 1 with an installed capacity of 8.5 MW in Lepenc River, Municipality of Kaçanik. Based on field information, the construction of these hydropower plants will be completed within the legal timeline set out in the Rule on Authorization Procedure.

Below are some photographs taken during field monitoring of HPP construction.



Fig. 2.2 HPP construction phase

ERO also monitored the works that are being carried out by Matkos Group company LLC, which has been authorized to construct HPP Brezovica with installed capacity of 2.01 MW, HPP Sharri with installed capacity of 6.4 MW and HC Strpce with installed capacity of 5031 MW in Lepenc River, Municipality of Strpce. Based on field information, the construction of these hydropower plants will be completed within the legal timelines.

The following pictures show HPP Brezovica in the construction process.



Fig. 2.3 Construction phase of HPP Brezovica

In addition, ERO monitored the field works that are being carried out by Hidro Line company LLC, which has been authorized to construct HPP Albaniku III with installed capacity of 4.267 MW -- which is complete and already generating -- and HPP Albaniku II with installed capacity of 3.55 MW in the Municipality of Mitrovica. Based on field information, the construction of HPP Albaniku II has also commenced and is expected to be completed within the legal timelines.

The picture below shows finalized HPP Albaniku III.



Fig. 2.4 Construction phase of HPP Albaniku III

Furthermore, ERO monitored the field works that are being carried out by Eurokos JH company J.S.C, which has been authorized to construct HPP Brodi 2 with installed capacity of 4.8 MW and HPPs Restelica 1 & 2 with installed capacity of 2.28 MW in the Municipality of Dragash. These HPPs are finalized and operational.

The pictures below show HPP Brodi 2 and HPPs Restelica 1&2.



Fig. 2.5 Pictures of HPPs Brodi 2 and Restelica 1&2.

ERO also monitored the implementation of works of Kelkos Energy Company LLC, which has been authorized to construct HPP “Belaje” with installed capacity of 8.01 MW and HPP Deçan with installed capacity of 9.8 MW in the Municipality of Deçan, which are already finalized and operational. HPP Lumbardhi II with installed capacity of 5.5 MW is under construction and it will be finalized within legal timelines.

The pictures below show HPP “Belaje” and HPP “Deçan”.



Fig. 2.6 Picture of HPP Belaje and Deçan

Finally, ERO monitored the field works that are being carried out by ONIX SPA JH Company LLC, which has been authorized to construct a solar park with installed capacity of 0.5 MW at Banja e Pejës, Municipality of Istog. This generator has been finalized and is operational.

The solar/photovoltaic park is shown in the picture below.



Fig. 2.7 Picture of solar park ONIX SPA JH

2.10 ERO activities in the area of customer protection

Based on the Law No. 05/L – 084 on the Energy Regulator, ERO has the authority to resolve customer's complaints against licensees and disputes between licensees. The main responsibility of ERO consists of review and resolution of all complaints and requests submitted to ERO by customers, licensees and various institutions.

The number of complaints submitted to ERO during 2016 is about 16% greater than the number of complaints received in 2015. In 2016, 281 written complaints were received, while the number of complaints received in 2015 was 235. ERO has also provided support through information, and explanations verbally and via e-mail and telephone for all energy consumers.

The number of complaints received by customer category is shown in Table 2.16.

Tab. 2.15 Customer complaints by category, 2016

Customer complaints by categories	Number	Percentage [%]
Residential customer	235	83.63
Commercial customer	44	15.66
Industrial customer	2	0.71
Total	281	98.73

Out of total received complaints, 180 or 64% were reviewed. ERO decided in customers' favor in 117 complaints or 68.82%, whereas it rejected 53 customer complaints or 31.18% as ungrounded.

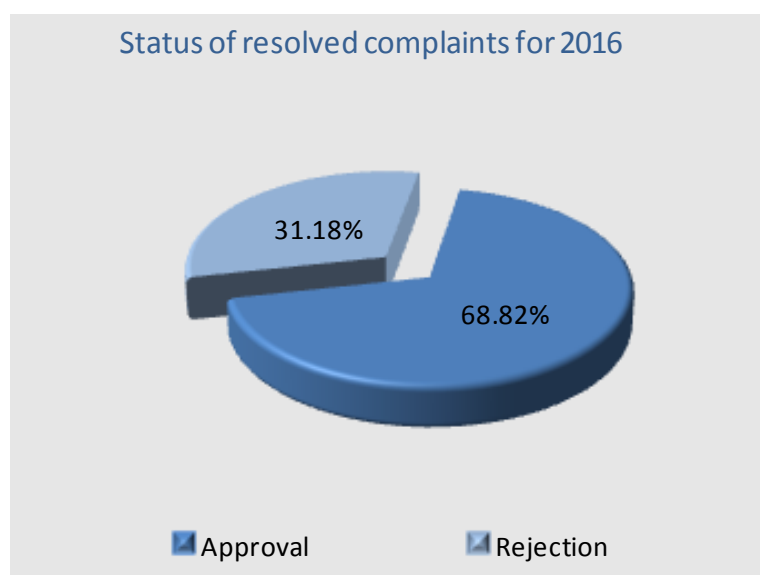


Fig. 2.8 Status of solved complaints, 2016

It should also be noted that ERO received 10 customer complaints from the Basic Court in Pristine on the grounds of substantive incompetence to review them. These complaints were reviewed by ERO and consumers were instructed on further proceedings based on provisions of Article 39 of the Law. 03/L –201 on Electricity and Rule on Resolution of Disputes and Appeals in the Energy Sector.

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

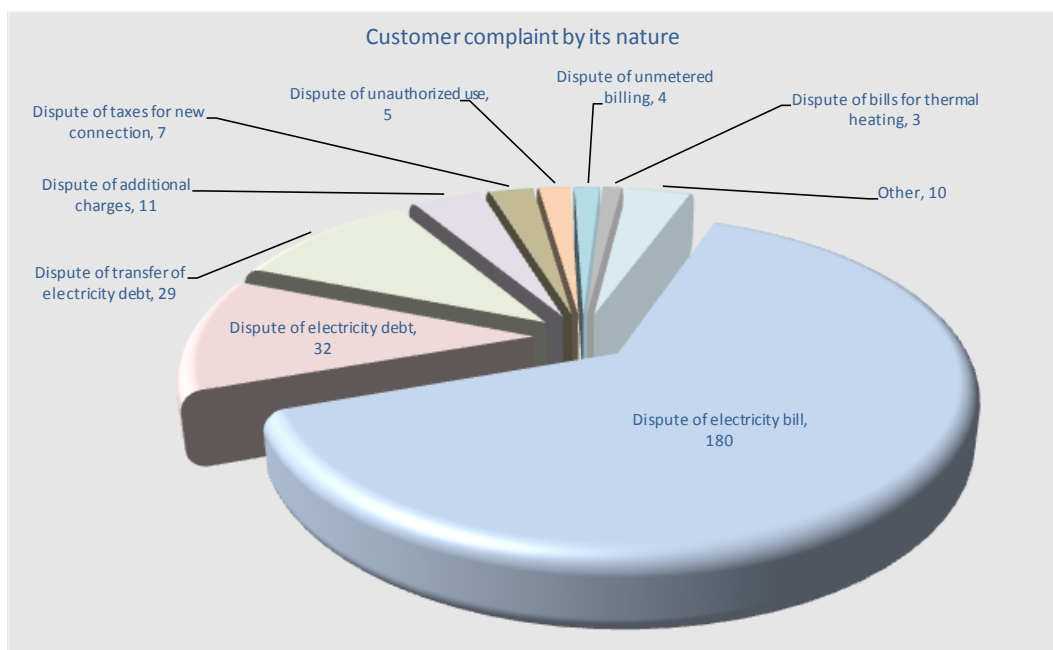


Fig. 2.9 Number of customer complaints by its nature

The following sections explain the nature of consumer complaints lodged during 2016:

- **Dispute of electricity bills** relates to customer complaints in cases of incorrect or irregular readings, which give an inaccurate account of electricity spending, causing financial damage to the customer.
- **Dispute of electricity debt** relates to customer complaints for issues caused by inaccurate definition of the electricity debt not collected by the public supplier in cases of property transactions and for usurped property.
- **Dispute of electricity debt transfer** relates to customer complaints regarding the transfer of the electricity debt from one customer to another, namely from one code to another by the energy company. This debt transfer has caused great concern for customers as the regular monthly bill also showed the electricity debt transferred from the other code.
- **Dispute of additional charges** relates to customer complaints to which the electricity company has billed additional charges to the regular billing. These complaints result from nonregistration of electricity spending of one or two phases of the electricity meter. In such cases the public supplier charged customers by adding the spending of the one or two phases as supplementary billing.
- **Dispute of new connections** relates to customer complaints to whom the energy company denied the right for a new connection. In such cases, in order to implement a new connection, customers must first pay the debt in the old code.
- **Dispute of unauthorized electricity use** relates to consumer complaints charged by the energy company for unauthorized electricity use (return of loss). Based on the Law No. 05/L – 085 on Electricity and the legal provisions of the Rule on Settlement of Complaints Disputes in the Energy Sector, ERO is not competent for such complaints and has therefore

instructed customers to address the Department of Administrative Matters under the Basic Court in Pristine.

- **Dispute of flat rate billing** relates to customer complaints for flat rate (without measurement) billing by the electricity energy. Such complaints result from inability to read metering points for different reasons, mainly due to inability to access the metering point. In such cases, the public supplier charged consumers based on average spending in previous months.

The figure below shows the number of customer complaints registered and resolved by ERO by year.

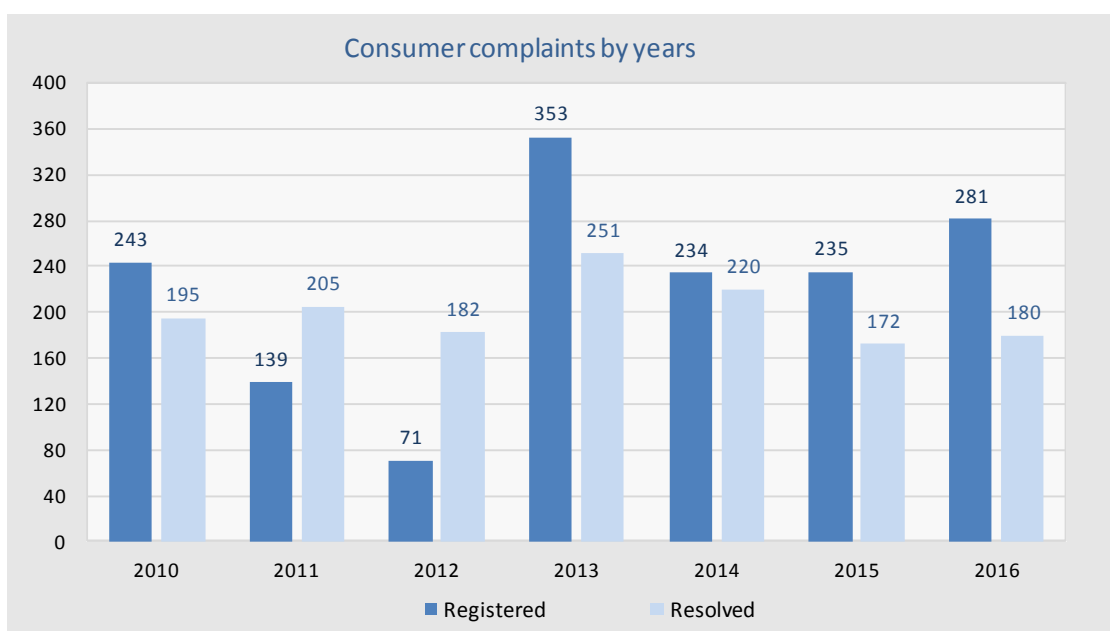


Fig. 2.10 Registered and resolved consumer complaints 2010-2016

2.10.1 Decisions of the ERO Board in the area of customer protection

Based on Article 14, paragraph 6 of the Regulation on Resolution of Complaints and Disputes in the Energy Sector, customers and licensees are entitled to lodge complaints against first instance decisions of ERO to the ERO Board as an independent second instance body.

During 2016, the ERO Board reviewed five recommendations issued by the Department of Customer Protection regarding complaints of commercial and industrial customers, whereby the Board approved all of these recommendations.

During 2016, the public supplier filed four complaints to the ERO Board against first instance decisions. The Board reviewed these complaints and rejected them as unfounded.

During 2016, customers filed 20 complaints to the ERO Board against first instance decisions. The Board reviewed these complaints and rejected them as unfounded.

In addition, the ERO Board issued a decision in 2016 to approve the request of KEDS for amending and supplementing the Annex Procedure for the Identification and Prevention of unauthorized use of electricity with the new record Form to be generated by the handheld device.

2.10.2 Other activities related to customer protection

In addition to registered complaints, during 2016 ERO also held 900 meetings and 550 telephone conversations, as well as maintained electronic communication, with customers, who addressed the Office about various issues between customers and licensees in terms of energy supply. As part of its communication with customers, ERO informed and guided them in terms of rules and procedures, as well as their rights and obligations relating to energy supply.

In 2016 ERO received 45 customer complaints by mail, who insisted that ERO deal with their complaints even though they should have addressed the licensees or courts. These complaints were mainly related to unauthorized use of electricity and damages compensation. ERO responded in writing to all such customers instructing them about further proceedings related to their complaints.

Despite the request for termination of debt transfers between codes, during this reporting year ERO received consumer complaints about debt transfers, which it forwarded to the licensee for review.

Regarding the implementation of the Law No. 05/L-043 on Public Debt Forgiveness, during 2016 ERO received a considerable number of complaints by customers claiming that they were denied legal rights by not being involved in energy (electricity and thermal energy) debt forgiveness lists. ERO has addressed a large number of complaints about this issue and instructed consumers about their rights as set out in the aforementioned law.

During this reporting year, ERO noted that the operator of the distribution system disconnected several electricity customers even though they had lodged a complaint with ERO or the court. However, the number of disconnections has dropped significantly in comparison with previous years. Reduction of cases of disconnection for this category has been ensured through cooperation between ERO and the licensees, wherein ERO requested from the licensees to create a database for this category of complaints, in order to prevent disconnection of clients for disputed debts until a final decision is reached.

During 2016, acting upon decisions of the Basic Court in Pristine, ERO prepared 22 pleas against plaintiffs KEK and customers after they complained against the decisions of the ERO Board. In addition, ERO has also been involved in 52 court hearings in the Basic Court in Pristine as a defendant. It should be noted that compared to previous years, the number of lawsuits involving ERO has been a significant increase.

It is worth mentioning that during 2016 the Basic Court in Pristine - Department of Administrative Matters rejected the claim of plaintiff Kosovo Energy Corporation in Pristine and upheld the Decision on Electricity Tariffs issued by ERO Board V_519_2013 dated 22.03.2013, which related to the disputed amount of EUR 19.8 million.

In addition, during 2016, a number of decisions of ERO were appealed against by unsatisfied parties to the Basic Court in Pristine - Department of Administrative Matters, requesting legality assessment of administrative decisions. It is important to note that, so far, no decision of ERO in administrative procedure has been returned for review due to legality non-compliance by the administrative body; that all these charges against decisions of ERO were rejected as ungrounded and the challenged decisions were upheld.

ERO has had close cooperation with the Department of Customer Protection under the Ministry of Trade and Industry, where during this reporting period has received several customer complaints by this institution. These complaints have been received and reviewed by ERO in accordance with legal provisions.

3 COOPERATION WITH OTHER STAKEHOLDERS AND THE TRANSPARENCY

3.1 Reporting and cooperation with the Kosovo Assembly

In 2016 as in previous years, ERO has continued to report to the Assembly through the Committee for Economic Development and Infrastructure about important events in the energy sector whenever was requested by this Committee.

During 2016 at the request of the Committee for Economic Development and Infrastructure, on 12 February 2016, ERO has submitted the report related to the customer information regarding power cuts and on 11 November 2016 the report related to the information on billing, generation, consumption, import and export of electricity for the period January- October 2015/2016.

Moreover, ERO has cooperated with the Committee on Economic Development and Infrastructure when drafting and finalization of new energy laws.

3.2 Cooperation with other stakeholders and partnership activities

During 2016 ERO had also close cooperation and partnership with MED, other institutions of the Republic of Kosovo, the licensees, the Energy Community Secretariat and the international community operating in Kosovo on various issues of the energy sector.

3.2.1 Cooperation with the Ministry of Economic Development

ERO has been actively participating in the working groups established by the MED on revision of the energy sector laws, preparation of the Energy Strategy 2017-2026, the National Action Plan on Energy Efficiency, as well as various administrative instructions.

In addition, ERO has assisted MED in filling out the questionnaires required by international institutions. Moreover, during 2016 they held several meetings on the problems of the sector, the perspective of the electricity market and the forms of cooperation.

3.2.2 Cooperation with other institutions of the Republic of Kosovo

During 2016, ERO has participated in several meetings of the National Council for Economic Development organized by the Ministry of Trade and Industry where the issues raised by the Kosovo Chamber of Commerce and other chambers operating in Kosovo dealing with electricity tariffs, connections to the electrical grid and power supply were addressed.

Cooperation with the Civil Aviation Authority (CAA)

On 3 November 2016, ERO and AAC signed a Memorandum of Understanding, where they committed to cooperate within the framework of their legal functions, on sharing experiences and expertise during regulatory processes, especially during tariff reviews for activities that these institutions are regulating, by developing and advancing their experiences in these processes.



Fig. 3.1 Signing of the Memorandum with CAA

ERO and CAA have agreed, for the purpose of consultation and participation in tariff reviews, to also organize meetings between experts of both parties in order to discuss the implementation of this Memorandum of Understanding, share information and address the specific problems of reviewing applications for tariffs of regulated activities.

3.2.3 The partnership activities with NARUC/ USAID

Since 2008, ERO and NARUC (National Agency of Regulatory Utilities Commissions), with financial support from the US Agency for International Development (USAID), are in a close partnership. This partnership has enabled the ERO professional staff to gain from the best regulatory practices that USA regulators have.

In order to enhance transparency and public relations, in 2016, NARUC and ERO have decided to conduct an observation activity of this field in the US, with the State Regulator of Kentucky - KPSC (Kentucky Public Services Commission), which is offered to serve as Regulatory host for ERO staff.



Fig. 3.2 The visit of Kentucky representatives to ERO

ERO representatives are familiarized with the practices and tools used by the PSRC staff during their processes of public relations, including work and interaction that PSRC has with customers, media and other stakeholders involved in the sector. As a result of this share of practices, ERO has drafted the Communication Plan which envisages the improvement of transparency and increasing public involvement in the regulatory process of the energy sector.

As a part of this cooperation, the representatives of NARUC/PSRC from 24 to 28 October 2016, stayed in Kosovo to establish, along with ERO staff, the electronic customer database.

Creating the database is an important step in intensifying the care that ERO has towards customers, creating thus, more favorable conditions for resolving customer complaints as soon as possible and intensify monitoring of operators in energy sector in their approach towards customers.

In addition, NARUC/PSRC experts have been working with the ERO staff on drafting the Communication Plan Framework which aims to involve all stakeholders in the regulatory processes upon adoption of the third legislative package and especially during the market opening process.



Fig. 3.3 The Meeting NARUC/PSRC - ERO

In this regards, the NARUC/PSRC experts have had also meetings with energy sector operators (KEK, KOSTT, KEDS and KESCO), representatives of Kosovo Assembly and journalists. Discussions held from these meetings have helped NARUC/KPSC experts to create an overall picture of the sector and the idea of finding the most suitable ways for greater and more intensified involvement of these stakeholders into regulatory processes that ERO conducts.

3.2.4 USAID/NARUC project for the retail market (SEE Bridge)

Starting in 2015 and then in 2016, USAID in cooperation with NARUC has organized the project that has to deal with the preparation of the retail market opening for a number of participants in the project, such as: Albania, Bosnia and Herzegovina, Kosovo, Macedonia and Serbia, as well as parties from the region of the Black Sea, such as Armenia, Georgia, Moldova and Ukraine.

Five meetings have been held and the following documents were prepared:

- The first steps of the regulatory bridges for SEE retail market (SEE Regulatory Bridge Electric Retail competition Primer);
- Principles of regulation to promote the development of renewable energy in the Black Sea;
- Regional regulatory roadmap for retail electricity competition;
- National Roadmap for the participating countries.

In addition, many areas of the energy sector are analyzed and presented examples of retail market organization in the US and in Europe. This has included the manner of sharing the data and experience and problems that may arise, data confidentiality, etc.

Except EU/US experience as a part of the project, there were also presented experiences of participating countries in the project, whichever of them has made strides in any area.

Kosovo has introduced some experience on KEDS compliance program and compliance report.

In the part about the National Roadmap are prepared roadmaps for participating countries.

For Kosovo, in cooperation with the ERO staff, a document is prepared for the opening of the retail market - the National Roadmap.

The final and most important document of the project is: **Regional Regulatory Roadmap on competition of the retail electricity market.**

At the end of the project, instructions and consents are made from the parties that this document is of great importance and should be a roadmap not only to Regulators but also other stakeholders such as ministries responsible for energy, licensees, NGOs etc., and it should be available to mentioned parties as well as other stakeholders.

As conclusion of this project, beside the documents produced and experience shared, is said that it is very necessary, with the initiatives of project participants, to hold other similar meetings to enhance cooperation between the participating countries.

3.2.5 Cooperation with the Albanian Energy Regulator

On 6 May 2016, representatives of ERO and of Albanian Energy Regulator (ERE) met in Tirana to discuss the strengthening of bilateral relations and determine key areas where to focus their cooperation in the future.

Approximation of legislation, especially the secondary one; creation of a Single Energy Market, as well as membership into international institutions are regarded as common priority of this cooperation, which will be achieved by sharing of experiences and expertise between two regulators.

The experts of two regulators have presented to their counterparts challenges they are facing with and have shared professional views on the most suitable choices of economic regulatory practices in the energy sector. Transposing EU legislation, maintaining institutional independence, market opening and monitoring are identified as main challenges that two regulators are currently facing with, therefore it was estimated that the cooperation and share of experiences will help regulators to achieve common goals.

3.3 ERO's participation in international activities

The purpose of participation in international activities is considered by ERO as one of the key elements that serves institutional strengthening, increasing in knowledge and experience of its staff. This is one of the reasons for which we can mention the activity and role of the ERO in

membership and active participation in international organizations, in organizing international conferences, roundtables or multilateral and bilateral meetings.

3.3.1 Participation in the Energy Community Regulatory Board (ECRB)

The Energy Community is an international organization established by international treaty in October 2005 in Athens, attended by the European Union countries, the South-East European region and the Black Sea. EC activities during 2015 were focused towards achieving common goals: "acquis communautaire" implementation, develop the adequate regulatory framework and liberalize and integrate markets in the sector of electricity and natural gas.

EC Contracting Parties are: Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Montenegro, Serbia, Moldova and Ukraine. European Union member states are participants, whereas Norway, Turkey, Armenia and Georgia have the observer status. Georgia is currently a candidate for membership in EC.

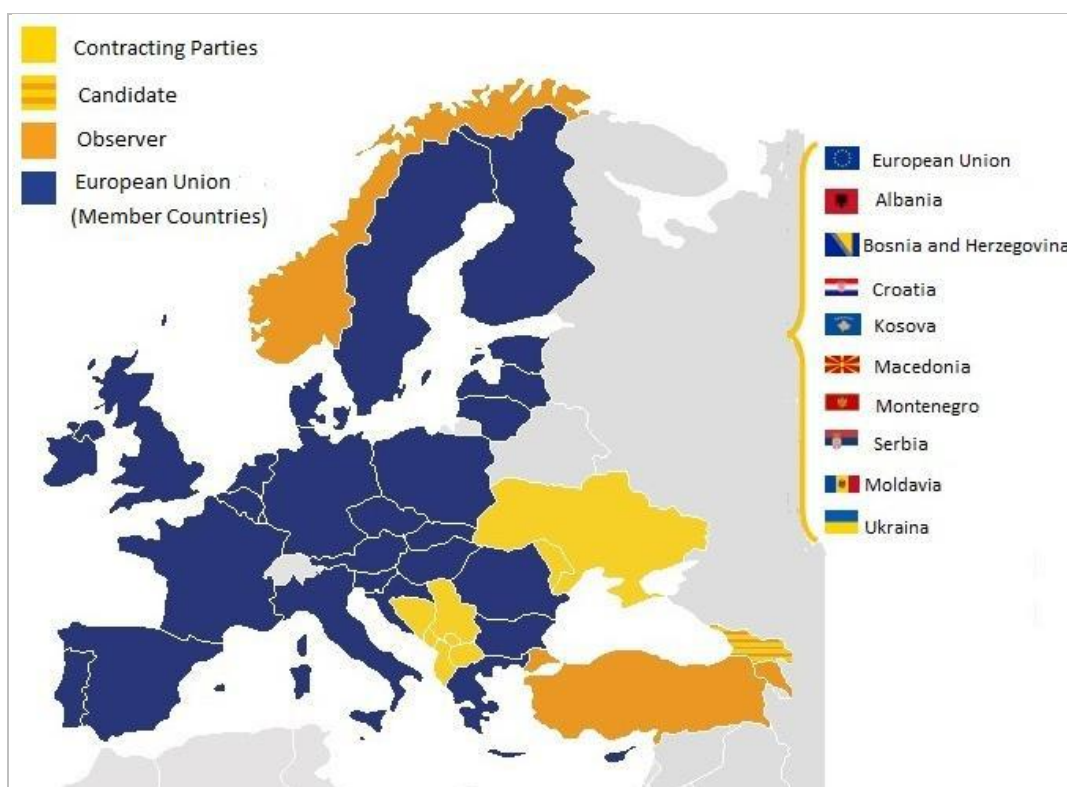


Fig. 3.4 South East Europe Member States of the Energy Community

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

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

Energy Community Regulatory Board is an institution established under Article 58 of the EC SEE, comprised of regulatory authorities of the contracting parties, participants and observers. ECRB

plays the role of a coordinating body of the regulatory authorities for harmonization of the regulatory framework, sharing of knowledge and development of practices on Treaty implementation.

Based on the provisions of EC Treaty, ECRB has the following responsibilities:

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

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

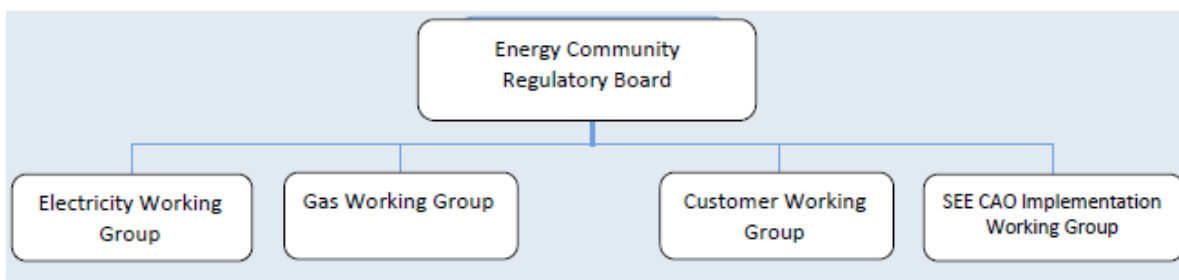


Fig. 3.5 Structure of Energy Community Regulatory Board

According to the obligations towards EC, ERO has nominated its members in ECRB and in every working group, participates actively in the Board activities and respective working groups. Activities of respective groups are as follows:

Electricity Working Group

This working group, during 2016, held regular meetings and activities which were also attended by the representative of ERO. For more efficient work, this group has also established its subgroups (Task Forces –TF), description and activities of which are presented below:

- **TF1 - Wholesale electricity market opening** - In order to support the effective market opening in the 8th region, this subgroup is focused on activities for regulatory support, monitoring the implementation of Regional Action Plan for wholesale electricity market opening in Southeast Europe. In this context, work has been done on: the Progress Report of the Regional Action Plan, regulatory review of harmonization of SEE Auction Office, researching developments in the electricity sector which results positively in the regional integration of energy markets.
- **TF2 - Balancing the integrated market** - Implementation of balancing mechanisms based on the market and integration of balancing markets is essential for the interconnection of national markets into regional market and promote transparent formation of balancing

pricing, will encourage competition in purchasing of balancing services and will have positive impact on the stability of transmission network.

In this respect, TF-2 subgroup activities have continued in: Research for existing models of imbalance calculation in EC and impact assessment of the regional balance integration into the SEE electricity market.

- **TF3 - Wholesale electricity market monitoring** - Market Monitoring is a key component of regulatory responsibilities, which is also defined in "*acquis communautaire*" and has been at the focus of ECRB and working group activities of electricity during the past.

Gas Working Group (GWG)

This working group focuses its activities on issues of regulating the natural gas sector, harmonization of 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 favor of handling of specific issues, specific subgroups are created ("Task Force"-TF).

- **TF1 - Interoperability** - is essential to perform interconnections of the gas systems and unhindered cross-border gas flow. Therefore the following document is drafted: Research on compliance with the EU Regulation 2015/703 on Interoperability and Data Exchange with a focus on the application of interoperability standards for gas networks.
- **TF2 - Regulatory treatment of losses in the network**- Acceptance of technical and commercial losses in the national gas networks in determining of tariffs is of particular importance, therefore the aligned regulatory approach to tackle losses at the regional level contributes to the integration of markets.

Within this activity is prepared: Research on current status of losses treatment in the gas infrastructure of regional countries.

- **TF 3 - Gas tariffs** – Alignment of the regulatory framework for gas tariffs (Tariff rules and methodologies) is considered as essential for regional integration of gas markets. The activities of this sub-group are focused on gaining experience from the EU regulators, particularly in the application of regulatory accounting accounts.

Customer and Retail market Working Group

Part of the ECRB is the Customer and Retail market Working Group with its subgroups, which deals with activities related to the customer protection, tariffs and retail prices, contractual relations between suppliers and customers, as well as the quality of electricity supply and voltage quality adjustment.

- **TF1 - Supply Quality**– The key element of customer protection is that the electricity supply service is performed according to advanced standards. During 2016, this sub-group has focused its activities on monitoring and relevant comparisons to assess implementation of supply quality standards and drafting of CEER-ECRB Benchmarking Report of the supply quality, offering tests for electricity sector of the Energy Community.

- **TF2 - Barriers to enter into retail market**- Drafting simple rules to enter into retail market are essential for effective opening of retail market and simultaneously for regulating the energy markets that contain a range of complex technical requirements.

In this respect, the activities of this sub-group have included the drafting of a Summary of requirements that retailers must meet to participate in the national retail markets accompanied with the Brochure sample.

- **TF3 - Alternative Dispute Resolution** – Serious handling of disputes between customers and suppliers is an essential component in customer protection, whereas alternative dispute resolution of contests presents an efficacious tool to solve this disputes.

This subgroup has carried out a number of relevant activities and has prepared documents such as: Comparative research of existing schemes with a view to identify best practices, Guidelines of best practices for classifying and recording of complaints, and brochure sample for customer information about tools for alternative dispute resolution. In addition, complementary activity was the share of experiences with EU Regulators regarding these issues.

3.3.2 ERO participation in meetings organized by the international institutions

ERO is participating in some international institutions and actively participates in meetings held within these institutions. Most of them have a determining role in many activities in the energy sector at regional and national level.

Below are listed meetings and roundtables attended by ERO representatives.

- **10 February 2016** - Regular meeting of the ECRB's Working Group for Gas - focusing the following topics: aligned regulatory framework for specific issues of interoperation between networks; regulatory treatment of losses in gas networks; and pilot projects within the South-Southeast Regional Initiative;
- **11 February 2016** – 33rd meeting of the Working Group for Customers and Retail Markets within Energy Community Regulatory Board (ECRB), organized by the Secretariat of the Energy Community, Vienna;
- **24 February 2016** - 37th meeting of the Electricity Working Group of ECRB, organized by the Energy Community Secretariat, Vienna, Austria;
- **25 February 2016** - Workshop: National implementation of the network codes, organized by the Energy Community Secretariat, Vienna, Austria;
- **26 February 2016** - Working Group meeting of Projects of Energy Community interest (PECI) - in this meeting were discussed and reviewed the following topics: evaluation and selection process of submitted projects; criteria and methodologies for project evaluation (categorized by sector: electricity, natural gas and "smart meters/smart networks");
- **14 March 2016**- Workshop "Network capacity of gas transmission in the Energy Community", Vienna, Austria;

- **8 April 2016** - Participation in the meeting of the Working Group for evaluation of the Projects Energy Community Interest (PECI);
- **22 April 2016** - The EU Energy Legislation in Transition: New Challenges, Energy Policies & Laws, organized by the Florence School of Regulation, Brussels, Belgium;
- **1st and 2nd June 2016** – 21st Athens Electricity Forum, organized and led by the Energy Community, Athens - Greece;
- **27-30 June 2016** - Technical Workshop: Regulation of Electricity Distribution Network and Supply Functions in a Competitive Environment of Retail Market, organized by NARUC/USAID, Sarajevo BH;
- **24-25 June 2016** - Workshop: Extractive Industries Transparency Initiative, (EITI), Durrës, Albania;
- **6-7 July 2016** - Participation in the GWG ECRB meeting and coordination meeting for the implementation of the network codes, held in Budapest, Hungary;
- **22-23 September 2016**- participation in the gas forum and GWG-ECRB held in Ljubljana, Slovenia;
- **3-4 October 2016** - The fourth meeting of the cooperation group of the SEE Regulators, organized by NARUC / USAID, Tirana, Albania;
- **5-9 September 2016** - Study visit about "One Stop Shop", organized in Denmark and Belgium;
- **24-25 October 2016** - 35th Meeting of the Working Group for Customers and Retail Markets within the Energy Community Regulatory Board (ECRB) as well as the joint working table between ECRB -CEER- organized by the Energy Community Secretariat, Vienna, Austria;

3.4 Transparency and public involvement in the regulatory processes

Through the Communication Strategy approved by the Board of ERO, has been given a special importance and priority to the general public communication. ERO's transparency is provided by the publication of documents and information related to the level of service of participants in the energy sector and public hearings. Communication of information is carried through the availability of data which cover the energy sector as requested by journalists. Transparency to the public has made the ERO to positively and timely respond to the media requests for clarification about different issues related to the energy sector.

For information of third parties the communication was made through electronic official site, providing more complete and accurate information and services offered. This site provides access to updated information on primary and secondary legislation in the energy sector, licensing terms and registration of the licensees, ERO decisions, information about authorization for building new energetic capacities, application register and other information in the field of customers' protection.

4 FINANCIAL REPORT

4.1 ERO's budget

Kosovo Assembly with the Law No. 05/L-071 on Budget of the Republic of Kosovo for 2016, approved the budget of the Energy Regulatory Office in the amount of € 743.516, which as a whole is allocated as a government grant, although by the Law on the Energy Regulator, ERO is financed from its own revenues and only when these revenues are insufficient, then ERO may use a budget allocation as the government grant.

According to the economic categories, ERO's budget is as follows:

Tab. 4.1 Budget at the beginning of the year

Description	Budget
Wages and Salaries	476,184.00 €
Goods and Services	199,332.00 €
Utilities Expenditures	22,000.00 €
Capital Expenditures	46,000.00 €
Total	743,516.00 €

By the decisions (Decision No. 07/112, 11/120 and 01/123), of the Government of the Republic of Kosovo, ERO's budget in 2016 was cut for € 52,578.29 in the following categories:

- a) wages and per diems 22,694.00 €,
- b) goods and services 22,350.30 €
- c) utilities € 4,062.51, and
- d) capital expenditures 3,471.48 €

In percentage, by government decisions, ERO's budget was cut for 7.07%.

Tab. 4.2 Final budget

Description	Budget
Wages and Salaries	453,490.00 €
Goods and Services	176,981.70 €
Utilities Expenditures	17,937.49 €
Capital Expenditures	42,528.52 €
Total	690,937.71 €

4.2 Budgetary Expenditures

To finance the activities performed in 2016, ERO has spent € 678,710.82.

By economic classification, ERO expenditures are as follows:

Tab. 4.3 Expenditures by economic categories

Description	Amount
Wages and Salaries	442,487.01 €
Goods and Services	176,576.70 €
Utilities Expenditures	17,118.59 €
Capital Expenditures	42,528.52 €
Total	678,710.82 €

Budget execution in proportion to the remaining budget after cuts by the reviewing process is 98.23%.

The rate of budget execution by economic categories, expressed in percentage, is shown in Table 4.4.

Tab. 4.4 Budget execution in percentage

Description	Budget	Expenditures	Difference	Performance
Wages and Salaries	453,490.00 €	442,487.01 €	11,002.99 €	97.57%
Goods and Services	176,981.70 €	176,576.70 €	405.00 €	99.77%
Utilities Expenditures	17,937.49 €	17,118.59 €	818.90 €	95.43%
Capital Expenditures	42,528.52 €	42,528.52 €	- €	100.00%
Total	690,937.71 €	678,710.82 €	12,226.89 €	98.23%

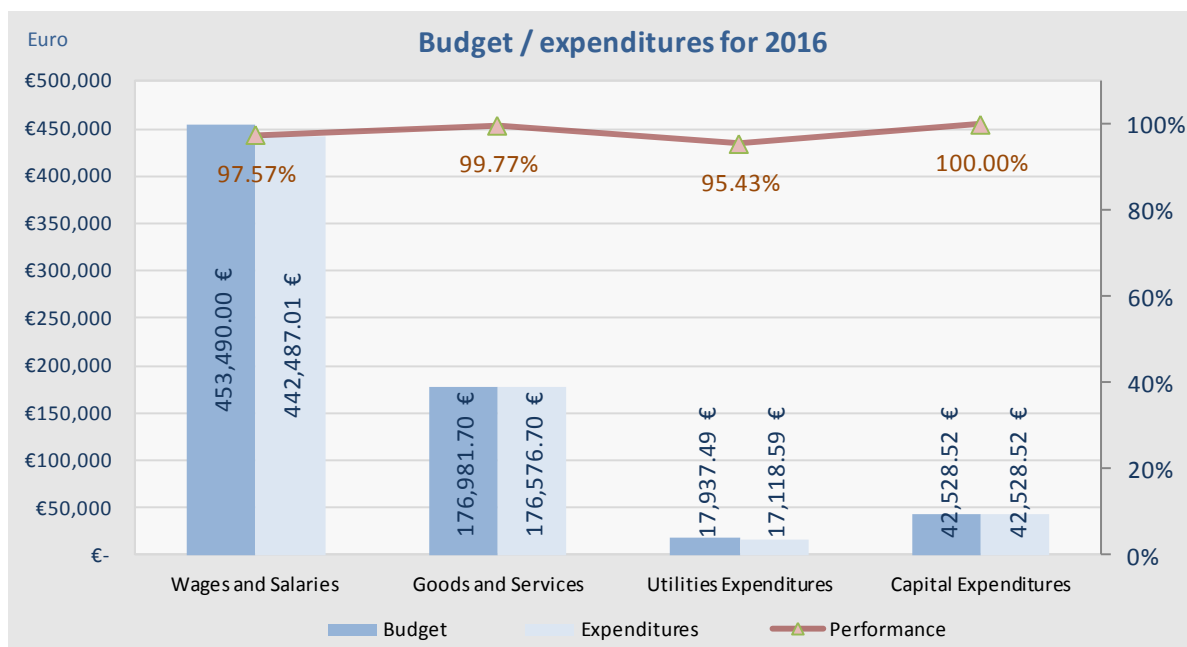


Fig. 4.1 Execution of the ERO budget

The following tables show expenditures by economic codes.

Tab. 4.5 Wages and per diems

Wages and Salaries	Amount
Net Wages	370,080.76 €
Personal Income Tax	32,537.05 €
Employer Pension Contribution	19,934.60 €
Employees Pension Contribution	19,934.60 €
Total	442,487.01 €

In this category, a total of € 442,487.01 are spent and all amount was spent on regular salaries of the ERO staff. With the exception of per diems for official trips abroad, which are paid by goods and services category, ERO does not pay other allowances.

Tab. 4.6 Goods and services

Goods and Services	Amount
Expenditures for official travels abroad	7,818.11 €
Allowances for official travels abroad	18,087.79 €
Accommodation for official travels abroad	5,464.16 €
Other expenditures for official travels abroad	3,260.91 €
Internet expenditures	2,869.14 €
Expenditures for Mobile Telephony	11,126.37 €
Postal expenditures	134.80 €
Education and Training Expenditures	3,304.00 €
Different intellectual and advisory services	3,987.20 €
Printing services	1,051.34 €
Membership expenditures	4,000.00 €
Furniture	3,717.00 €
Computer	3,944.00 €
Hardware for IT	1,999.80 €
Other equipment	1,912.00 €
Office supplies	5,139.14 €
Beverage supply	3,999.87 €
Accommodation	441.00 €
Vehicle fuel	4,713.48 €
Vehicle registration	420.00 €
Vehicle insurance	2,370.83 €
Municipal tax for vehicle registration	40.00 €
Security of premises	8,907.94 €
Vehicle maintenance and repair	1,803.65 €
Building maintenance	5,526.54 €
Maintenance of Information Technology	5,219.40 €
Maintenance of furnitures and equipment	197.32 €
Building rent	49,140.00 €
Advertisements and	4,700.00 €
Official dinners	6,825.91 €
Rental tax payment	4,455.00 €
Total:	176,576.70 €

For official trips abroad from ERO budget are spent 34,630.97 €, of which as travel expenses were 7,818.11 €, allowances (per diems) 18,087.79 €, accommodation € 5,464.16 and other travel expenses (visa costs, health insurance, etc.) 3,260.91 €.

Tab. 4.7 Utilities

Utilities Expenditures	Amount
Electricity	15,507.59 €
Water	613.47 €
Telephone Expenditures	997.53 €
Total	17,118.59 €

The total for this category of expenditures is € 17,118.59. Compared with the previous year, in 2016 is spent approximately the very same budget.

4.3 Transferred revenues

Based on the above data, it is noted that in 2016 ERO has generated revenues from licensing fees in the amount of € 1,818,961.85, whereas the amount of incurred budget expenditures is € 678,710.82. The difference between revenues and expenses in the amount of € 1,140,251.03, represents the surplus funds that ERO has collected during this year and which, pursuant to Article 8 of the Law on Budget of the Republic of Kosovo for 2017 and Article 64 of the Law on Public Financial Management and Accountability, will be transferred into 2017.

Tab. 4.8 Transferred Own Source Revenues

Transferred own-source revenues	Amount
Revenues transferred from 2015	245,962.00 €
Revenues collected during 2016	1,572,999.85 €
Total revenues 2016	1,818,961.85 €
Expenditures for Wages and Salaries	(442,487.01) €
Expenditures for Goods and Services	(176,576.70) €
Utilities Expenditures	(17,118.59) €
Capital Expenditures	(42,528.52) €
Total Expenditures 2016	(678,710.82) €
Own-source revenues transferred in 2017	1,140,251.03 €

5 ELECTRICITY SECTOR

5.1 Characteristics of the electricity sector

Kosovo has preconditions for the production of electricity, not only to cover its own needs but also for export. Kosovo's power system is designed to produce electricity based mainly on lignite. Therefore it remains a major challenge of balancing the system for all participants in the sector.

The electricity sector consists of lignite mines, generation including RES, transmission, distribution and supply.

Kosovo has an installed generating capacity of 1,557 MW, however, operational capacity is considered with around 1,033 MW.

The majority of production capacity is composed of Thermal Power Plants (TPP) with 95% lignite, while the rest consists of hydropower, solar panels and wind power plants.

TPP Kosova A and TPP Kosova B are very old and have almost exceeded their life expectancy (TPP Kosova A over 40 years). Outdated technology influences these units not to have the flexibility to adapt to customer requirements at different times of the day, i.e for balancing the system. Also other hydro capacities (HC) are unable to provide balancing service since they have no accumulation basins, except Ujmani which has specific regime because of drinking water and industry/irrigation needs. Also, small HP and other generators from RES could not contribute to change production at the required time.

Balancing the electro-energetic system is a serious challenge to system operators, and to achieve this, imports and exports should be made to cover electricity shortages or sale of surpluses that occur in different time periods. Since consumption diagram changes in longer periods of time but also daily, it significantly complicates to balance the system. Many times it happens that on the same day but at different hours, there is a need for imports and exports.

Sometimes for different reasons may coincide to have import and export at the same time. This phenomenon happens on various occasions such as when the export is contracted, while in the meantime there is a decrease of generating unit or when the import is contracted, but the generating unit is turned earlier in system than the forecast. Sometimes this happens because of the large change in demand such as in the case of changing weather conditions.

Bringing the generators into function from RES increases operational generation capacity, but in most cases they are unpredictable, and are in the regime of dispatch priority, and therefore they have no impact on improving the system balancing situation, sometimes even increases imbalances. Years ago, international energy institutions considered as necessary for every installed MW of RES to have as much reserve to meet the demand by RES in the event the generators fail.

During 2016, Kosovo has been net exporter of electricity, so there were more exports than imports and this difference is substantial with net export 488.9 GWh.

Import and export of electricity in 2016 was carried out by a single supplier - the public supplier, but in the same time, electricity has been imported and exported in the form of exchange, which is fully carried out by KEK.

Since October 2016, industrial customer Feronikeli, connected at 220 kV voltage level, has begun to be supplied at unregulated prices.

For the proper functioning of the electricity sector, investments are needed in all sub-sectors, especially in generation and distribution.

Support for market liberalization, also for cooperation between regional countries gives the European Commission (EC) in order to facilitate the development of energy systems. In this context, support was provided for the region of Southeast Europe (SEE) countries, to harmonize their national energy policies and the development of a common regulatory framework. This will assist in the security of electricity supply and attracting investments in the energy sector of these countries.

Kosovo is a signatory of the Energy Community Treaty, which opens the possibility of cooperation with regional countries, but also creates obligations arising from the requirements of the Treaty and the Energy Community requirements expressed through packages of EU legislation on energy. These packages include regulations, directives and guidelines for the operation of energy systems in the Energy Community.

5.1.1 Electricity Market

To enhance security of supply and better functioning of the system, it is required the restructuring of the sector and market liberalization. It is expected that these changes improve power supply and increase competition. In order to achieve these objectives, a number of measures have been carried out, and some are underway.

Among very important issues for the energy sector, conducted in 2016 is the amendment of laws on electricity as the primary legislation. While in the process of amendment are rules, different methodologies and procedures for compliance with primary legislation.

Electricity supply is done through suppliers who operate with traders (buy or sell electricity). In 2016, KESCO as a public supplier has carried out contracts on export and import with 19 trading company of different countries in the region. A part of traders are licensed in Kosovo, while the rest is not. It is important, after KOSTT starts to function as a regulatory area and make the allocation of interconnection capacity lines, to have defined positions about the need for mandatory licensing or receiving licenses from other countries.

Trading is done between suppliers and traders according to the principles of the free market. Given that traders are from different countries and operate in many countries, therefore, neither energy source information nor the destination is possessed. So, in the electricity market, operate traders not states, while a country which has surpluses sells electricity to traders and a country which lacks electricity, buys it from traders.

As a precondition of market liberalization is reforming the energy sector that in Kosovo dates since 2004 with the development of energy laws and the establishment of ERO. The process continued with unbundling of vertically integrated KEK Company, and establishing the Kosovo Electricity

Transmission System (KOSTT) in 2006 which operates as a special entity. Further unbundling continued with separation of distribution and supply from KEK. After the unbundling, distribution and supply are privatized in May 2013 and transferred into ownership of Limak-Calik consortium. At the end of 2014 was made the legal unbundling of distribution and supply, which resulted in the creation of two companies KEDS - The operator of the distribution system and KESCO - Electricity Supplier.

5.2 Lignite and electricity production

5.2.1 Lignite production and consumption

About 95% of the total installed capacities of electricity generation is comprised by power plants that operate with lignite as the primary energy source. Large reserves of lignite enable an assurance of low-cost electricity production, but have a negative impact on the environment due to greenhouse gas emissions, which in the long-term projections increases the risk of increasing the cost of production.

Lignite production in 2016 is 8.8 million tons, whereas the consumption is 8.5 million tons which quantities are larger to those compared to 2015. Lignite production and consumption by months, for 2016 is presented in Table 5.1.

Tab. 5.1 Lignite Production and Consumption in 2016

Lignite production/consumption 2016	Total	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Lignite production (t*1000)	8,801	770	569	754	611	696	701	711	677	884	715	687	1,026
Lignite consumption (t*1000)	8,520	615	664	785	585	834	755	528	554	903	686	628	984
Lignite consumption in market (t*1000)	139.7	13.5	16.3	18.1	1.7	2.6	1.5	5.0	12.7	8.2	17.7	18.7	23.7

Lignite production and consumption from 2005 to 2016 is shown in the diagram below.

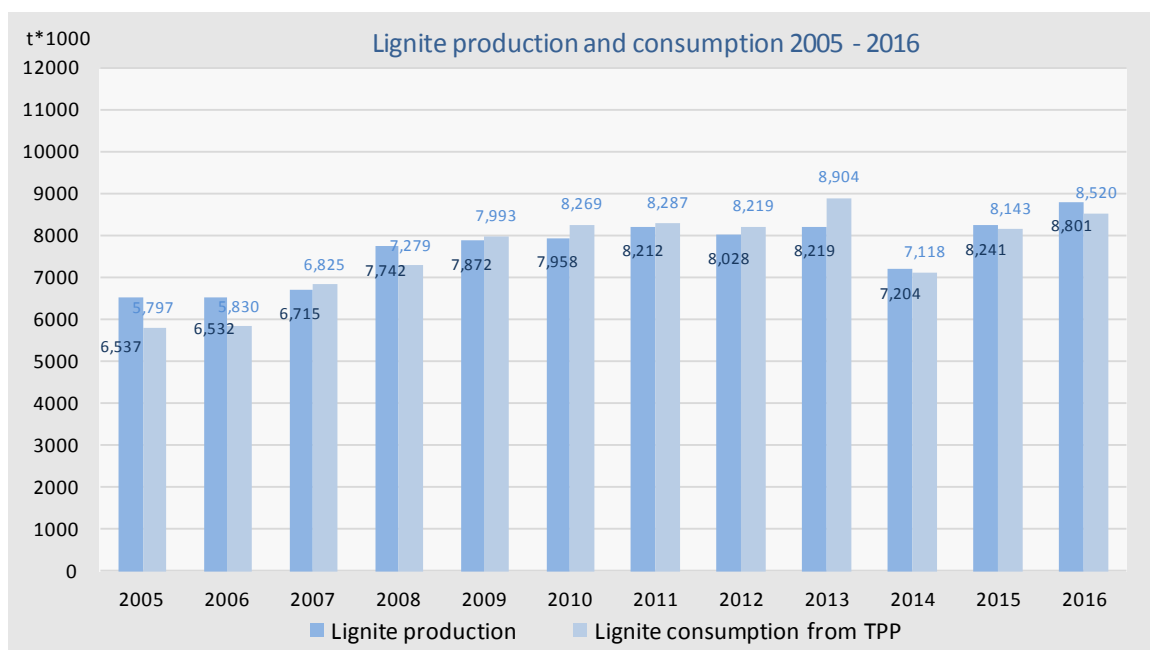


Fig. 5.1 Lignite Production and Consumption from 2005-2016

5.2.2 Electricity generation capacities

The total electricity production in our country is carried out by:

- Power Plants;
- Hydro power plants; and
- Plants from renewable energy sources (small hydro plants, wind power plant and photovoltaic panels).

The installed capacity of the generating units would be sufficient to cover the demand for electricity consumption, but due to ageing, their operational capacity is significantly reduced, which in turn affects the decreased production of electricity.

The capacity of generating units is presented in the following table according to type, capacity and year of commissioning.

Tab. 5.2 Generation capacities in Kosovo's electricity system

Generator units	Units capacity (MW)			Entry into operation
	Installed	Net	Min/max	
A1	65	Not operational		1962
A2	125	Not operational		1964
A3	200	144	100-130	1970
A4	200	144	100-130	1971
A5	210	144	100-135	1975
TPP Kosova A	800	432		
B1	339	264	180-260	1983
B2	339	264	180-260	1984
TPP Kosova B	678	528		
HC Ujmani	35.00	32.00		1983
HC Lumbardhi	8.08	8.00		(1957) 2006
HC Dikanci	4.02	3.34		(1957) 2013
HC Radavci	1.00	0.90		(1934) 2010
HC Burimi	0.95	0.85		(1948) 2011
Total HC	49.05	45.09		
EGU Belaja	8.08	7.50		2015
EGU Decani	9.81	9.50		2015
HC Hydroline-Albaniku III	5.00	4.22		2015/2016
HC Brod II	5.20	5.00		2015
Wind Power	1.35	1.35		2010
LedLight	0.10	0.10		2015
Solar photovoltaic plant ONIX	0.50	0.50		2016
Total RES	30.04	28.17		
Total	1,557.09	1,033.27		

Since the installed capacity of generating units is 1,557 MW, operating capacity is significantly lower with around 1,033 MW. As a result, operating power plants have a capacity of about 960 MW, while the rest of production capacities are from HP Ujmani, Lumbardhi and other RES with a total generation capacity of 73.27 MW.

In recent years, there is an increase in the installed generation capacity from RES, which continue to be operational as private investment within the RES.

5.2.3 Electricity generation

Total production of electricity in 2016 was 5,835.2 GWh, while in 2015 was 5.503 GWh, which means there is an increase of 6.04% compared to 2015. This is shown in table 5.3 which presents generation including own costs by units and months during 2016.

Tab. 5.3 Electricity generation in 2016

Generation units MWh	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aub	Sep	Oct	Nov	Dec
TPP A3 gross	668,232	48,729	74,170	103,844	86,789	39,516	22,935	102,507	42,328	52,402	346	71,718	22,947
TPP A4 gross	879,870	0	85,961	108,552	75,415	66,071	101,943	25,675	100,892	103,007	104,166	26,454	81,734
TPP A5 gross	766,707	67,745	106	0	27,369	112,186	82,369	14,916	62,699	104,267	105,035	80,655	109,362
TPP A own cons.	282,289	16,350	19,573	24,392	23,046	26,271	24,831	17,683	24,236	30,690	25,478	22,868	26,872
TPP Kosova A	2,032,521	100,124	140,664	188,004	166,526	191,502	182,417	125,415	181,683	228,985	184,069	155,960	187,171
TPP B1 gross	1,919,949	164,718	187,697	195,968	122,752	198,063	188,207	194,260	26,029	107,273	201,365	128,507	205,111
TPP B2 gross	2,014,008	183,391	192,222	202,016	137,895	203,117	193,156	8,513	117,337	200,994	210,842	154,552	209,974
TPP B own cons.	365,812	33,435	34,366	35,976	25,503	36,710	34,829	19,704	14,273	27,994	36,921	27,915	38,186
TPP Kosova B	3,568,145	314,673	345,552	362,008	235,144	364,470	346,533	183,069	129,093	280,274	375,286	255,144	376,899
Ujmani+Lumb.	182,823	5,469	7,563	19,814	28,359	23,706	17,457	8,728	8,411	13,428	15,194	26,459	8,235
RES conn. to DSO	51,739	2,061	4,948	5,670	6,265	7,308	3,847	2,189	1,972	3,577	5,034	5,754	3,115
Total	5,835,228	422,327	498,728	575,496	436,294	586,987	550,254	319,400	321,159	526,264	579,583	443,317	575,420
Balance 2016	5,891,339	555,676	499,544	557,616	438,516	569,907	550,129	381,763	327,765	461,234	560,436	426,714	562,039
Prod./bal. ratio	99.05%	76.0%	99.8%	103.2%	99.5%	103.0%	100.0%	83.7%	98.0%	114.1%	103.4%	103.9%	102.4%

Compared with planning in the electro-energetic balance of 2016, the generation of electricity from generating units is conducted in the amount of 99.05%.

The own consumption of power plants electricity constitutes approximately 11.57% of the total generation from power plants. When calculating the owned consumption, it should be noted that a part of this consumption (for both TPP Kosova A and TPP Kosova B generators) is directly consumed, while the rest is entered into the transmission system and is returned to power plants, where it is used for own-consumption.

The share of generators in total generation of electricity in 2016 is shown in the figure below.

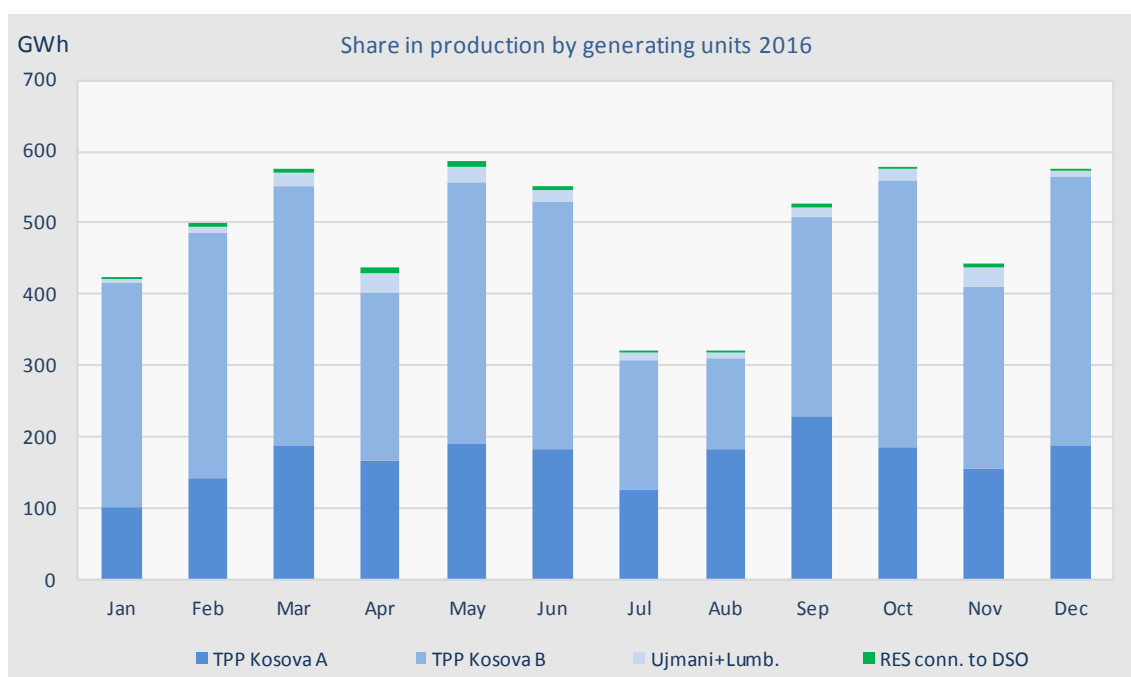


Fig. 5.2 The entry of generators in total generation in 2016

The operation of generating units during 2016 has been at an acceptable level, approximated the forecasts in the energy balance, for the operating hours, as well as, for energy provided in the system.

However, the number of drops out from the function of the power plant units has been high, especially the units B1 and A3. The number of drops out from the function is one of the indicators of functioning of generating units, which can be divided into planned drops out, unplanned and failure, which for 2016 are shown in the table below.

Tab. 5.4 Interruptions of generating units 2016

2016	TPP Kosova A			TPP Kosova B	
	A3	A4	A5	B1	B2
Planned interruptions	4	2	2	3	3
Unplanned interruptions	6	0	2	3	2
Failure	0	1	0	6	2
Total interruptions	10	3	4	12	7

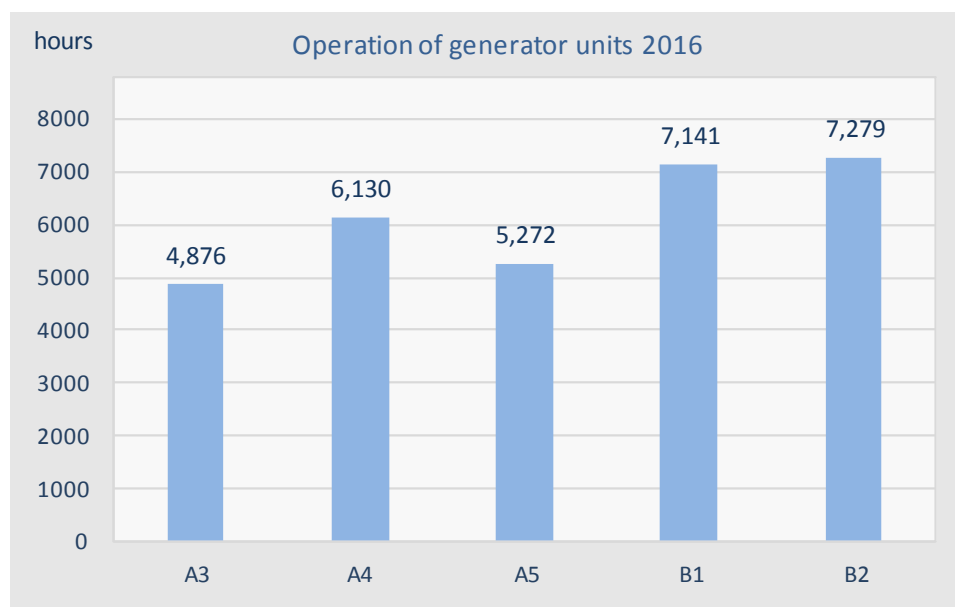


Fig. 5.3 Operation of generator units for 2016

Despite the ageing of generating units, the production of local generators, along the years, has had a significant increase, except in 2014 where there was a considerable decrease due to the accident in TPP Kosovo A. The figure below presents the production of generating units for the period 2004-2016.

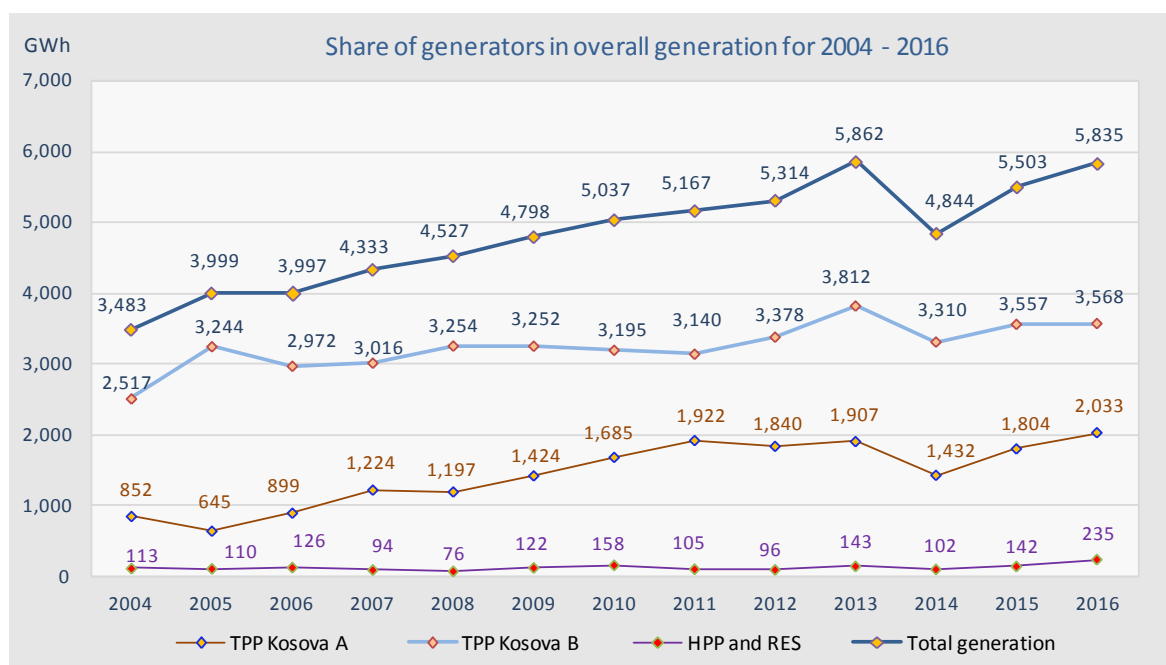


Fig. 5.4 Electricity generation for 2004 – 2016

5.3 Transmission System

KOSTT as the sole operator of the transmission system in Kosovo is responsible for the safety and reliability of operation of the electro-energetic system, making proper coordination regarding the operation and electricity flows in the system. Kosovo's electricity transmission Network represents an important regional hub and is tightly linked to the electro-energetic system of the region and Europe.

There are interconnection lines with neighbouring countries as follows:

- Albania, Macedonia, Montenegro and Serbia - line 400 kV,
- Albania and Serbia - line 220 kV and
- Serbia - two lines 110 kV

Interconnection line 400 kV SS Kosova B - SS Kashar (Tirana) was finalized in 2016 included issuing successfully for testing, but for political reasons has not yet been made entirely operational. The Agreement signed for secondary regulating frequency/power between KOSTT and OST in Albania also remains unimplemented since KOSTT has not yet begun to operate as a regulated area/block within ENTSO-E.



Fig. 5.5 Picture from inauguration of the 400 kV interconnection line Kosovo - Albania

The transformation capacities and transmission network lines by voltage level are shown in the following tables:

Tab. 5.5 Basic data for transmission network substations

Transformation (kV/kV)	Owner	No. of SS	No. of TR	Power (MVA)
400/220	KOSTT	1	3	1,200
400/110	KOSTT	2	2	1,200
220/110	KOSTT	3	9	1,350
220/35	Feronikel	1	2	320
220/35/10(20)	KOSTT	1	1	40
220/10(20)	KOSTT	1	1	40
110/35/10(20)	KOSTT	5	6	238
110/35/6.3	Trepça	1	2	126
110/6.3	Trepça	1	2	63
110/35	Ujmani	1	1	20
110/6.3	Sharri	1	2	40
110/10(20)	KOSTT	14	22	790
110/35	KOSTT	12	19	681
110/10	KOSTT	6	8	252
Total		50	80	6,359

Tab. 5.6 Basic data on transmission network lines

Voltage (kV)	Owner	Length (km)
400	KOSTT	279.5
220	KOSTT	231.8
110	KOSTT	841.8
Total		1,353.1

5.3.1 Electricity flows in transmission systems

In recent years, Transmission Network of Kosovo electro-energetic System is in a good operational state and meets consumption demands.

There is considerable electricity flows through the transmission network for imports and exports, as well as, for energy transited towards other countries. Electricity transit through Kosovo network is very high, about 32% compared to consumption and burdens the network by increasing network losses, depreciation of network and the need for maintenance.

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

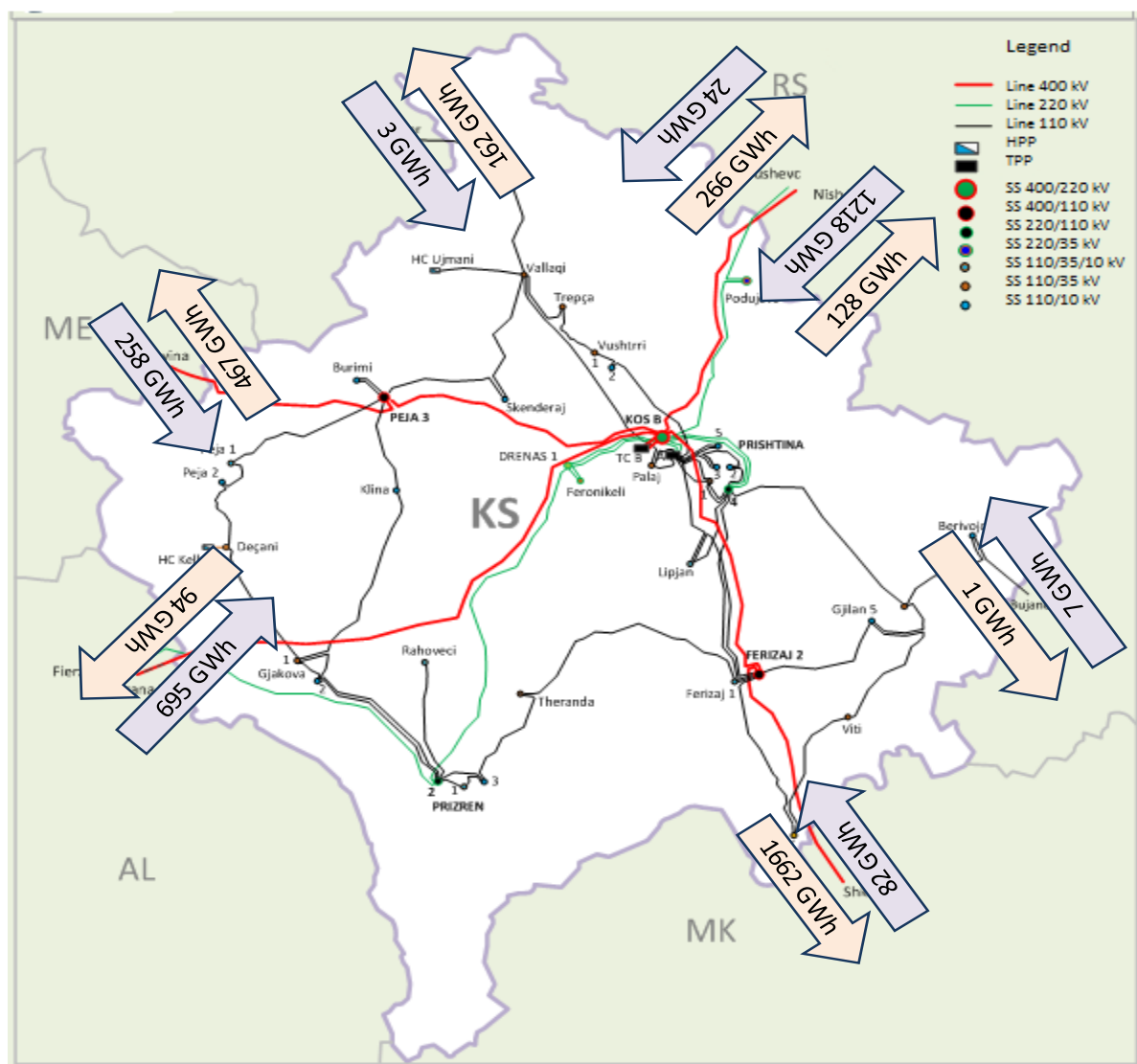


Fig. 5.6 Electricity flows in interconnection lines

Through ITC Mechanism is made the calculation for compensation of transit costs and obligations for imports and exports, and finally is made the reconciliation. Due to non-participation of KOSTT in the costs compensation mechanism caused by transit, these costs until the end of 2015 were covered by customers through regulated tariffs. For Kosovo, this report usually has been in favour of transit, considering the difference between transit and imports/exports. From 1 January, 2016,

KOSTT participates in ITC mechanism for calculation of compensation for transit costs and obligations for imports and exports.

Also related to the operation of the transmission network, the KOSTT inability for the allocation of transmission capacity should be mentioned due to non-recognition of KOSTT as area/block regulator. The allocation of capacity would create revenues for KOSTT which then can be used for the construction of transmission capacities where overloads appear in the network, as well as the construction of new transmission capacities.

Implementation of the signed agreement on electricity between Kosovo and Serbia has not yet been implemented although it was originally scheduled for 30 November, 2015, then for 8 February 2016, but has been subject to the licensing and operationalization of an electricity supplier in the north of Kosovo. This is not implemented for political reasons, and therefore the implementation of connection agreement of KOSTT in ENTSO-E still has not happened.

For safe operation of the transmission network, other factors have also an impact such as the generation, import and export, electricity consumption and transit of electricity.

The flow of energy from generation, transmission to the customer's distribution, as well as, the electricity flows towards the regional networks including transit, is shown in figure 5.7.

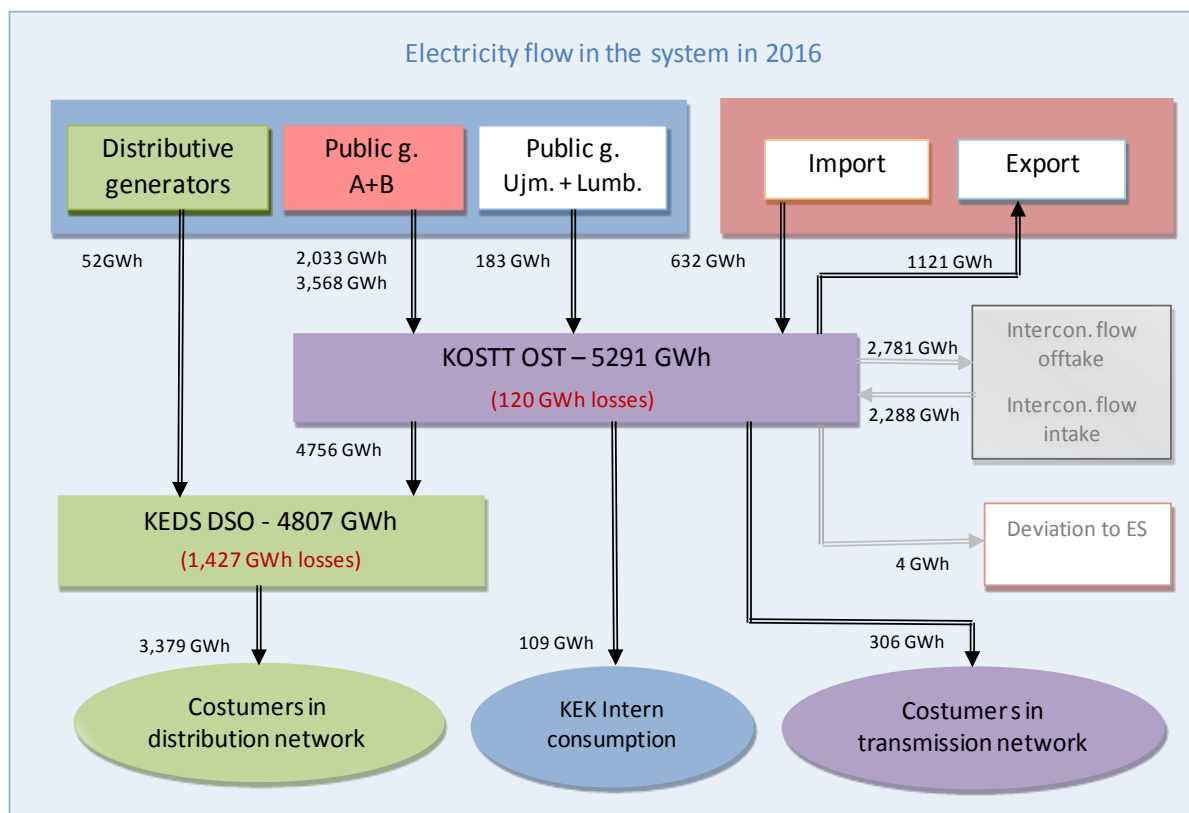


Fig. 5.7 Distribution of Electricity in the system

5.3.2 Investments in transmission system

For sustainable level of electricity supply, reduction of losses and improvement of secure and quality of services are required further investments in certain parts of the network, as well as adequate maintenance of existing capacities.

Investments in the transmission system can be categorized as finalized projects and projects that are under implementation.

Projects finalized in 2016:

- Rehabilitation of high voltage plants in SS Gjakova 2 and Prizren 3;
- Revitalization of substations SS 110kV, side of 35kV SS Gjakova 1;
- Installation of the third transformer SS 110/10 (20) kV Pristine 2;
- Installation of second transformer in SS 110 / 10kV and Berivojce and Vitia;
- Supply and installation of relay protection for auto-transformer bays in SS Prizren 2.

Projects in the process of implementation:

- Package Project "Improvement of transmission network, phase IV&V" funded by KfW /EC and KOSTT:
 - Rehabilitation of switches in SS 220/110 Pristine 4,
 - Installation of metering groups at interconnection points,
 - 2 fields 110 kV of GIS in SS Peja 1,
 - Transmission lines (rehabilitation of 110kV line, SS Peja 2 - SS Deçan),
 - Rehabilitation of 19 substations.
- Inclusion of all changes in existing substations and incorporation of new substations in SCADA/EMS in the Dispatch Center and Emergency Dispatch Center;
- Installation of metering groups in the new boundary between KOSTT and KEK /DSO;
- Installation of second transformer in SS 110/10(20) - Skenderaj and installation of second transformer in SS Burim;
- Revitalization of substations 110kV, side of 35kV (1 Gjilan and 1 Ferizaj);
- In the third quarter (Q3) of the year 2016 were signed contracts for projects that are funded by the EBRD/KOSTT. These projects are in the initial phase of implementation and should be finalized in the third quarter of 2018:
 - Substations GIS:
 - 110/10(20) kV – SS Pristine 6,
 - 220/110 kV - SS Pristine 4,
 - 110/10(20) kV – SS Mitrovica 2,
 - 110/10(20) kV - SS Theranda,
 - 220/10(20) kV – SS Drenas 2,
 - Power transformers:

- 2x40 MVA in SS Pristine 6,
- 2x40 MVA in SS Mitrovica 2,
- 2x40 MVA in SS Drenas 2,
- Transmission lines
 - single line 110 kV SS Rahovec – SS Theranda,
 - double line and cable 110 kV SS Fushë Kosova,
 - double line 220 kV Drenas 2,
 - double line 110 kV SS Mitrovica2,
 - double line and cable 110 kV SS Pristine 6 – SS Pristine 4.

5.3.3 Maximum load, and energy demand in the electricity system

Safe functioning of the transmission network can be evaluated with the transmission capacity and by analyzing and energy flows, especially in case of maximum consumption values. For this analysis usually are taken five (5) peak loads carried out at various hours of the year. The following table shows the values of maximum loads (peaks) for 2016.

Tab. 5.7 Peak load values in 2016

Maximum load (M W)	Hour	Date
1,160	18	31.12.2016
1,121	20	04.01.2016
1,100	23	30.12.2016
1,092	18	28.12.2016
1,086	18	23.12.2016

Highest load in Kosovo's electro-energetic system is registered on 31 December 2016 in the amount of 1,160 MWh/h, the peak value which is higher than in 2015 (1,129 MWh/h).

Consumption undergoes changes in daily and seasonal periods, and due to these changes, the system balancing becomes more difficult. To see this effect, especially in the case of Kosovo's electro-energetic system, the daily consumption diagram analysis is important which is presented for each hour of the day for the entire annual period.

In the diagram below is presented consumption and production, from where it can be seen that production is higher than at night consumption, while during the daylight period, especially in the evening hours, consumption has significant growth and is higher than production. So, within the same day, in daylight hours (higher fees) production does not cover demand and electricity import is needed, while at night (low tariff) has energy surplus which needs to be exported. The diagram varies according to season, so during the winter season the demand is higher than during the summer.

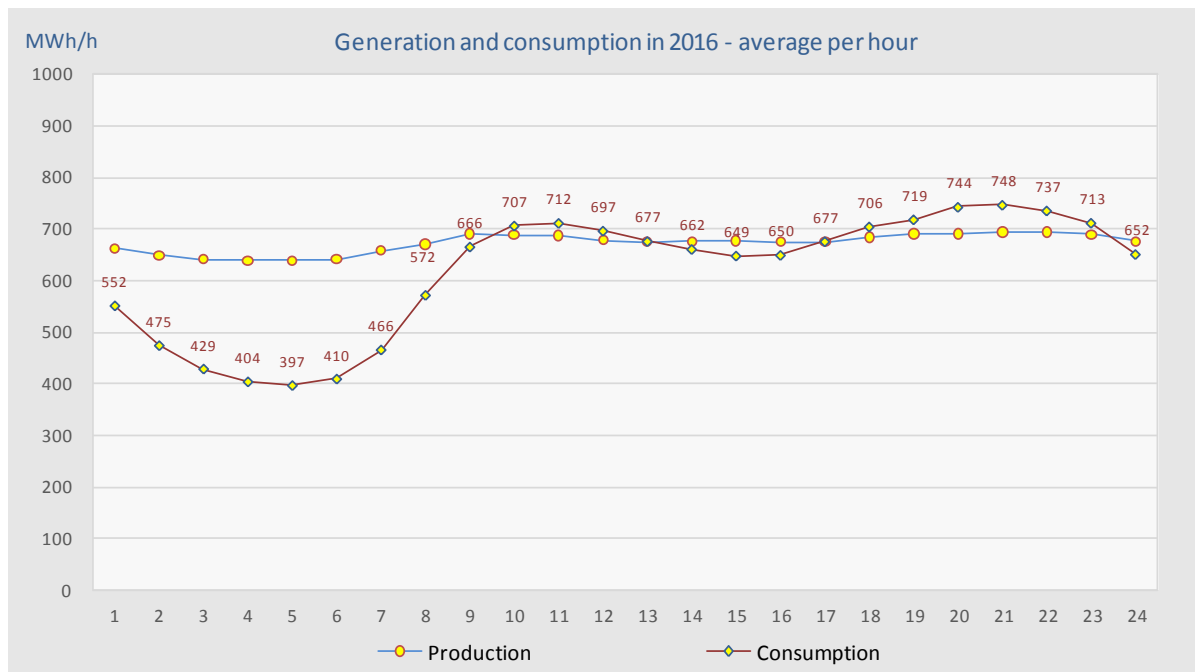


Fig. 5.8 Daily diagram extracted as annual average of 24 hours for the year 2016

Balancing the electricity system in our country is quite complex and difficult. This is especially affected by two main factors such as: inflexibility of the generating units and huge change in demand for electricity. Such differences pose a serious obstacle to consumption diagram of monitoring and maintaining deviation of system to the allowed limits. The difference between the average of daily maximums and minimums of consumption during the months of the year 2016 is shown in the below diagram.

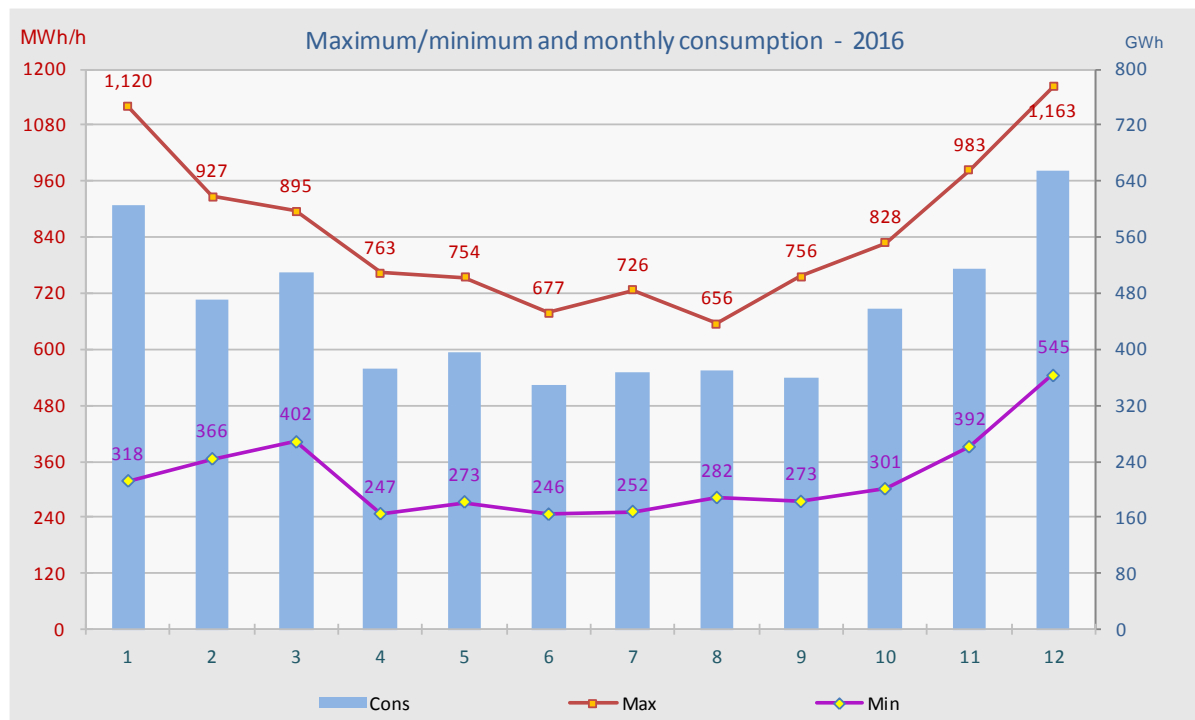


Fig. 5.9 Monthly average load, maximum/minimum in 2016

Load shedding due to the lack of electricity

Despite all efforts to eliminate the supply load shedding, in some cases in the absence of sufficient domestic production and difficulties of securing imports, raises the need for load shedding of the electricity supply.

As seen from the following table and the diagram, a declining trend of supply reduction emerges.

Tab. 5.8 Load shedding of electricity

Load shedding 2016	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
MWh	7,930	3,480	130	4,550	295	320	2,290	1,365	222	0	360	0	20,942

Load shedding vary from year to year tends to decrease, while in 2016 the load shedding have been at the level of 20.942 MWh.

Tab. 5.9 Load shedding during the years 2008 to 2016

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016
Load Shedding MWh	778,449	431,410	205,073	333,233	153,707	53,352	87,478	67,350	20,942

Graphical display of consumption reductions for the years 2008 - 2016 is given in the below figure.

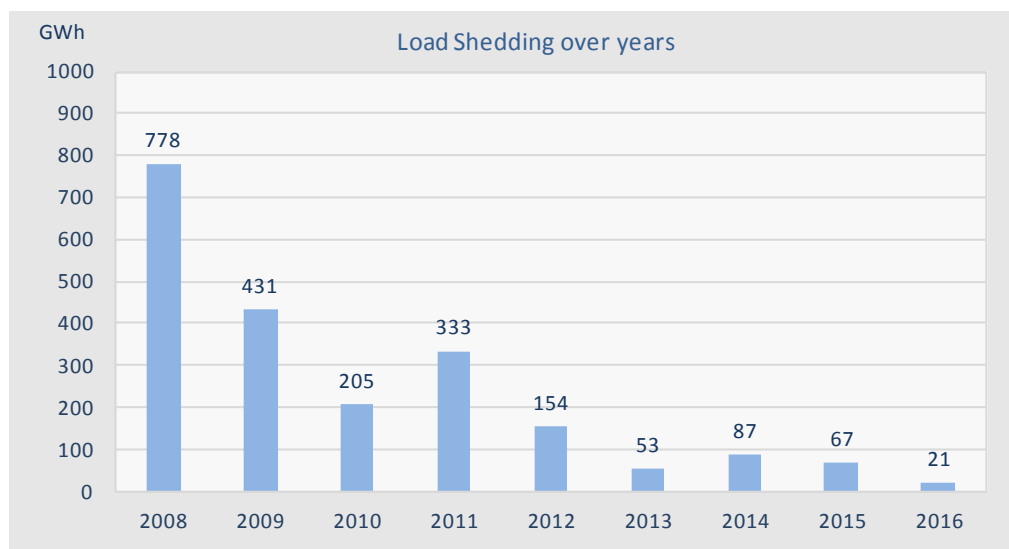


Fig. 5.10 Consumption reductions over the years 2008 - 2016

5.3.4 Demand and electricity losses in the transmission network

The total demand of electricity in 2016 was 5,342 GWh and represents a decrease of 4.2% compared with the year 2015, when it was 5.570 GWh. Compared with the forecast of the electricity balance in 2016 the demand is lower for 5.7%.

In the table 5.10 is presented the total demand and losses incurred in 2016 and compared with power balance.

Tab. 5.10 Total demand and losses in the transmission network in 2016

2016	Gross Demand Realization	Gross Demand Balance	Real./Balance ratio	Losses in Transmission Realization		Losses in Transmission Balance	
	M W h	M W h	%	M W h	%	M W h	%
January	595,093	611,893	97.25	11,831	1.99	11,551	1.89
February	469,123	507,213	92.49	9,880	2.11	9,819	1.94
March	511,120	518,697	98.54	11,216	2.19	10,411	2.01
April	369,068	480,284	76.84	6,405	1.74	8,892	1.85
May	391,048	427,536	91.47	9,359	2.39	10,124	2.37
June	341,200	396,559	86.04	8,233	2.41	9,787	2.47
July	357,195	408,982	87.34	8,625	2.41	7,566	1.85
August	357,457	398,053	89.80	8,613	2.41	7,258	1.82
September	347,989	402,446	86.47	8,209	2.36	8,502	2.11
October	449,749	442,440	101.65	10,196	2.27	10,006	2.26
November	509,976	476,393	107.05	11,740	2.30	8,849	1.86
December	643,479	596,464	107.88	16,151	2.51	11,153	1.87
Total	5,342,497	5,666,959	94.27	120,458	2.25	113,918	2.01

Electricity consumption has been continuously increasing until 2011, while in 2011 the consumption stabilized, with fluctuations from year to year, which can be seen in the following figure. In 2016 there was a decrease of total consumption compared to 2015, in which a substantial impact has been the reduction of Feronikel demand due to non operating during the largest period of the year.

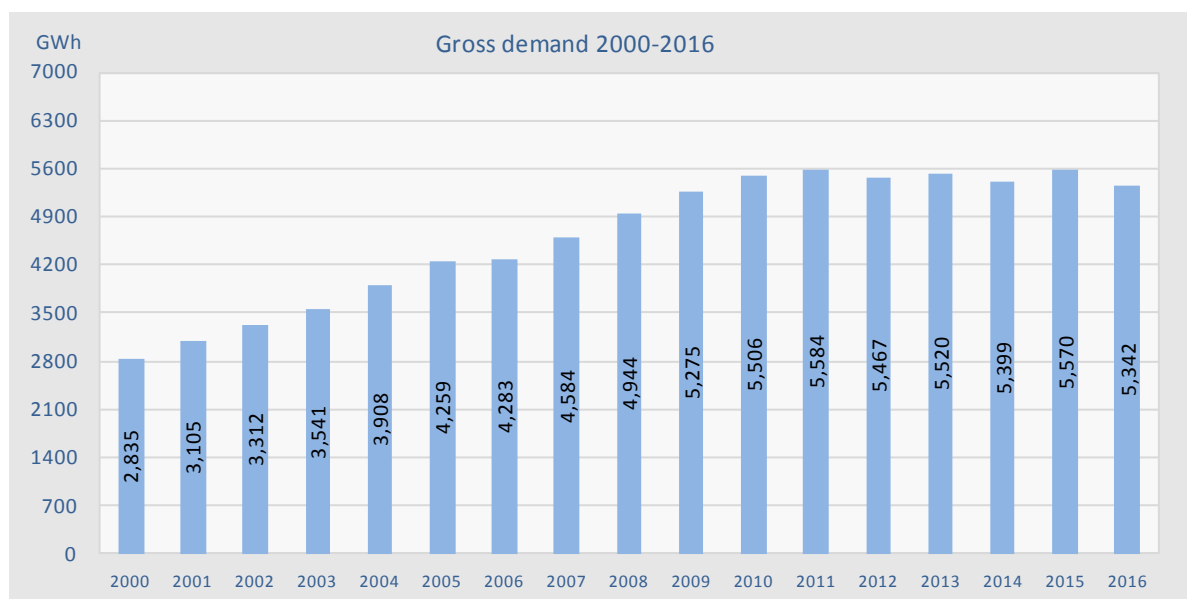


Fig. 5.11 Gross demand in the electricity system 2000-2016

The total demand of electricity is divided into customers consumption connected to the transmission network, consumption in the distribution system and owned consumption for the

needs of production plants, as well as transmission losses, and this is provided in the following table divided by customers for the year 2016.

Tab. 5.11 Demand according to costumers and energy losses

Gross energy demand	M W h
Gross consumption in distribution*	4,806,791
Ferronikeli	210,031
Trepça + Sharrce mi	96,408
Internal KEK consumption	108,810
Losses in transmission	120,458
Gross demand	5,342,497

(*) Received electricity in the distribution from the transmission + distribution production

It has to be emphasised that in the transmission network is also introduced one part of the produced energy by the power plants, which returns from the transmission network for the needs of its own generators. The values of electricity for own consumption in the year 2016, obtained from the transmission network is 111 GWh for generators of PP Kosova A and 25 GWh for PP Kosovo B.

Demand for electricity varies according to the consumption period but also according to customer categories; this is shown in graphical form in the figure below involving losses in the transmission and distribution network (technical and commercial losses).

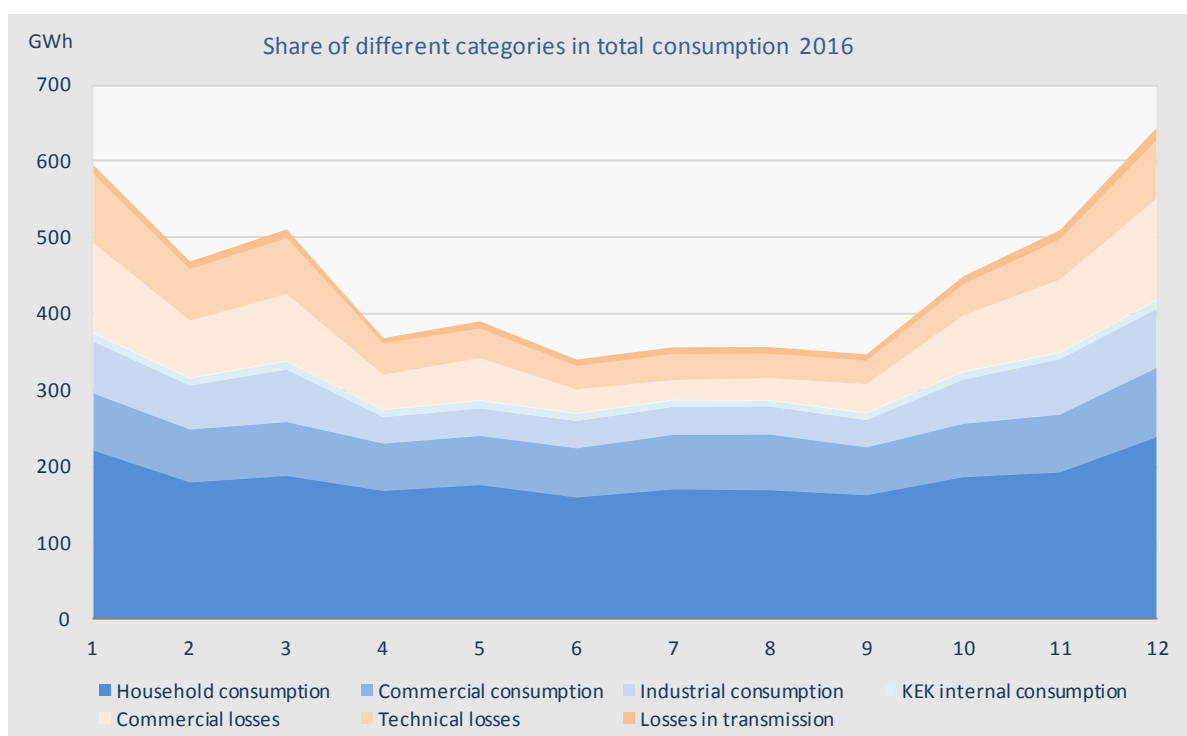


Fig. 5.12 Share of the different categories in total demand in 2016

In Figure 5.12 is presented the demand change according to seasons, in some categories is quite emphasised, e.g. consumption in households and commercial losses that are higher in the winter season, which is mainly due to the use of electricity for heating during winter.

Losses in the transmission system, in recent years, are at an acceptable level thanks to investments made by KOSTT and include losses caused by transit.

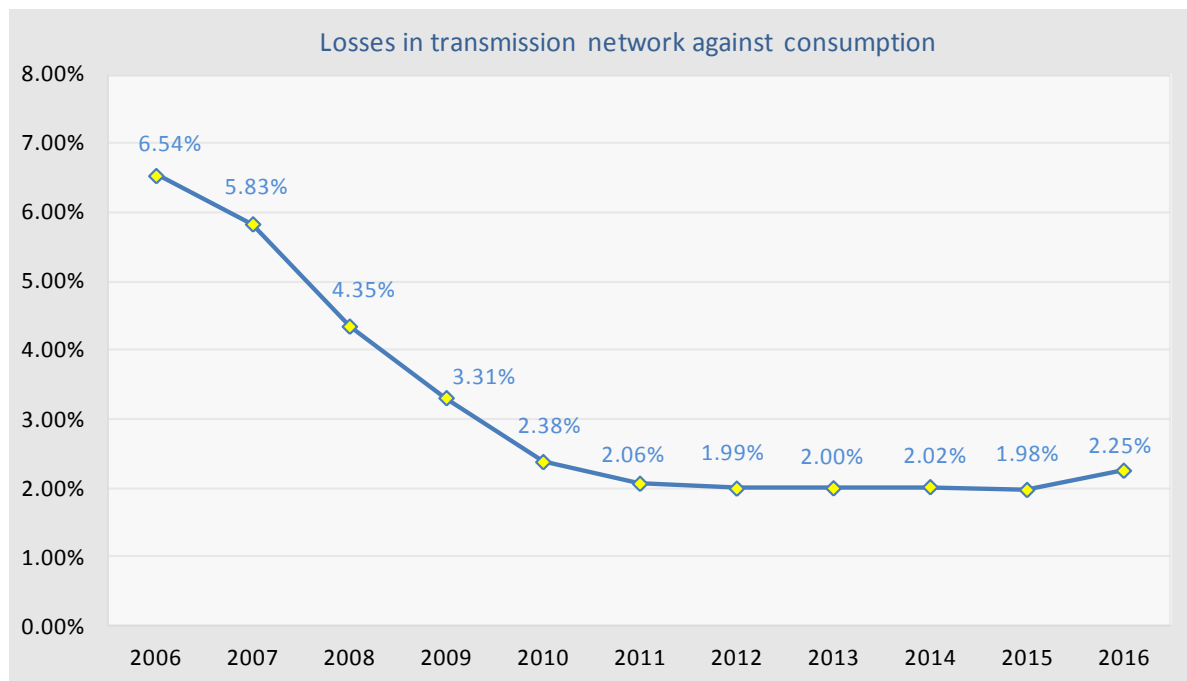


Fig. 5.13 Losses in percentage of the transmission network in 2006-2016

Losses in Kosovo transmission network are roughly in the same level with losses in transmission networks in the region and Europe. In the figure 5.13 are presented losses in percentage in the transmission network to a total demand of electro-energetic system, but does not include all of the energy input to the transmission system. So, to evaluate the losses to the load of the transmission network, the values should be calculated in percentage to the total energy provided into the transmission network, where besides generation (including own expenses of generators taken from the transmission network) is also added the energy provided through the interconnection transmission lines that are around **1.49 %**.

5.4 Electricity distribution system

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

Continued investments in the distribution network aimed at strengthening and expanding the transformative capacities and distribution system lines, but they have been insufficient to provide quality and reliable supply to customers.

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

Tab. 5.12 Substations and transformers according to voltage level in DSO

Transformation (kV/kV)	Owner	No. of SS	No. of TR	Power (MVA)
35/10	KEDS	44	94	660
35/10kV	Privat	8	12	62
35/6kV	Privat	5	8	43
35/0.4kv	Privat	14	20	16
10(20)/0.4	KEDS	2,287	2,380	1,242
10(20)/0.4	Privat	1,803	1,813	835
10/0.4	Privat	1,247	1,253	606
10/0.4	KEDS	2,865	2,865	868
6(3)/0.4	KEDS	65	65	9
Total		8,338	8,510	4,340

Tab. 5.13 Basic data of DSO network

Voltage (kV)	Owner	Air network (km)	Cable network (km)	Total (km)
35 kV	KEDS	482	18	500
10(20) kV	KEDS	1,388	301	1,690
10 kV	KEDS	4,165	904	5,070
6 kV	KEDS	42	8	50
3 kV	KEDS	4	1	5
0.4 kV	KEDS	16,870	2,277	19,147
Total		22,952	3,510	26,462

5.4.1 Investments in the distribution system

During 2016 the investments performed in the distribution network were mainly emergency investments and focused in the network of low voltage and overloaded transformers, without neglecting other necessary investments. Below is presented the summary of investments by groups that were conducted in 2016:

➤ Investment in the capacity building in substations of medium voltage (MV)

Eight new transformers of 8 MVA and three with 4 MVA are installed in the SS 35/10kV in different regions of Kosovo as presented below:

- SS Mazgit one transformer of 8 MVA and one TR 8 MVA is replaced with one of the same power;
- SS Pirana is increased transformer capacity from 4 MVA to 8 MVA;
- SS Dragash is increased transformer capacity from 4 MVA to 8 MVA;
- SS Shtërpce is increased transformer capacity from 4 MVA to 8 MVA;

- SS Shtime is increased transformer capacity from 6.3 MVA to 8 MVA;
- SS Xërxe is increased transformer capacity from 4 MVA to 8 MVA;
- SS Gjakova I, was changing the existing transformer of 8 MVA with a new TR of 8 MVA;
- SS Gjilan II, are replaced two transformers with power of 4 MVA with two new ones of the same power;
- SS Magura is added an additional transformer of 4 MVA.

The above mentioned investments have strengthened exits supplies, have increased capacity by adding the new ones, eliminated failures due to the very old equipment, and provided a safe working environment for the operators.

➤ **Investments in the medium voltage line 10 kV**

Investments in TL of medium voltage 10 kV, including those in the process are presented in the following:

- Construction of 10 kV transmission lines Gllobar and Shtrubullova, with a length of 15 km (out of them, 8.8km are underground network).
- Construction of transmission lines 10 kV Letanci and Llausha in Podujeva, with a length of 17.7 km.
- Construction of Klina transmission cables 1, Klina 2 and Klinavci with the length of 8 km (out of which 4.5 km are underground), hereby is removed the air network of medium voltage which passes through municipality of Klina.
- Constructions of dual network to the output of Ponosheci with length of 9.8 km, including the air and cable conductor where it will also be build a distribution plant.
- Construction of the new output TL Bablak, with the length of 10.5 km and a distribution plant. This output has 63 transformer stations of MV/LV.
- Construction of new transmission line which includes 1/3 of Drenica output, with total length of 14.5 km and which is supplied by the SS Magura, to be supplied then from the distribution plant in Komoran.

With these investments increases the voltage quality in the network, reduces technical losses and increases security of supply to consumers with electricity.

➤ **Investments in improving the low voltage network**

During 2016, total investments were carried out in 207 substations. From these investments is reinforced the low voltage network, whereby increased the supply of customer safety, technical and commercial losses are reduced and the access for reading electric meters was facilitated.

➤ **Investing in overloaded transformers of MV / LV levels**

During 2016 was invested in 173 transformers, thus increasing their total capacity from 35.33 MVA to 56.92 MVA. This was one of the emergency investments to prevent damage to these transformers from overloads.

➤ **Investments in the network 35 kV;**

New TL 35-kV Magura-Business Park is constructed around 10 km and is reinforced the TL 35 kV Kosova A - Drenas around 22 km. This investment has enabled the transfer of customer supply from SS Ferronikel to SS of distribution.

➤ **Maintenance investments;**

Maintenance investments include 75 km of new or replaced air or underground conductor. During the road works, with the request of the Ministry of Infrastructure, was invested in municipalities of Peja, Podujeva, Pristine, Gjilan, Ferizaj and Obiliq.

➤ **Investment in metering points;**

Also during 2016 is continued with the installation of electronic meters instead of electromechanical ones for final customers as well as for lines with the possibility of remote reading.

For customers with semi-indirect metering, KEDS is supplied with 730 multi-functional electrical meters with distance reading. While for customers with indirect metering, KEDS is supplied with 70 multi-functional remote reading meters.

The total investment of KEDS in 2016 was 23,645,000 Euros in total.

5.4.2 Consumption and distribution losses

DSO is organized into seven districts: Pristine, Mitrovica, Peja, Gjakova, Prizren, Ferizaj and Gjilan shown in the following figure. Consumption data, technical and commercial losses and other data are calculated according to the months but in some cases also by districts.



Fig. 5.14 Layout of districts of Kosovo distribution system

Electricity consumption in distribution in 2016 is carried out in the amount of 4.807 GWh, while in 2015 was 4.677 GWh, which represents an approximate increase of 2.8%.

The highest consumption was carried out in Pristine district with 31.3% of the total consumption in distribution, while the lowest consumption in Gjilan district with 8.3% of total consumption.

Consumption in the distribution system has continued to increase from 2000 and onwards, as well as the overall demand, and this growth is presented in Figure 5.15. From the year 2010 to 2013 is noticed a tendency of stabilization of electricity consumption in the distribution system, in 2014 consumption decreased compared to the previous year, while in 2015 and 2016 consumption increased over previous years.

About 85% of consumption is carried out by customers connected to the distribution network, and this makes important that losses in the distribution network to be analyzed with special care.

Electricity losses in the distribution network are still high and represent a concerning problem for the electricity sector. Furthermore, losses have a negative impact on the supply of customers and financial sustainability for supply and distribution system operators, as well as the entire energy sector.

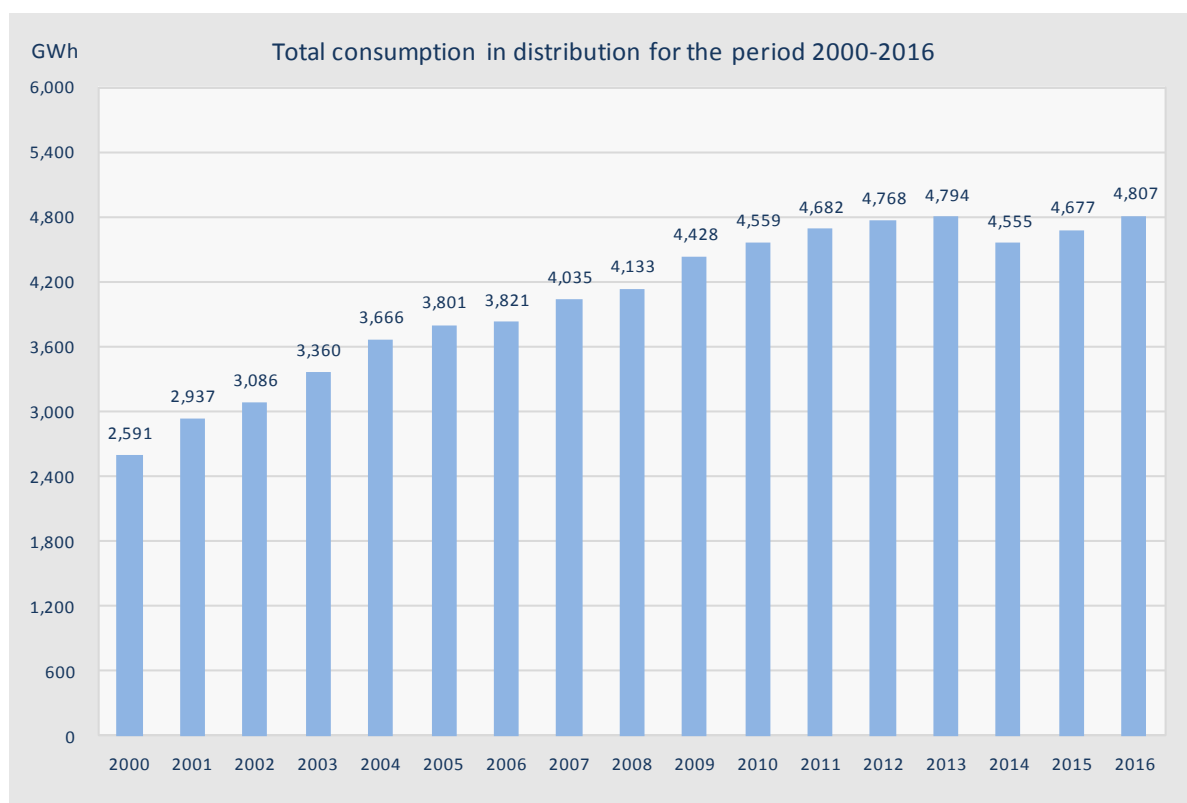


Fig. 5.15 Consumption in the distribution system 2000 - 2016

In the table 5.14 are presented gross consumption, as well as technical and commercial losses in distribution.

Tab. 5.14 Gross consumption and monthly losses in distribution for 2016

Consumption in distribution network	Electricity Load	Billed energy	Technical losses		Commercial losses		Total losses	
	M W h	M W h	M W h	%	M W h	%	M W h	%
January	530,213	321,830	91,079	17.18	117,303	22.12	208,382	39.30
February	415,084	271,535	68,821	16.58	74,728	18.00	143,549	34.58
March	446,707	285,090	74,596	16.70	87,021	19.48	161,617	36.18
April	342,181	254,074	43,175	12.62	44,932	13.13	88,107	25.75
May	360,033	265,009	40,331	11.20	54,693	15.19	95,024	26.39
June	312,563	249,214	32,699	10.46	30,650	9.81	63,350	20.27
July	329,526	268,017	36,009	10.93	25,500	7.74	61,509	18.67
August	330,597	268,470	33,933	10.26	28,193	8.53	62,126	18.79
September	320,360	250,683	32,663	10.20	37,014	11.55	69,677	21.75
October	399,599	284,320	42,380	10.61	72,899	18.24	115,279	28.85
November	446,900	297,908	54,081	12.10	94,911	21.24	148,992	33.34
December	573,029	363,267	77,250	13.48	132,511	23.12	209,762	36.61
Total realized	4,806,791	3,379,417	627,017	13.04	800,357	16.65	1,427,374	29.69
Total by balance	4,614,172	3,499,849	557,161	12.08	557,161	12.08	1,114,322	24.15

Technical losses according to data sent by the DSO reaches the value 13:04%, while in countries with developed networks these losses are in the level 5 to 7%. At the level of technical losses, the main impact has the ageing of the network, the length of the lines, the quality and type of

conductors and transformers, loading, as well as their maintenance. To reduce technical losses is required huge investments.

Commercial losses remain concern, which are quite high, consisting of 16.65% of total consumption in distribution. From this, the unbilled energy in northern Kosovo (252 GWh) consists about 5.24% of demand of the distribution, which part is dominated by the Serb minority, whereas compared to commercial distribution losses consists of 31.5%.

Electricity losses vary by districts and are presented in table 5.15.

Tab. 5.15 Distribution losses by districts for 2016

Consumption in districts	Electricity Load	Billed energy	Technical losses		Commercial losses		Total losses	
	M W h	M W h	M W h	%	M W h	%	M W h	%
Prishtina	1,502,912	1,124,183	184,163	12.25	194,565	12.95	378,728	25.20
Mitrovica	701,585	284,889	65,730	9.37	350,966	50.02	416,696	59.39
Peja	531,185	369,184	78,403	14.76	83,598	15.74	162,001	30.50
Gjakova	443,503	314,133	73,857	16.65	55,513	12.52	129,370	29.17
Prizreni	633,697	476,674	91,087	14.37	65,936	10.40	157,023	24.78
Ferizaji	592,654	468,619	84,666	14.29	39,369	6.64	124,035	20.93
Gjilani	401,256	341,735	49,111	12.24	10,410	2.59	59,520	14.83
Total	4,806,791	3,379,417	627,017	13.04	800,357	16.65	1,427,374	29.69

It may be noted that the reduction of commercial losses has positive impact in reducing consumption, also including the network load and technical losses.

At the beginning of 2012 ERO has determined the allowed losses boundary distribution based on the level of the year 2011 losses as a starting point but also the trend of reduction in previous years, determining the degree of reduction of losses of 3% points for three years and 2.5% points for three other years.

The cost of energy loss is quite high and is covered by customer tariffs that are regular payers of electricity. The operator of distribution system made continuous efforts to reduce distribution losses, especially the commercial ones, having in mind that the implementation of their reduction requires less investment. Despite the reduction in losses over the years, the DSO has failed to meet the targets set by the ERO, which means that the cost of not meeting these targets is borne by DSO itself. Since 2006, when commercial losses were 30.21%, they are reduced to 16.65% in 2016, which is a significant reduction; while for technical losses have dropped by 18.15% in 2006 to 13.04% in 2016.

Below is presented the chart with the data for technical, commercial and general losses from the year 2006 to 2016.

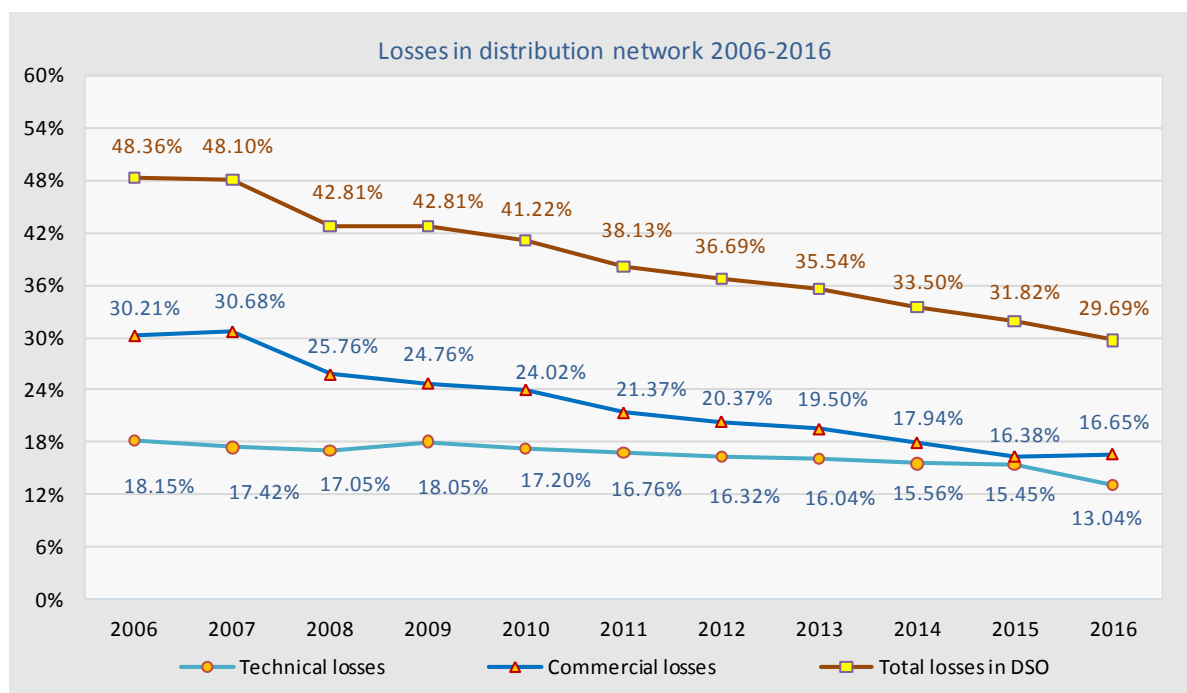


Fig. 5.16 Technical and commercial losses in distribution network for the period 2006-2016

5.5 Electricity Supply

Electricity supply is provided by a single supplier - The public supplier. During 2016 public supplier has supplied customers at regulated prices. However, from 1 October, 2016 the largest customer - Feronikeli which is connected at 220 kV voltage has passed to unregulated supply price.

Participation of consumption in household is still dominant - about 60% of the total billed consumption. Participation in percentage of the consumption categories compared with total consumption (shown with loss and without loss distribution) is presented in the figures below.

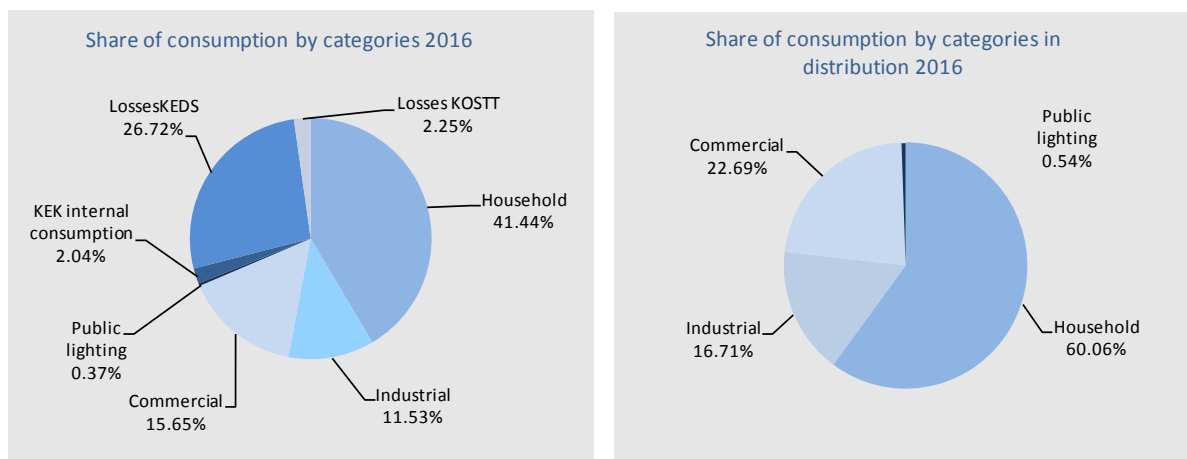


Fig. 5.17 Participation of consumption categories in the distribution with and without losses in 2016

5.5.1 Billing and collection

During recent years, billed energy has been steadily increasing; especially collection has had a significant increase. The level of collection against billing in distribution for 2016 was 96.85%, while the total when calculating also the customers connected in the transmission network to whom the collection is 100%, the total collection reaches 97%.

Consumption categorized according to the level of voltage and customer groups that consume electricity for 2016 is given in Table 5.16.

Tab 5.16. Billed electricity by tariff categories 2016

Consumption by categories 2016	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh
220 kV	210,031	37,103	31,538	33,468	1,969	2,877	2,497	2,556	2,607	2,478	21,695	35,508	35,736
110 kV	96,408	5,395	3,839	9,252	9,707	9,265	8,924	8,547	8,563	8,706	8,642	7,782	7,785
35 kV	31,630	2,353	2,241	2,441	2,272	2,387	2,567	3,045	2,869	2,806	2,960	2,745	2,944
10 kV	277,989	22,847	19,805	23,397	20,627	21,525	21,665	22,508	22,694	21,573	24,521	26,311	30,515
Household	2,213,788	221,412	179,542	188,047	168,419	176,114	159,878	170,479	169,331	162,790	186,402	192,654	238,719
0.4 kV I	328,588	25,414	23,084	26,710	24,794	25,999	26,352	28,757	29,070	25,458	28,340	29,583	35,027
0.4 kV II	507,568	47,832	45,184	42,759	36,413	37,553	37,299	41,950	43,130	36,523	40,239	44,744	53,942
Public lighting	19,855	1,973	1,679	1,735	1,548	1,431	1,453	1,278	1,376	1,533	1,858	1,871	2,119
Total	3,685,856	364,328	306,912	327,810	265,750	277,151	260,635	279,120	279,640	261,867	314,657	341,198	406,789

Billed energy expressed in monetary value for 2016 is € 258.2 million, while collection is € 250.4 million. These values include VAT.

Tab. 5.17 Billing and collection in 2016

2016	Load	Realization	Billing	Collection	Coll./Bill.
	MWh	MWh	€	€	%
Distribution	4,806,791	3,379,417	246,938,405	239,157,780	96.85%
Treпча+Sharrcemi	96,408	96,408	5,080,308	5,080,308	100.00%
Ferronikeli	210,031	210,031	10,181,368	10,181,368	100.00%
Total	5,113,230	3,685,856	262,200,081	254,419,456	97.03%

Table 5.18 shows billing and collection in distribution by months for 2016. Also, the table shows that in a few months the ratio collection/billing is higher than 100% value, which means that during these months the billed electricity is collected for previous months and older debt.

Tab. 5.18 Billing and collection by months in distribution for 2016

Distribution 2016	Load	Realization	Billing	Coll./Bill.	Coll./Bill.
	MW h	MW h	€	€	%
January	530,213	321,830	27,612,952	22,869,949	82.82%
February	415,084	271,535	23,346,919	23,644,853	101.28%
March	446,707	285,090	24,674,764	22,369,635	90.66%
April	342,181	254,074	14,241,016	21,666,444	152.14%
May	360,033	265,009	15,895,650	20,449,397	128.65%
June	312,563	249,214	15,073,831	15,564,873	103.26%
July	329,526	268,017	16,010,102	15,324,037	95.71%
August	330,597	268,470	16,042,433	18,566,321	115.73%
September	320,360	250,683	15,092,568	15,631,343	103.57%
October	399,599	284,320	24,293,161	16,047,805	66.06%
November	446,900	297,908	24,954,085	21,433,770	85.89%
December	573,029	363,267	29,700,924	25,589,354	86.16%
Total	4,806,791	3,379,417	246,938,405	239,157,780	96.85%

The electricity level billed and collected from 2008 to 2016 is shown in the following figure where a steady increase from year to year is marked.

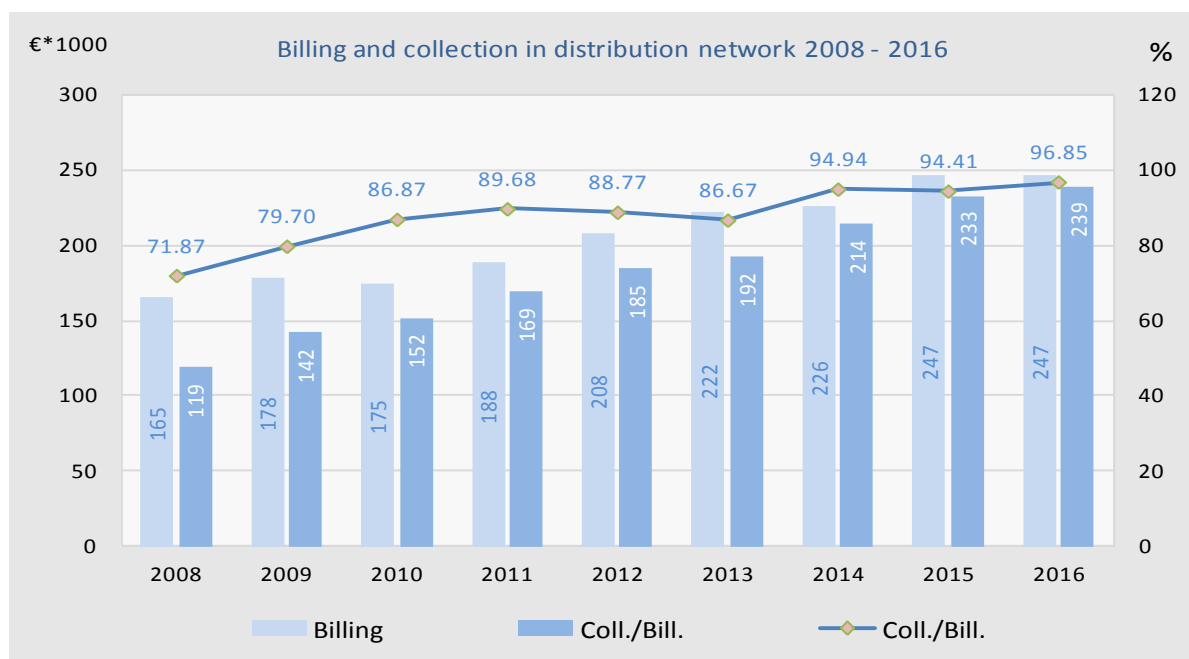


Fig. 5.18. Billing and collection in distribution over the years 2008-2016

The average selling price varies by categories and districts. Change of the average selling price is according to customer type (household and non-household customers), the voltage level at which the customers are connected, consumption of electricity at different rates according to the time during which energy is consumed, and quantity of the energy consumed by a customer (due to tariff

blocks). The average price changes for household and non-household customers, and the average selling price without VAT according to these categories can be seen in the figure 5.19.

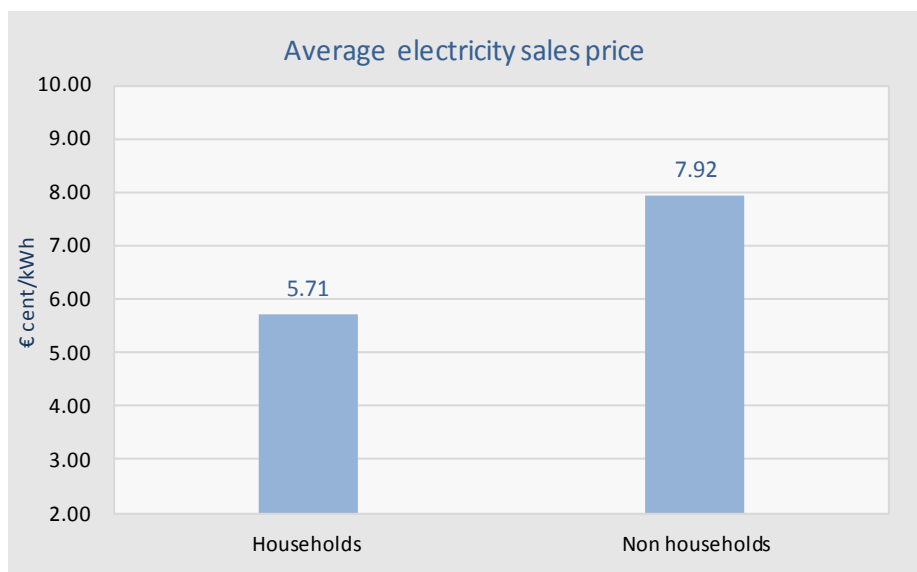


Fig. 5.19 The average selling price of electricity 2016

The figure below shows the average price for household customers for the first six months of 2016 for some countries, issued by Eurostat, since there is still lack of data for the second half.

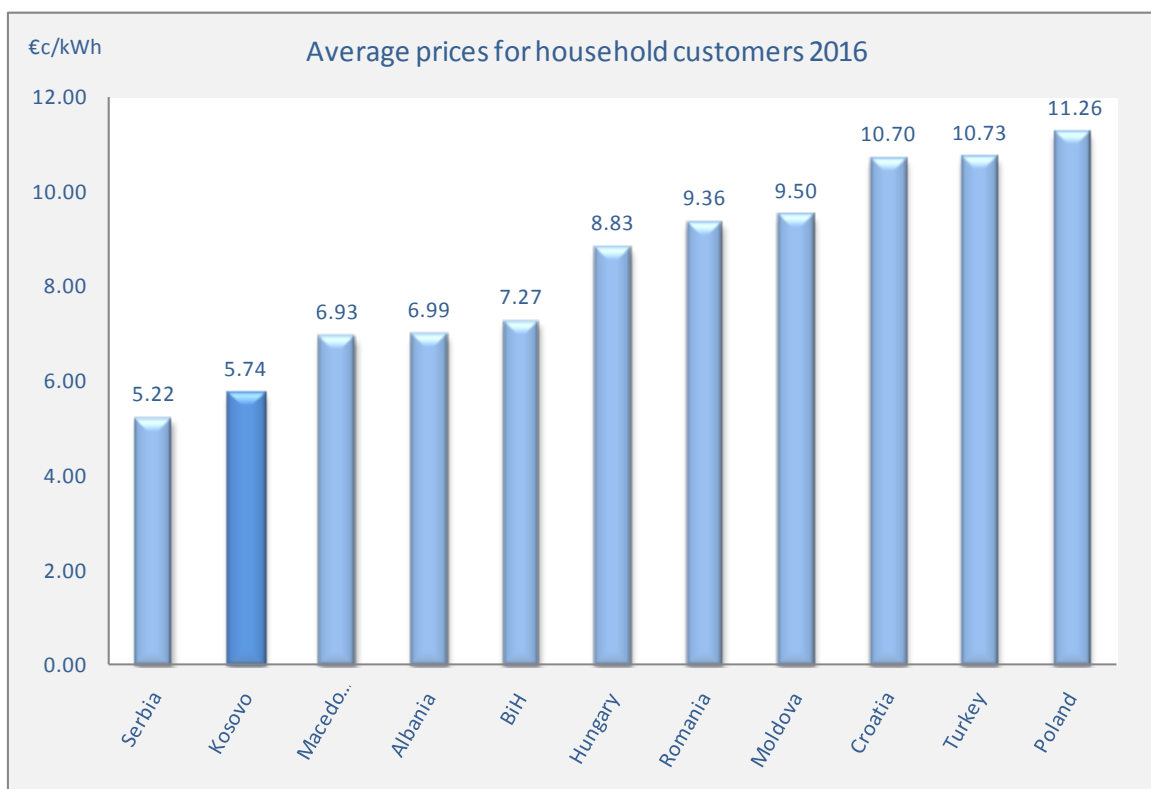


Fig. 5.20 Average prices for household customers for the first 6 months 2016

5.6 Import and export of electricity

Given the configuration of generating units for consumption tracking and balancing the electricity system, in addition to domestic production, import of electricity is also required, while in some cases surpluses appear, that need to be exported.

5.6.1 Import of electricity

To cover the needs of customers, in addition to production from domestic generators, and especially for peak coverage it is necessary to import electricity. To meet these needs, in 2016, KESCO has imported electricity through commercial contracts related to electricity importers, but an amount is received in the form of exchange of electricity with regional countries systems.

Imported electricity, with commercial contracts in 2016 was 458.841 MWh worth € 21,851,620, with an average price of 47.62 €/MWh, while the imported electricity in 2015 was 684.308 MWh. Data on imports and exchanges are shown in the following table.

Tab. 5.19 Import of electricity with contracts and as exchange 2016

Month \ Import	Contract			Exchange	Total
	Quantity MWh	Price €/MWh	Value (€)	Quantity MWh	Quantity MWh
January	121,586	51.44	6,254,808	69,390	190,976
February	49,100	50.34	2,471,575	640	49,740
March	745	32.10	23,918	0	745
April	24,852	35.28	876,865	0	24,852
May	0	0.00	0	0	0
June	0	0.00	0	1,950	1,950
July	72,059	42.56	3,066,605	0	72,059
August	68,935	41.41	2,854,448	0	68,935
September	850	42.96	36,513	0	850
October	0	0.00	0	0	0
November	63,000	49.52	3,120,023	3,425	66,425
December	57,714	54.53	3,146,866	0	57,714
Total	458,841	47.62	21,851,620	75,405	534,246

Besides import contracts, electricity was also imported through exchanges (electricity with electricity) in the amount of 75.405 MWh. The entire exchange in 2016 was conducted between KEK and the Albanian Energy Corporation (AEC). Compared to 2015 (31.010 MWh), the quantity imported in the form of exchange is higher for 143%.

Since October 2016 Feronikeli operated as customer with unregulated prices and KESCO on its behalf has imported electricity in the amount of 98.043 MWh worth a total of € 3,650,970, with an average price of 37.24 €/MWh.

Tab. 5.20 Imports of electricity in 2016 for unregulated customers

Import at unregulated prices	Contract	
	Quantity MWh	Value (€)
October	23,379	888,402
November	36,720	1,358,640
December	37,944	1,403,928
Total	98,043	3,650,970

Total electricity imported with contracts for the needs of regulated and unregulated customers in 2016 was 556.884 MWh, shown in the following table.

Tab. 5.21 Total electricity imports in 2016 for all customers

Total Import	Contract			Exchange	Total
	Quantity MWh	Price €/MWh	Value (€)	Quantity MWh	Quantity MWh
Regulated customers	458,841	47.62	21,851,620	75,405	534,246
Unregulated customers	98,043	37.24	3,650,970	0	98,043
Total	556,884	45.80	25,502,590	75,405	632,289

The following figure shows the import with contracts, including exchange conducted in 2016 for regulated customers.

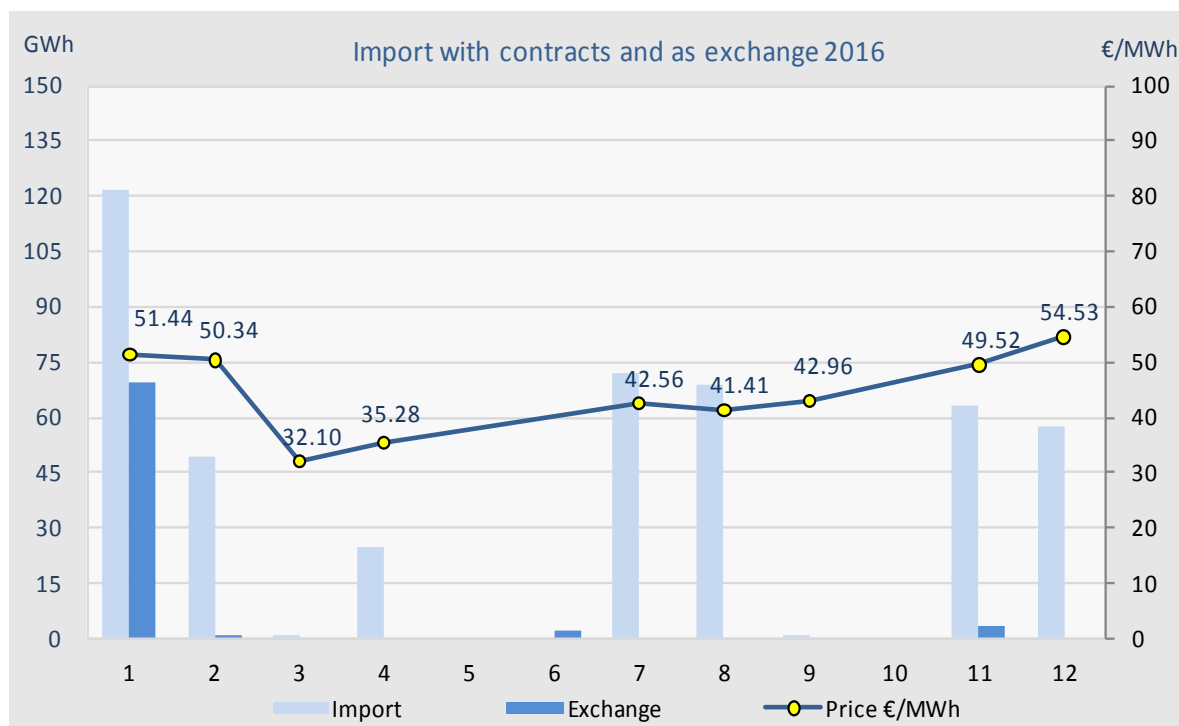


Fig. 5.21 Import of electricity with contracts and exchange for 2016

5.6.2 Export of electricity

Given the consumption curve, which represents the consumption amount during the hours in a day, rather than the flexibility of generating units to track consumption, in addition to the lack of electricity in the system, surpluses appear often, in many cases this occurs on the same day. So in a few hours on the same day there are energy imports, while at other hours electricity surpluses appear that need to be exported.

Electricity surpluses appear mainly during night hours (at the time of low tariff). In these periods, surpluses also appear at regional systems, consequently, supply for energy increase at night, and this affects the export prices to become significantly lower than the import prices.

Electricity exported with commercial contracts during 2016 was 1,064,184 MWh in the amount of € 31,633,212, with an average price of 29.73 €/MWh, while electricity exported in 2015 was 552.520 MWh, with an average price of 33.31 €/MWh. The amount of exported electricity is 92.6% higher than in 2015, while the average price has been about 12% lower compared to 2015.

Tab. 5.22 Export of electricity with contracts and as exchange 2016

Month Export	Contract			Exchange	Total
	Quantity MWh	Price €/MWh	Value (€)	Quantity MWh	Quantity MWh
January	13,240	29.14	385,779	770	14,010
February	76,091	23.40	1,780,719	1,085	77,176
March	65,005	21.15	1,374,926	1,650	66,655
April	94,795	24.94	2,364,245	0	94,795
May	180,587	26.27	4,743,299	3,720	184,307
June	216,930	29.75	6,454,011	9,860	226,790
July	25,780	30.98	798,632	6,595	32,375
August	18,983	26.27	498,696	2,869	21,852
September	154,616	32.83	5,076,678	29,402	184,018
October	153,597	39.30	6,036,622	0	153,597
November	31,280	31.19	975,764	1,030	32,310
December	33,280	34.37	1,143,840	30	33,310
Total	1,064,184	29.73	31,633,212	57,011	1,121,195

Export with contracts was carried out with different traders, while export as exchange, in 2016, was carried out only by KEK with AEC.

The figure below shows the export with contracts and as exchanges.

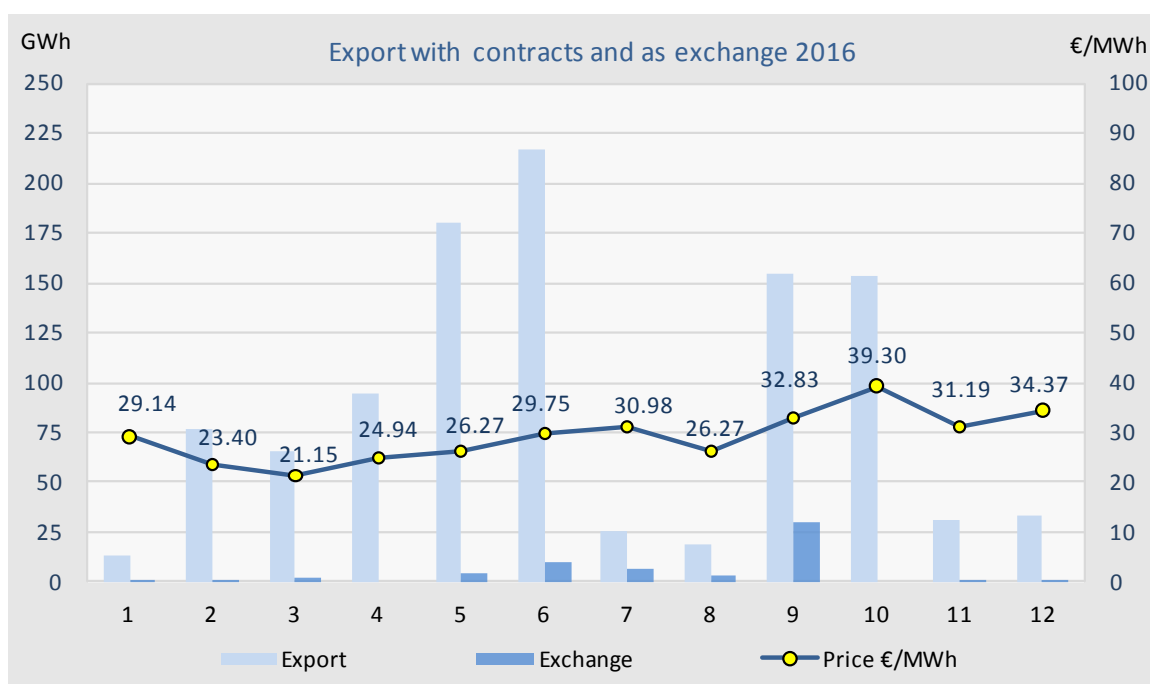


Fig. 5.22 Export of electricity with contracts and as exchange for 2016

Given the amount of imported and exported electricity in 2016, it is noted that Kosovo has been a net exporter of electricity, with an amount of 488.906 MWh, shown by months in the following figure.

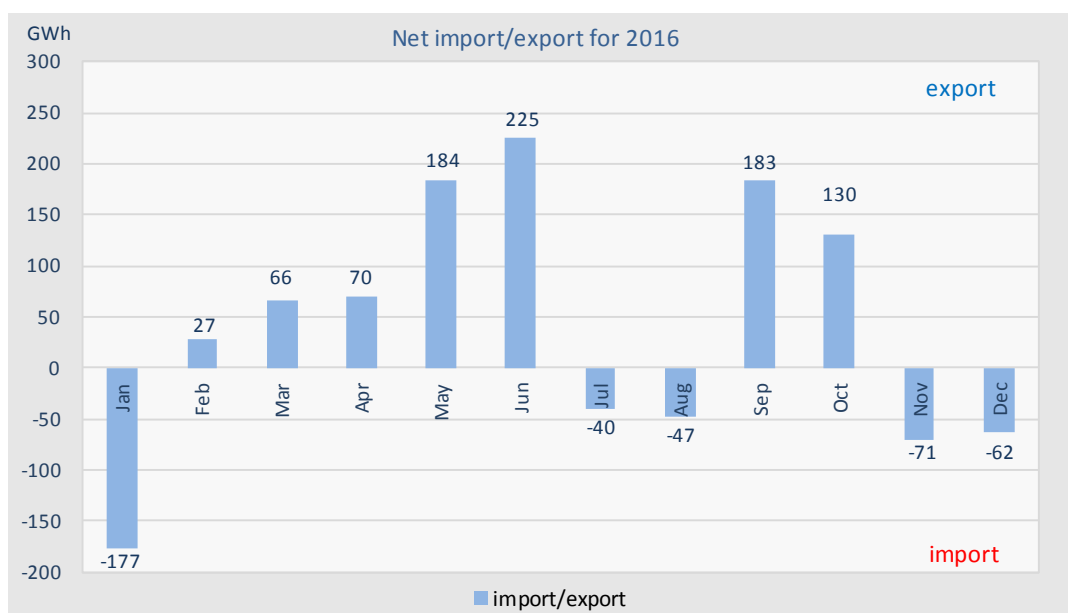


Fig. 5.23 Import and export of electricity in 2016

The quantity imported during 2000 - 2016 was 10.431 GWh, at an average price of 55.78 €/MWh, which represents the total cost of € 551,886,791 to electricity import. While the export quantity from 2000 - 2016 is 5.914 GWh at an average price of 31.76 €/MWh, in monetary value of around 147,756,453 €, which applies only to exports from 2005 onwards, because before this period the only exchanges were electricity for electricity.

The electricity import and export price during 2000 - 2016 has marked ups and downs. Below is the picture showing the import and export prices from 2000 to 2016.

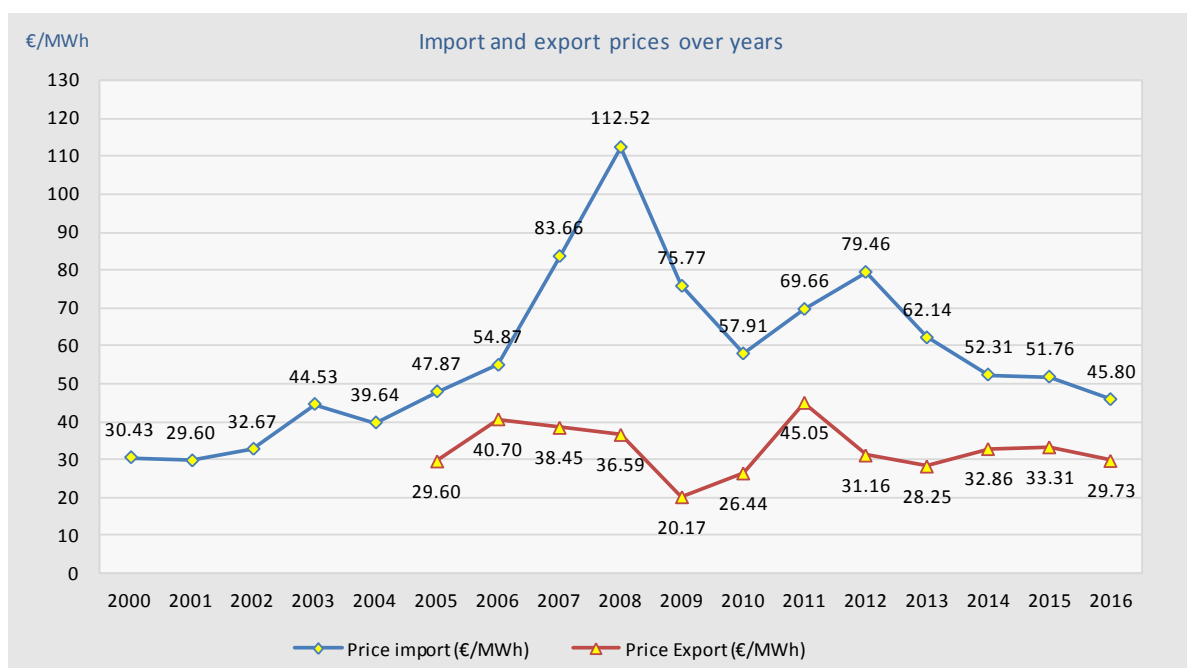


Fig. 5.24 The average import and export price over the years

5.7 Quality Standards of electricity supply and services

Standards of quality of electricity supply and service are an important element of the regulation of the electricity sector. These standards are defined so that the quality of supply and service of electricity to customers continuously improves by the electricity enterprise.

Standards of quality of electricity supply and service are defined and monitored according to the following areas:

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

5.7.1 Continuity of supply

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

Continuity of electricity supply in 2016 is monitored by ERO for both system operators: Transmission System and Market Operator (TSMO) and Distribution System Operator (DSO).

Continuity of supply is related to the availability of electricity, and is measured by indexes:

- SAIDI - System average interruption duration index;
- SAIFI - System average interruption frequency index; and
- ENS – Energy unserved.

Measuring indexes reported by TSO

Measuring indexes reported by KOSTT for the standards of quality of electricity supply and service for 2016 are shown below.

- SAIDI - for planned interruptions in the transmission system has been 203.13 minutes;
- SAIDI - for unplanned interruptions in the transmission system has been 58.16 minutes;
- SAIFI - for planned interruptions in the transmission system has been 1.23;
- SAIFI - for unplanned interruptions in transmission system has been 1:04;
- ENS - for planned interruptions in the transmission system has been 1,777 GWh; and
- ENS - for unplanned interruptions in transmission system has been 1.15 GWh.

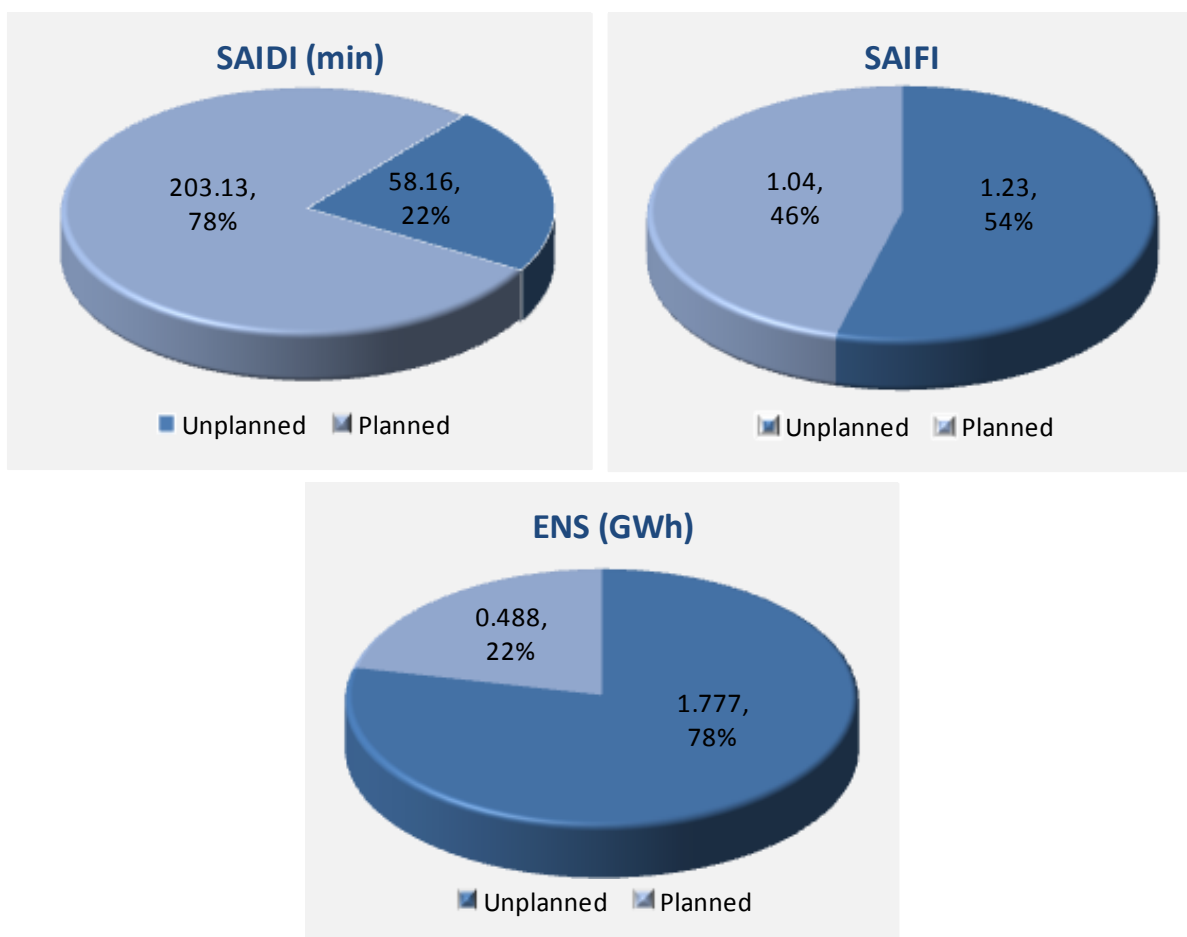


Fig. 5.25 Measurable indicators SAIDI, SAIFI and ENS by KOSTT for 2016

The figure below shows the measuring indexes, reported by KOSTT for the standards of quality of electricity supply and service during 2012-2016.

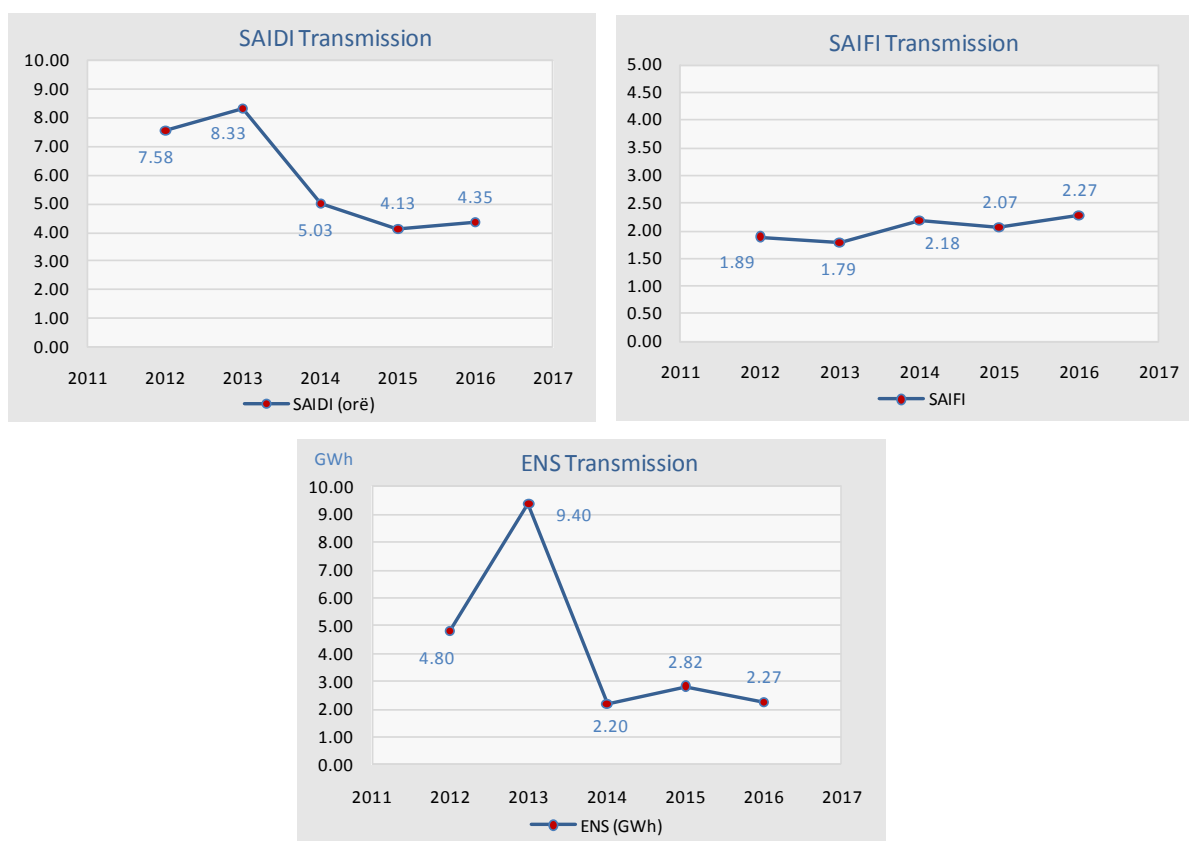


Fig. 5.26 SAIDI, SAIFI and ENS by KOSTT indicators for the period 2011-2016

According to data reported by KOSTT for measuring indexes SAIDI and SAIFI, it is concluded that there is an increase of these indices during 2016 compared to 2015, mainly due to works carried out in the transmission network. While regarding unserved energy - ENS, during 2016 there is a discount of 24.50% from 2015, mainly because of the improvements made to the transmission network.

Measuring indexes reported by the DSO

Measuring indices reported by the DSO on standards of quality of electricity supply and service for 2016 are presented below.

- SAIDI - for planned interruptions in the distribution system has been 82.34 hours;
- SAIDI - for unplanned interruptions in the distribution system has been 49.32 hours;
- SAIFI – for planned interruptions in the distribution system has been 44.24 ;
- SAIFI - for unplanned interruptions in the distribution system has been 27.32;
- ENS - for planned interruptions in the distribution system has been 46.29 GWh; and
- ENS - for planned interruptions in the distribution system has been 25.94 GWh.

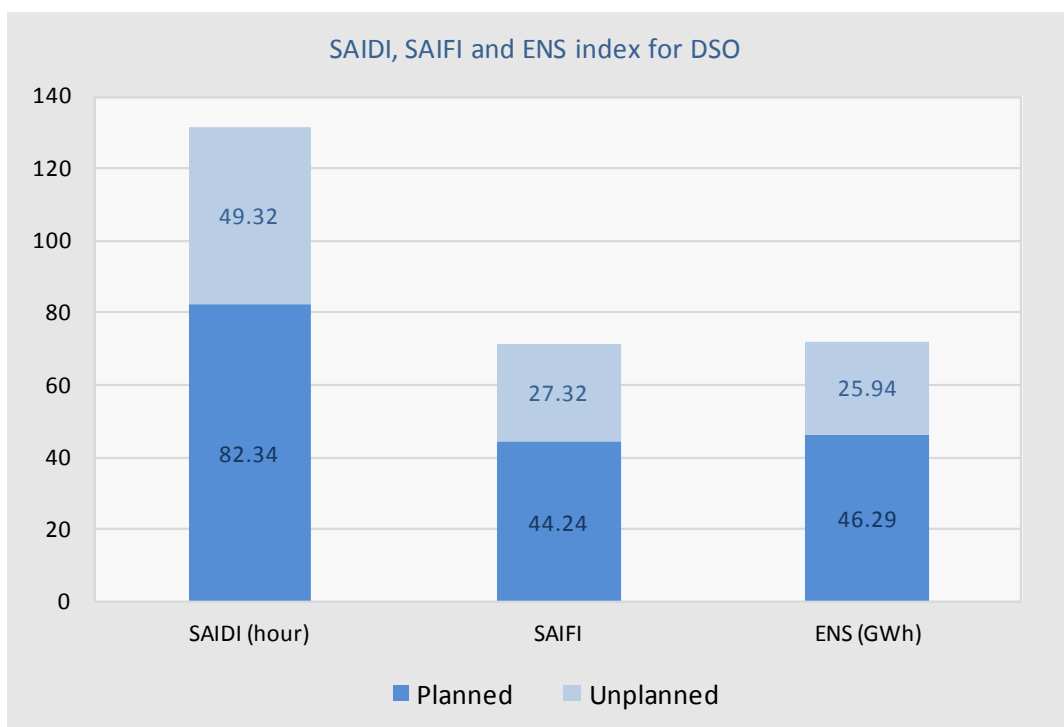


Fig. 5.27 Measuring indexes SAIDI, SAIFI and ENS for DSO for 2016

In the following figures we have shown measuring indices reported by the DSO on standards of quality of electricity supply and service during 2011 - 2016.

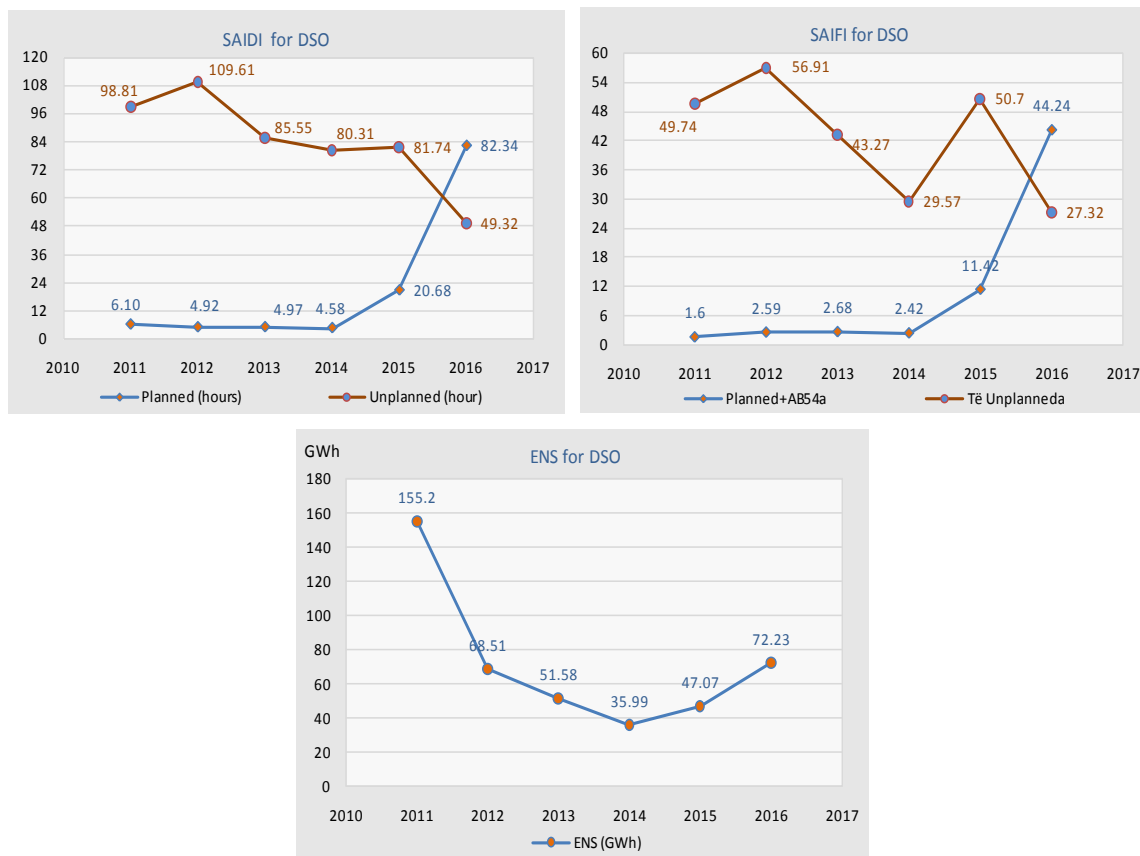


Fig. 5.28 Indicators SAIDI, SAIFI and ENS from the DSO for the period 2011-2016

From the above data is noted that measuring indices SAIDI, SAIFI and ENS in 2016 are generally not improved compared to the previous year, and that because during 2016 the DSO has carried out the largest number of planned outages in order to maintain the electricity network. However, in October 2016, after numerous customer complaints, ERO started monitoring these planned outages of electricity conducted by DSO and during monitoring found the following irregularities:

- Electricity supply worsening due to planned outages under the pretext of regular maintenance which in most cases were not conducted;
- Unreasonable periods of outages, with special emphasis during 16:00-20:00 period of time, and with a duration of four hours for each maintenance, regardless of the nature of work;
- Frequently outages of the same exits within the month, without any reason of technical nature;
- Inadequate description of maintenance, which in most cases, the scheduled maintenance is described with the general term - Audit;
- Inadequate planning of maintenance teams (involvement of the same teams for maintenance and breakdowns);
- Mismatches between the plans submitted to the ERO and plans published by KEDS.

It is worth mentioning that as a result of these irregularities, the ERO Board has taken a temporary measure to prevent all outages except those outages that endanger the security of electricity supply to the final decision.

According to the data reported for SAIDI measuring index in 2016, it is noted that there is no improvement of this index compared to 2015, which according to the data shows that overall in 2016 there is an outages increase of 28.55% compared to 2015. It should be noted that during the most detailed analysis of the index - SAIDI, is noted that in 2016 there was a planned outages increase of 298.16% compared to 2015, while there is a decrease for unplanned outages to 65.73% in 2016, compared to 2015.

An analysis of the SAIFI measuring index shows that during 2016 there is no improvement compared with 2015, which according to the data shows that in 2016 we increased the frequency of electricity outages per customer - SAIFI for 15.20% compared to 2015.

In 2016 there is an increased frequency of planned outages per customer (SAIFI) to 287.40% compared to 2015, whilst there is a frequency decrease of unplanned outages per customer to 85.60% compared to 2015.

During 2016 energy not supplied (ENS) in general has not improved compared to 2015, according to the data we can see that in 2016 there is an increase of 53.44% compared to 2015. In 2016 there is an increase of unserved energy for planned outages to 329.67% compared to 2015, while there is an unserved energy decrease for unplanned outages of 39.94%, compared to 2015.

5.7.2 Quality of voltage

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

During 2016 the number of complaints filed by customers regarding the voltage quality in the DSO has been 349, out of which 278 were solved or 79.66%, 31 are in the screening process or 8.88%, whereas 40 complaints or 11.46% have remained unsolved.

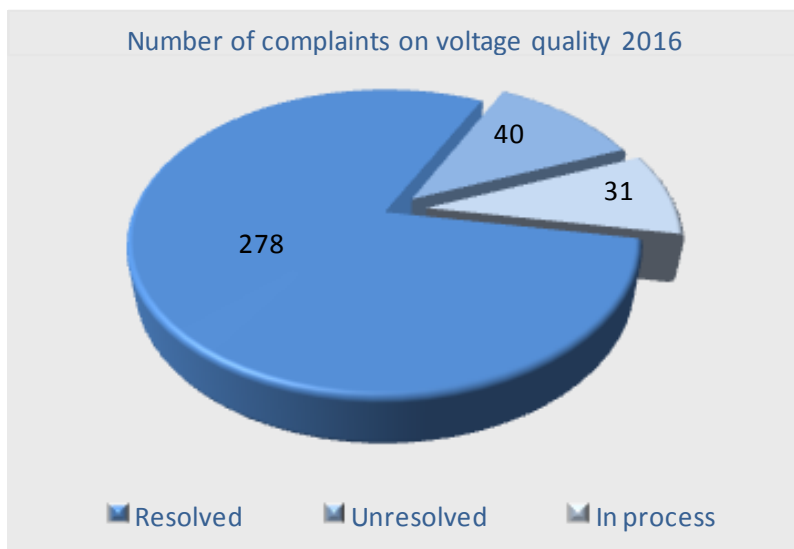


Fig. 5.29 Customer complaints about voltage quality during 2016

Below, in the figure are shown customer complaints about voltage quality over the years, which show that there is a continued increase in customer complaints about voltage quality.

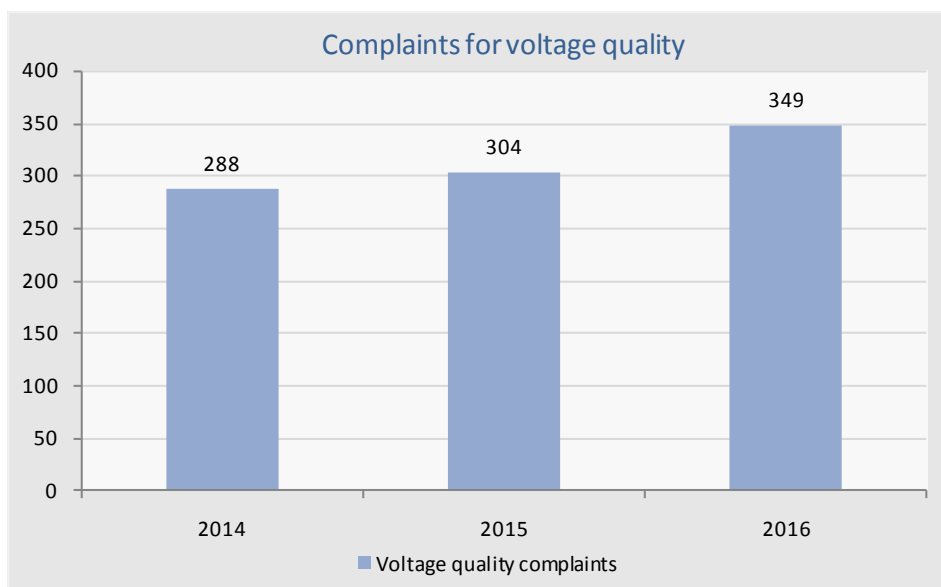


Fig. 5.30 Complaints about voltage quality by years

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

5.7.3 Commercial quality

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

In order to analyze the commercial quality, the data obtained by the licensees have been presented in two categories which directly affect the customers' issues. These categories are as follows:

- New connections, and
- Customers' complaints

New connections

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

During 2016, KESCO had in total 25.135 regular requests for registration of tariff groups 4, 5, 6, 7 and 8, requests for new connections transferred from the previous year were 1,342, whereas during 2016 are approved 25.588 requests for new connection.

From the DSO data can be seen that from the total number of requests for registration of new connections, the largest number of requests was from the households (tariff group 5, 6 and 7) 20,746 or 82.54%, requests for registration of new connections of the commercial tariff group 0.4 kV Category II - tariff group 4, with 2.851 or 11.34%, whereas the requests for tariff group 8 - public lighting were 61 or 0.24%. Of the total number of requests for new connections, 1,477 requests or 5.90% have been classified into undefined categories.

It is also noted that out of the total number of the customer registration into the billing program "CCP", household customers are 21.372 or 84.76%, followed by tariff group 4 (0.4 kV Category II - commercial) with 3.721 registrations or 14.76%, and the tariff group 8 (public lighting) with 118 registrations or 0.47%. It should be noted that the highest number of registrations compared with the requests for new connections is because there are registration of customers that were transferred from last year and some of them are registered this year.

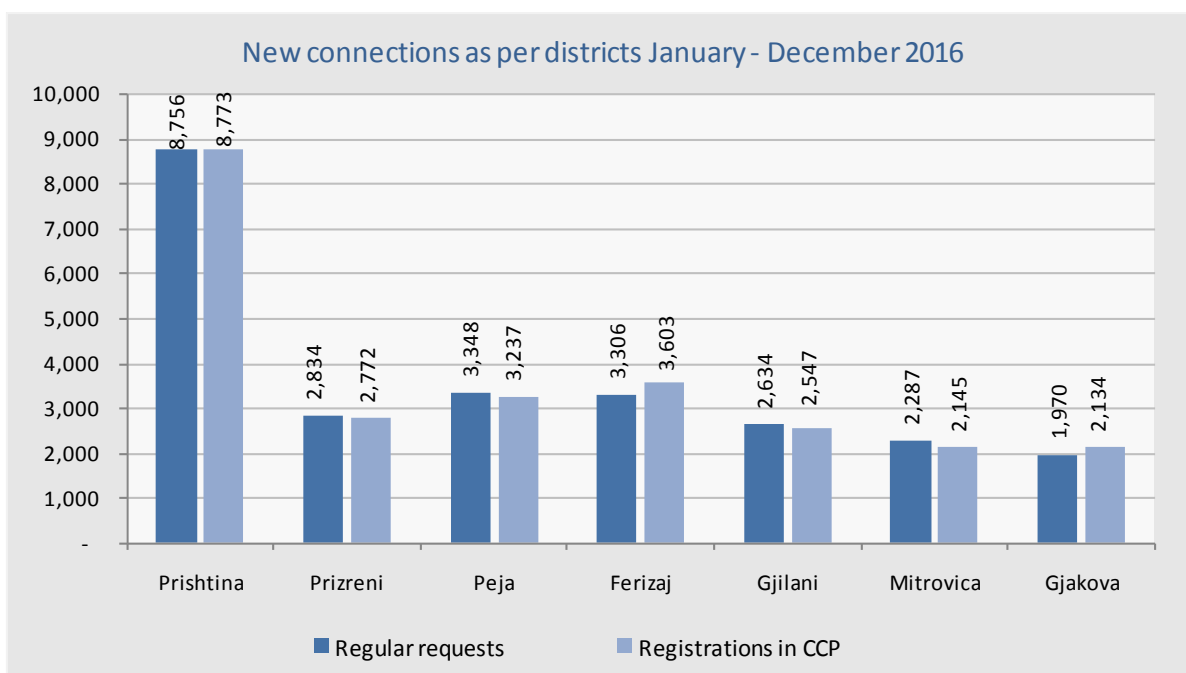


Fig. 5.30 New connections as per districts for 2016

From the above diagram is noted that for 2016, from the total number of requests for new connections, the highest number is registered in Pristine district 8,756 or 34.84%, followed by Peja district 3,348 or 13.32%, whereas the least requests for new connections were recorded in Gjakova district 1,970 or 7.84%. In addition, it should be emphasized that in terms of registrations of new connections of customers into the billing program, of the total number, the highest number is recorded in Pristine district 8,773 or 34.80%, followed by Ferizaj district 3,603 or 14.29 %, whereas the least registrations were recorded in Gjakova district 2.134 or 8.46%.

Electro-energetic Consents

From the data presented is shown that during 2016, 804 requests were submitted to KESCO for Eelectro-energetic Consents, whereas the requests transferred from 2015 have been 26, as shown in the following table.

Tab. 5.23 Electro-energetic Consents for 2016 and those transferred from 2015

District	Transferred from 2015	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total 2015 - 2016
Ferizaj	3	8	16	18	23	13	17	8	9	21	11	14	16	177
Gjakova	1	4	10	6	8	6	3	6	8	8	8	7	1	76
Gjlani	1	9	6	9	4	10	5	12	5	2	7	4	8	82
Mitrovica	5		4	6	4	3	1	2	4	5	8	6	5	53
Peja	1	5	7	9	5	9	2	11	3	19	4	1	5	81
Prishtina	12	15	10	24	28	19	12	24	26	23	21	22	20	256
Prizreni	3	7	13	11	9	3	4	9	6	7	17	9	7	105
Total	26	48	66	83	81	63	44	72	61	85	76	63	62	830

According to the table above is noticed that the total number of requests for Eelectro-enrgetic Consents for 2016, in Pristine district was the highest number of requests registered, i.e. 265 or

expressed in percentage 30.35%, followed by Ferizaj district 174 or 21.64%, whereas the lowest number was in Mitrovica district 48 or 5.97%.

Tab. 5.24 Electro-energetic Consents as per districts for 2016, and those transferred from 2015

Districts	Request for EEC (2015 - 2016)	Reviewed	Sent to other departments
Ferizaj	177	155	22
Gjakova	76	65	11
Gjilani	82	76	6
Mitrovica	53	49	4
Peja	81	72	9
Prishtina	256	244	12
Prizreni	105	100	5
Total	830	761	69

The table above shows that out of 830 requests from applicants for Electro-energetic Consent (of 2016 and those transferred from 2015) are reviewed 761 requests, whereas according to KESCO's and KEDS data, 69 other requests are reviewed but, according to the Electro-energetic Consents Department within KEDS, it was concluded that these requests are not qualified as requests that need to be issued with Electro-energetic Consents, but these are requests for other services and are forwarded to the relevant departments.

The following diagram shows that we have an increase number of requests from the customers for Electro-energetic Consents (EEC).

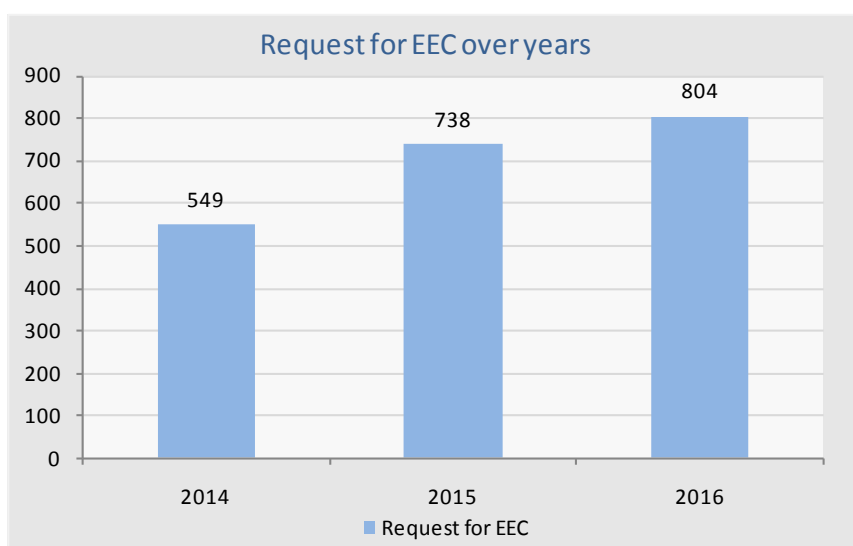


Fig. 5.31 Requests for Electro-energetic Consents for the period 2014 - 2016

5.7.4 Customer complaints to the supplier

According to data of the Public Electricity Supplier – KESCO, during 2016 the total number of recorded complaints from the customers is 11,180 and those transferred from last year were 816 complaints. Whereas during 2016, the Public Electricity Supplier – KESCO, has resolved/ finalized 10.974 complaints.

Below is the graph of customer complaints recorded and resolved for 2016 by districts.

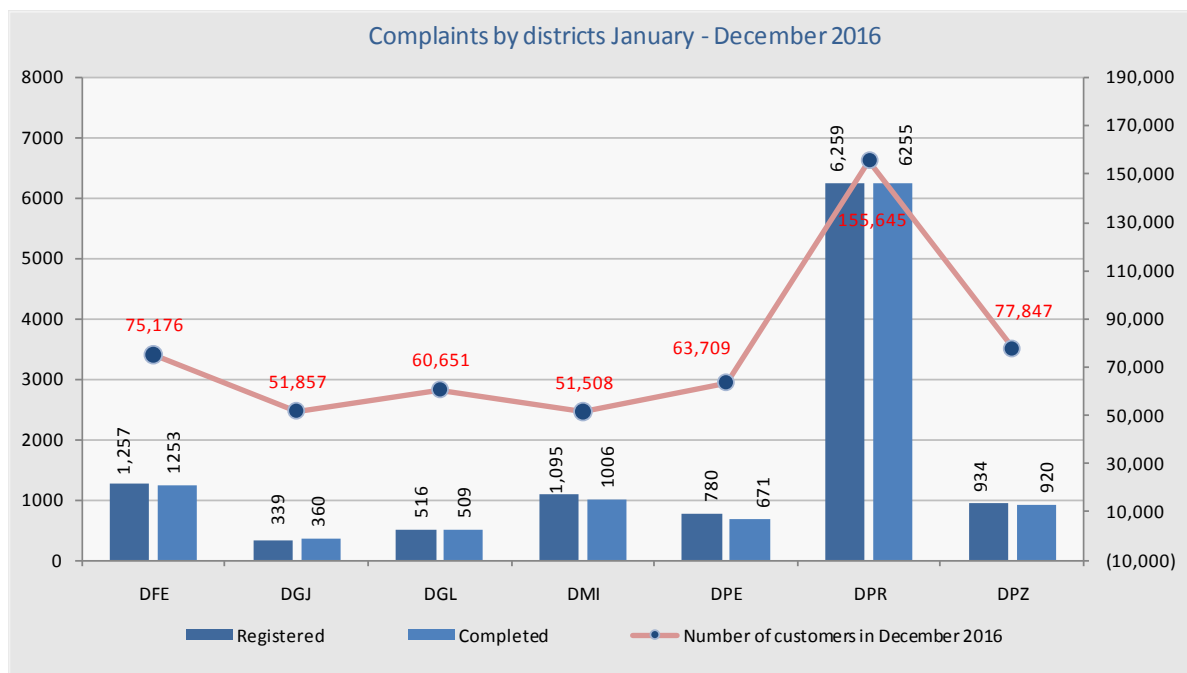


Fig. 5.32 Customers' complaints by district for January - December 2016

The figure above shows that the highest percentage of complaints of the registered customers in KESCO during January - December 2016 is in Pristina district 55.98%, followed by Ferizaj district 11.24%, whereas the lowest percentage is in Gjakova district with 3.03%. The largest number of complaints in Pristina district is mainly due to the fact that Pristina District has the largest number of customers.

The highest percentage of customer complaints resolved by KESCO compared to the total number of the complaints resolved at the national level is at Pristina district.

The following table presents the number of customers' complaints registered and resolved in 2016 by months.

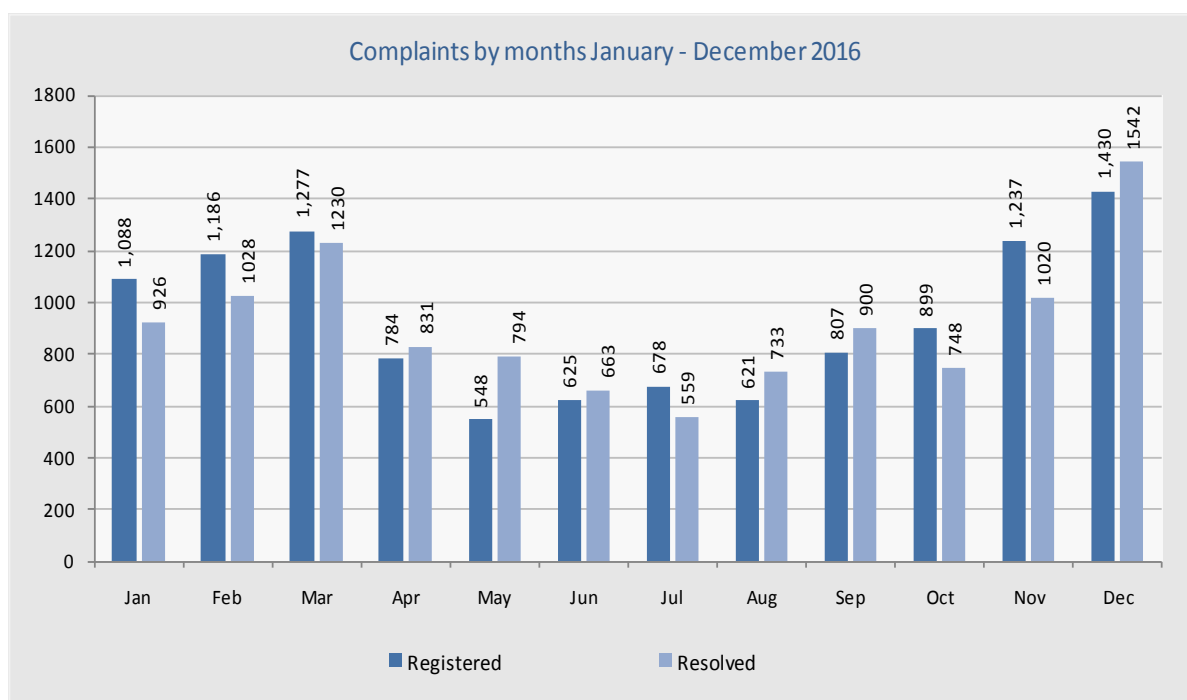


Fig. 5.33 Customers' complaints by months for January – December 2016

The data shows that the highest percentage of the finalized complaints in proportion to complaints registered in 2016 was conducted in Gjakova district (proportion complaints finalized/complaints registered) of 106.19%, followed by Pristine district with 99.94%, whereas the lowest is in Peja district with 86.03%. It should be noted that in some districts there is a higher percentage than 100%, because, apart from registered complaints of that period, the districts managed to review some complaints transferred from last year.

In the figure below is presented the number of complaints registered and finalized by the nature of complaints for period January - December 2016.

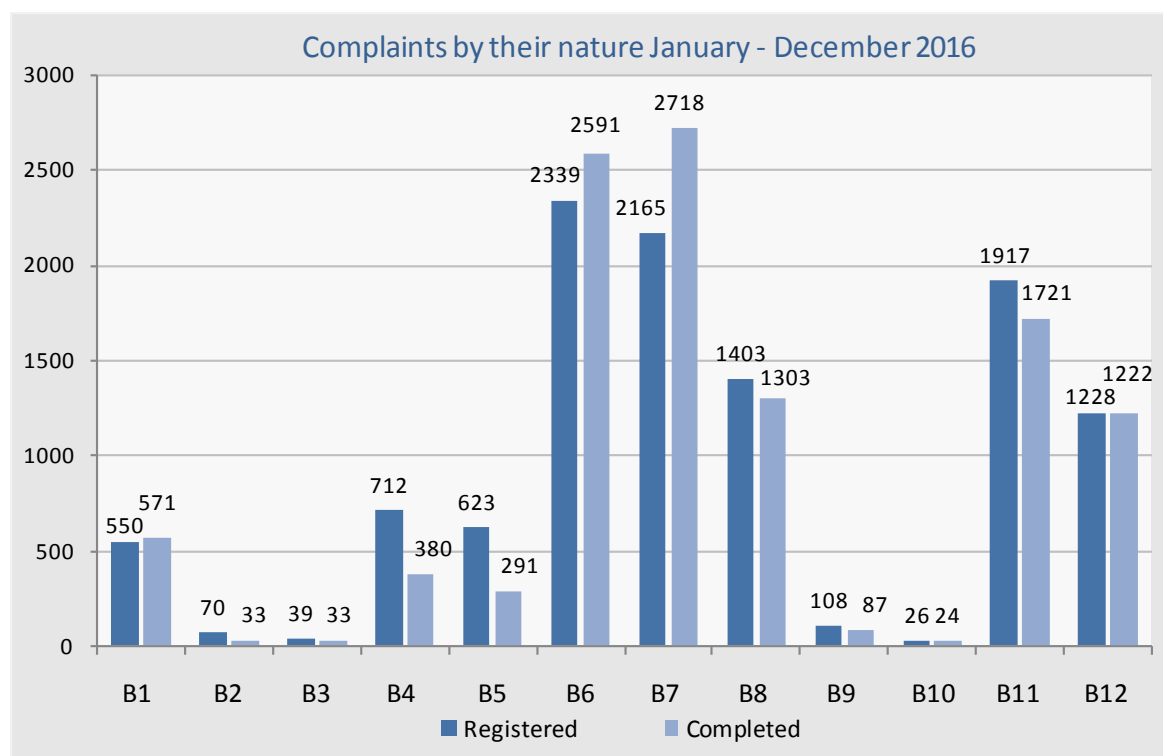


Fig. 5.34 Customers' complaints by the nature for period January- December 2016

Below are shown descriptions of the nature of complaints:

- B1 - Payment unregistered
- B2 - Error in initial balance
- B3 - Invoice is not taken
- B4 - Over the limit
- B5 - Change of the lump sum
- B6 - Incorrect reading
- B7 - Irregular reading
- B8 - Inaccurate meter
- B9 - Request for debt settlement
- B10 - Charged with VAT
- B11 - Loss recovery
- B12 - Other

According to KESCO data, in 2016, the registered customers' complaints which have been associated with errors in reading the meter (incorrect and irregular reading) were 4,504 or in percentage 40.29% of total customers' complaints submitted, while in 2015 the number of complaints that have been associated with errors in reading the meter was 5,312. It is clearly noted that the number of customers' complaints regarding errors in reading the meter is in constant fall due to the reading of metering point by way of Held Hand device (hand held unit).

Below is shown the figure with data of complaints resolved by KESCO for the period January to December 2016, or precisely, the status of complaints resolved.

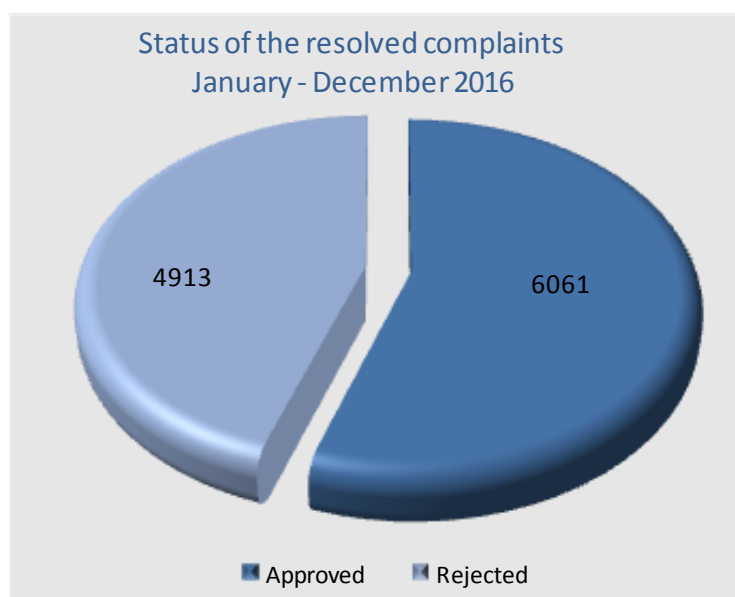


Fig. 5.35 The status of customers' complaints resolved for the period January – December 2016

The figure above shows that KESCO from 10,974 resolved customers' complaints, approved 6,061 complaints in the favor of the customer or 55.23%, whereas rejected 4,913, or in percentage 44.77%.

Below is shown the proportion between customers' complaints submitted with KESCO and number of customers by month.

Tab. 5.24 Proportion of complaints and the number of customers by month for 2016

Month	Complaints	Number of customers	Ratio Compl./custom.
January	1,088	516,397	0.21%
February	1,186	517,867	0.23%
March	1,277	519,286	0.25%
April	784	521,213	0.15%
May	548	523,111	0.10%
June	625	525,117	0.12%
July	678	523,971	0.13%
August	621	526,731	0.12%
September	807	529,437	0.15%
October	899	531,813	0.17%
November	1,237	533,609	0.23%
December	1,430	536,393	0.27%
Total	11,180	6,304,945	0.18%

From the data reported by the Public Electricity Supplier could be seen that the number of complaints registered during 2016 is 11,180 which represents 2.08% of the total number of consumers, i.e. 0.18% to the total annual invoices.

The total number of customers' complaints registered in 2016 is 11,180, in 2015 was 12,926, whereas in 2014 was 17,655 as is shown in the following figure.

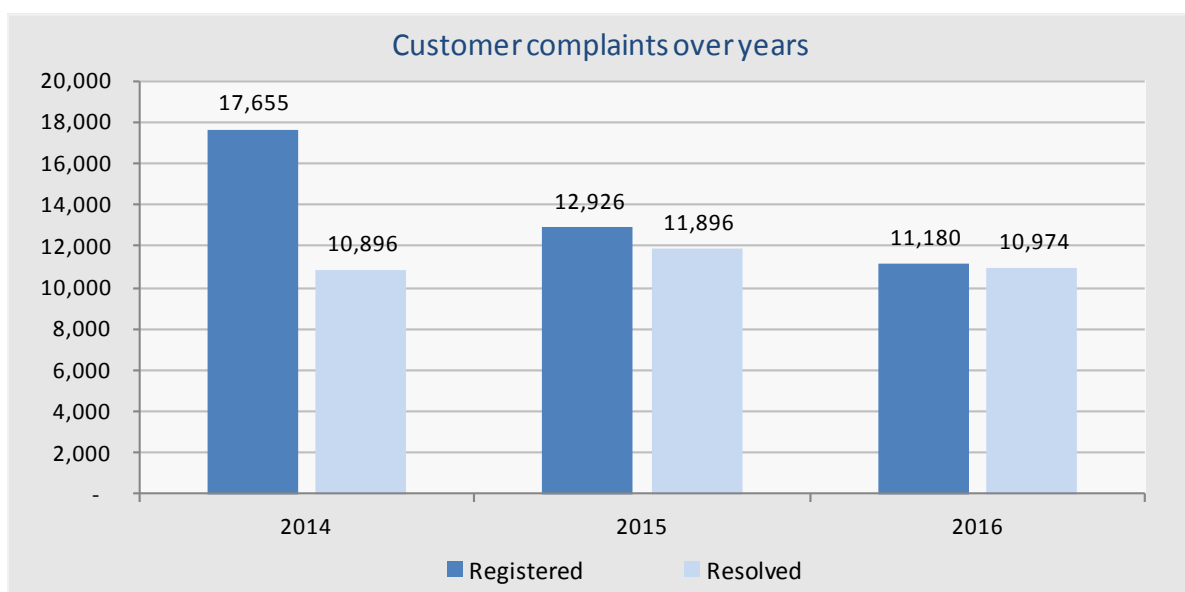


Fig. 5.36 Customers' complaints in KESCO over years

6 THERMAL ENERGY SECTOR

Thermal energy sector in Kosovo consists of four systems: DH Termokos – Pristine, DH Gjakova - Gjakova, DH Termomit - Mitrovica, and DH in Zvečan. This sector has a fairly limited extent at local level, which fulfills 3-5% of the total demand for heating in Kosovo.

6.1 Main developments in the thermal energy sector

6.1.1 Developments in DH Termokos - cogeneration project

The completion and successful operation of the cogeneration project, which had an impact into provision of quality and sustainable supply with thermal energy, is followed by other projects of rehabilitation of the distribution network of DH Termokos.

Specifically, on 26 April 2016 started the reconstruction and modernization of 50 thermal substations of the distribution network. Whereas on 25 May 2016 have begun works on replacement of approximately 10 km of the existing network pipes with pre-insulated pipes in segments that have been identified as critical points of thermal energy loss. Works in these two rehabilitation projects were successfully finalized in early November 2016 where it was marked an improvement in the thermal energy supply quality to some parts where quality has been poor, also the effects were noticed in reducing thermal energy losses. The total value of these two rehabilitation projects was approximately € 4.5 million, which amount was mainly donated by the German government through KfW, and a small part from the Municipality of Pristine, but DH Termokos has also participated with self-finance of around € 350,000.



Fig. 6.1 Pictures from the rehabilitation of thermal substation – left, works on reconstruction of the substation; right, substation after the rehabilitation is completed.

The project for network extension and rehabilitation, as well as modernization of integral equipment is in the process of preparation. The funds for this project are committed - the main part of about € 8.3 million from the European Commission and around € 5 million from the German government through KfW. This also includes the drafting of the Master Plan for the system development of DH Termokos, which started to be prepared at the end of 2016.

6.1.2 Developments in DH Gjakova – Change of fuel and cogeneration project

Regarding DH Gjakova, initially it must be emphasized that despite the financial difficulties in supplying of sufficient quantities of fuel - heating oil, thanks to subsidies from Kosovo budget and funds from Gjakova Municipality, DH Gjakova managed, in early December 2016, to start generation and supply customers with thermal energy for 2016/2017 season.

Regarding the project for the change of fuel and rehabilitation of district heating system of DH Gjakova, it is worth mentioning that during 2016 efforts continued to carry out the arrangements related to the financial support for the project implementation as well as other institutional and legal property issues. From the European Commission - Office in Kosovo is approved the donation for implementation of this project worth about € 12.5 million. In early 2017 is expected the signature of the financial agreement and then to proceed with the bidding process and selection of operators for the project implementation.

The main components of the project for fuel change and rehabilitation of DH Gjakova system are:

- Replacement of heating oil and biomass boilers, which include two generating units: one with capacity of 8 MW_{TH} for thermal energy generation only, whereas the second unit is planned to be cogeneration of thermal energy and electricity with capacity of 8 MW_{TH}, 1.57 MW_{EL} respectively;
- Rehabilitation of the distribution network – namely, rehabilitation of the northern and southern part of city network that, among others, includes the replacement of 3.3 km of existing pipes with pre-insulated pipes;
- Total rehabilitation of 20 thermal substations identified as a priority.

6.2 Technical characteristics of thermal energy systems

Thermal energy sector in Kosovo consist of 4 district heating systems with an installed capacity of which is estimated to be around 332 MW_{TH}. District heating Termomit and Zveçan, due to well known political situation, does not respond to requests for licensing/ regulation and monitoring by ERO, which makes it impossible to obtain any relevant and updated information. Thereupon, below are presented details only for DH Termokos and DH Gjakova.

6.2.1 Generation plants

Thermal energy generation plants of DH Termokos consist of the main heating plant with total installed capacity of 120 MW_{TH}, and the auxiliary heating plant at the University Clinical Center with a capacity of 14 MW_{TH}. Upon the connection of thermal energy extraction station in units B1 and B2 of the Kosovo B Power Plant, this capacity is also added the installed cogeneration capacity of 140 MW_{TH}. It should be noted that heating oil/fuel oil boilers in DH Termokos heating have not been decommissioned but they will serve as reserve capacity to be activated in case of an eventual breakdown of units of TPP Kosova B.

Heating plant of Gjakova city is equipped with two boilers with heating oil, having a total installed capacity of 38.6 MW_{TH} – one having a generation capacity of 20 MW_{TH}, and the other 18.6 MW_{TH}

6.2.2 The transportation line and thermal energy distribution systems

In 2014, thermal energy transportation network TPP Kosovo B - DH Termokos, in a length of about 10.5 km, was built thus enabling the transportation of thermal energy from cogeneration plants in Kosovo B up to DH Termokos.

Thermal energy distribution systems in Kosovo are composed of the primary distribution network which extends until the point of supply in substations and the secondary network which extends from the supply points in substations to the final users.

The primary distribution system of DH Termokos has a length of approximately 36.5 km. The integral part of the distribution system is also the pump and heat exchangers station located at Bregu i Diellit and 349 active substations which are dividing points between the primary and secondary network.

The primary distribution network of DH Gjakova has a length of about 13.5 km. Integral part of this network is composed of approximately 174 active substations which are dividing points between the primary and secondary network.

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

Tab. 6.1 Technical data of district heating systems

Company (City)	Installed capacity	Operational capacity	Distribution network	
	[MW]	[MW]	Network length [km]	No. of substations
TERMOKOS (Prishtina)	2 x 58 = 116	2 x 58 = 116		
	2 x 7 = 14	2 x 7 = 14		347
	2 x 0,81 = 1.62	1 x 4 = 4	36.5	(324 active)
	1 x 4 = 4			
	2 x 70 = 140 [co-generation]	2 x 70 = 140		
Sub-total	275.6	274.0	36.5	347
DH GJAKOVA (Gjakova)	1 x 20 = 20	1 x 20 = 20	13.5	300
	1 x 18.6 = 18.60			(251 active)
Sub-total	38.6	20.0	13.5	300
Total	314.2	294.0	50.0	647

6.3 Performance of district heating companies

Initially, it must be emphasized that in 2015/2016 season DH Termokos has had a substantial improvement of generation of thermal energy and supply, providing heat 24/7 that mainly is a result of execution of co-generation project and the rehabilitation projects.

Regarding DH Gjakova, it should be mentioned that thanks to subsidies from the Kosovo Government and financial assistance from Gjakova Municipality, it has managed in 2015/2016 season to launch the generation and supply of thermal energy. However, due to financial limitations DH Gjakova, has been forced to cut the heating season for about 3 months - more precisely from 16 December 2015 up to 18 March 2016. In addition, it has provided with daily supply cuts, what has

significantly reduced the heating space, i.e. the number of customers, focusing on customers who regularly paid bills and in the network areas where there was less thermal energy loss.

6.3.1 Production, supply and losses in DH Termokos

- Thermal energy production

Thermal energy production of DH Termokos is based on the cogeneration plants in TPP Kosovo B, which has been a key component to the heat balance for this season. In fact, in 2015/2016 season, the entire thermal energy production was from cogeneration plants in TPP Kosovo B, so the activation of boilers with heating oil in DH Termokos was unnecessary.

The amount of thermal energy extracted from cogeneration in TPP Kosovo B was **198,696 MWh_{TH}**, whereas the amount of thermal energy received in the heat exchange station in DH Termokos was **195.279 MWh_{TH}**. It should be noted that this represents an increase of about 25% compared with the production from last season.

Summarized data of the thermal energy production from cogeneration, is presented in the following table:

Tab. 6.2 Thermal energy generation from cogeneration

Thermal energy from co-generation – DH Termokos, Season 2015/2016		
Month	Extracted Thermal Energy (measured in TPP Kosova B) / Gross generation	Received Thermal Energy (measured in DH Termokos) / Net generation
Oct 2015	9,179	8,777
Nov 2015	30,405	29,621
Dec 2015	40,627	39,924
Jan 2016	43,169	42,681
Feb 2016	33,832	33,338
Mar 2016	33,581	34,131
Apr 2016	6,903	6,880
Total	198,696	195,279

- Thermal energy supply

DH Termokos in the 2015/2016 season has marked a significant improvement in quantity and quality of the thermal energy supply, which is mainly due to continuous improvements in the thermal energy production, as well as the maintenance and repairs of the network.

Customers's supply with thermal energy (central heating), in this season was **164.969 MWh_{TH}**, which presents an increase of **37.075 MWh_{TH}** or about **29%** compared to 2014/2015 season (**127,890 MWh_{TH}**).

- System losses

Upon the integration of thermal energy from cogeneration, DH Termokos district heating system has its own specifics as regard to the system losses. Therefore, system losses include two

components: losses in transmission network from TPP Kosova B- DH Termokos and losses in primary distribution network.

Losses in the transportation network of thermal energy TPP Kosova B- DH Termokos in a length of 10.5 km are determined from the measurements carried out in the heat exchange station (thermal energy production station) in TPP Kosova B and in heat exchange station (thermal energy receiving station) in DH Termokos. Based on the measurements carried out in period October 2015- April 2016 results that quantitative losses in this period are **3,417 MWh_{TH}**, respectively **1.72%**. Details on losses in the thermal energy transmission network are given in the following table:

Tab. 6.3 Thermal energy losses in the transmission network

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Extracted Thermal Energy - measured in TPP Kosova B [MWh]	9,179	30,405	40,627	43,169	33,832	34,581	6,903	198,696
Received Thermal Energy - measured in DH Termokos [MWh]	8,777	29,611	39,924	42,618	33,338	34,131	6,880	195,279
Losses in energy quantity [MWh]	402	794	703	551	494	450	23	3,417
Losses in [%]	4.44	2.61	1.73	1.28	1.46	1.30	0.33	1.72

Losses in primary network of thermal energy distribution are normally determined by the metering of thermal energy at the entrance of distribution network and from thermal energy supply in customers sub stations. But, due to the lack of reliable measurement of supplied thermal energy quantity (in sub stations), several approximations for the calculation of supply were done, first using parameters such as, specific demand for heating capacity (W/m²) and full load hours, namely specific consumption (kWh/m²). The estimated consumption value is **164,969 MWh_{th}**. By subtracting this consumption value from thermal energy brought into the distribution network **192,279 MWh_{th}** it results that quantitative losses in distribution network for 2015/2016 season are **27,310 MWh_{th}** which in percentage are 14.20%.

In the table below are presented the summarized data on production, supply and losses in the system.

Tab. 6.4 Thermal energy production losses/ thermal efficiency of the heating plant- season 2015/2016

DH Termokos - Heating season 2015-2016		
Description	Unit	Value
Gross production in heating plants	[M W h _{th}]	0.00
Gross production in cogeneration plants	[M W h _{th}]	198,696.00
Losses in transport network (TPP Kosova B - DH Termokos)	[M W h _{th}]	3,417.00
Losses in percentage in transport network	[%]	1.72
Own-consumption	[M W h _{th}]	3,000.00
Thermal energy net production	[M W h _{th}]	192,279.00
Losses in distribution network	[M W h _{th}]	27,310.00
Losses in percentage in distribution network	[%]	14.20
Customer supply with thermal energy	[M W h _{th}]	164,969.00

6.3.2 Production, supply and losses in DH Gjakova

- Thermal energy production

DH Gjakova, has a production of thermal energy based on heating boilers with fuel oil. As stated above, during 2015/2016 season thermal energy production was quite reduced – gross production has been **6,265 MWh_{TH}** while net production of thermal energy was **5,815 MWh_{TH}**. For the production of this season **792 t** of fuel oil have been spent. It should be noted that, according to the company reported data, there has been a low thermal and heating efficiency (heating boilers) of around 70%, which causes a considerable loss during the process of transforming the fuel energy into thermal, which is estimated to 2,685 MWh_{TH}.

- Heat supply

DH Gjakova during 2015/2016 season offered a reduced supply, as a consequence of season dimidiation and reduction of heating surface. The customer's supply with thermal energy for this season was **4,361 MWh_{TH}**, an amount that does not nearly cover the customer demand for heating who are connected in the DH system of Gjakova.

- Distribution system losses

Losses in the primary distribution network are calculated as differences between the amount of thermal energy brought into the network of distribution and supply/consumption. In absence of metering the amount of supplied thermal energy (in substations), for the calculation of the supply some approximations were made by using primarily the parameters such as: specific demand for heating capacity (W/m²) and hours of full load namely specific energy consumption (kWh/m²). Thus, the estimated value of consumption is **4,361 MWh_{TH}**. By subtracting this value of consumption from the amount of thermal energy brought into the distribution network (**5,815 MWh_{TH}**) it turns out that the quantitative losses in the distribution network for 2015/2016 season are **1,454 MWh_{TH}**, which is 25%.

The following table shows the aggregate data of total system production, supply and losses.

Tab. 6.5 Energy performance of DH Gjakova

DH Gjakova - Heating season 2015-2016		
Description	Unit	Value
Fuel quantity - heavy fuel oil (HFO)	[ton]	792.00
Calorific value	[M W h _{th} /ton]	11.30
Energy entered from fuel - HFO	[M W h _{th}]	8,950.00
Boilers efficiency	[%]	70.00
Thermal energy gross production	[M W h _{th}]	6,265.00
Own-consumption	[M W h _{th}]	450.00
Thermal energy net production /Energy entered in distribution network	[M W h _{th}]	5,815.00
Losses in distribution network	[M W h _{th}]	1,454.00
Losses in percentage	%	25.00
Customer supply with thermal energy	[M W h _{th}]	4,361.00

6.4 Overall production, supply and losses of thermal energy

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

Tab. 6.6 Energy performance of thermal energy sector - 2015/2016 season

Thermal Energy Sector - Season 2015/2016				
Description	Unit	DH Termokos	DH Gjakova	Total
Thermal energy gross production	[M W h _{th}]	198,696	6,265	204,961
Losses in transport network	[M W h _{th}]	3,417	0	3,417
Losses in percentage in transport network	[%]	1.72	0.00	-
Own-consumption	[M W h _{th}]	3,000	450	3,450
Thermal energy net production	[M W h _{th}]	192,279	5,815	198,094
Losses in distribution network	[M W h _{th}]	27,390	1,454	28,844
Losses in percentage in distribution network	[%]	14.24	25.00	-
Customers supply with thermal energy	[M W h _{th}]	164,969.0	4,361.0	169,330

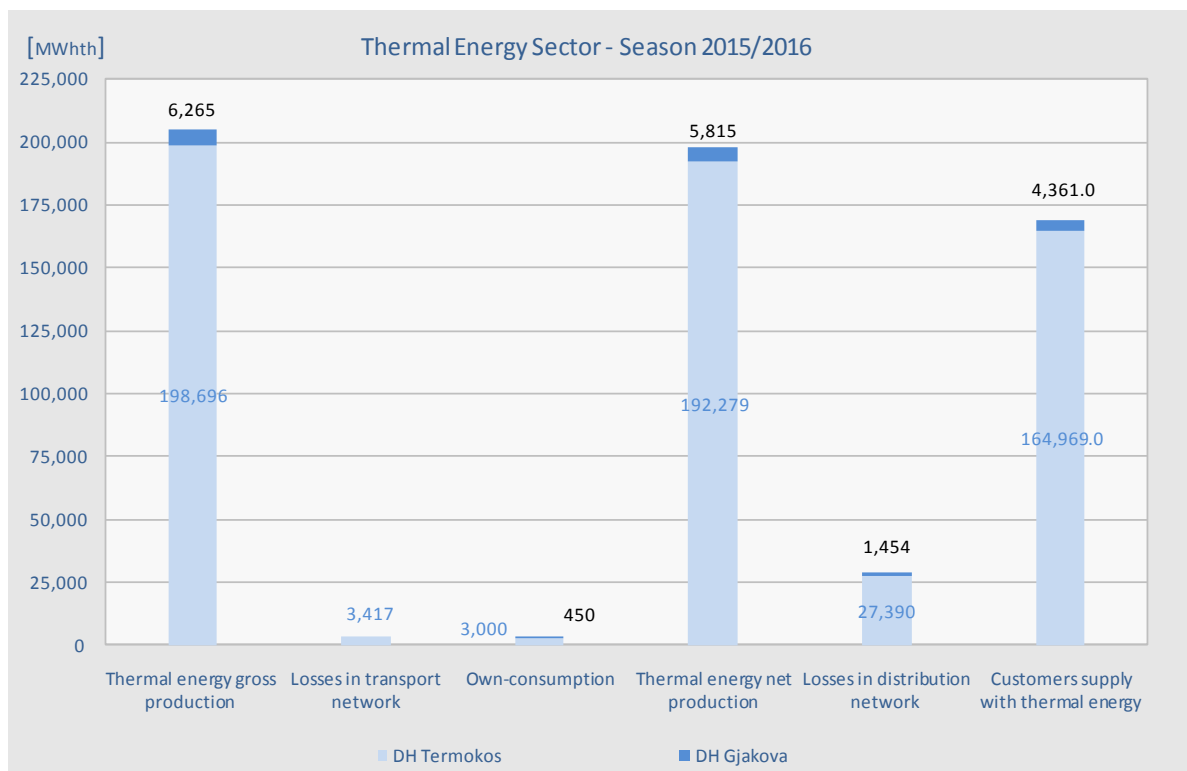


Fig. 6.2 Graphic presentation of thermal energy Sector performance - 2015/2016 season

6.5 Billing, collection and heating surface

6.5.1 Billing and collection

Billing of the thermal energy customers mainly was based on the heating surface (per square meter). A limited number of customers (51 customers) mainly commercial and institutional were billed according to the metered thermal energy.

DH Termokos, in the 2015/2016 season has marked an increase in billing compared to the previous 2014/2015 season, which is mainly as consequence of continuous improvement of supply. Actually, the billing for 2015/2016 season was **5,906,459€**, while for 2014/2015 season the billing was **4,555,024€**, that represents an increase of about 30%. However, even in this season the planned billing level was not reached mainly because of:

- i) Deduction in billing due to the days without heating and due to the supply quality (in several neighborhoods of Pristine); and
- ii) Reduction in heating surfaces after on field verifications.

In addition to increased billing, there is also a significant increase in collection compared to the previous season, where in 2015/2016 season the collected amount was **3,771,663€**, while the collected amount during 2014/2015 season was **2,584,741€**, which represents an increase of about 46%. Likewise, a significant increase in percentage of collection is marked, from **56.74%** in 2014/2015 season to **63.86%** in 2015/2016 season, which mainly is as consequence of continuous qualitative and quantitative improvement of thermal energy supply.

As for DH Gjakova, as stated above, during 2015/2016 season, a reduced supply was offered due to the dimidiation of heating season and reduction of heating surface. Subsequently, billing in this season was quite small in the value of **245,903€**, where as collection reached the value **220,868€**, which represents a very high collection rate of 89.82%.

Details regarding billing and collection are shown in the following table and graph.

Tab. 6.7 Billing and collection – season 2015/2016

Heating season 2015/2016	Heating area [m ²]	Billing (incl. VAT) [€]	Collection [€]	Collection rate [%]
NQ "Termokos" Prishtina				
Household	695,641	2,919,758.00	1,332,616.00	45.64%
Commercial and institutional	479,974	2,986,700.00	2,439,047.00	81.66%
Total	1,175,615	5,906,458.00	3,771,663.00	63.86%
DH Gjakova				
Household	26,715	75,561.00	66,531.00	88.05%
Commercial and institutional	47,718	170,342.00	154,337.00	90.60%
Total	74,433	245,903.00	220,868.00	89.82%

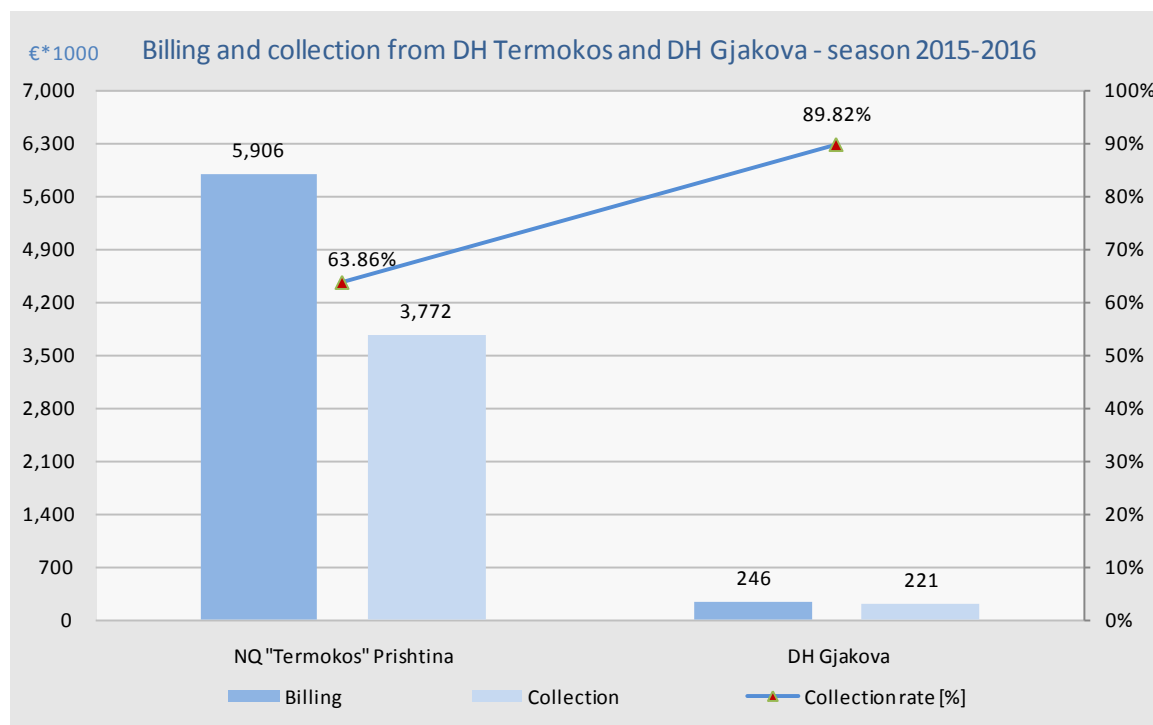


Fig. 6.3 Billing and collection of DH Termokos and DH Gjakova – season 2015/2016

6.5.2 Heating surface

DH Termokos, in 2015/2016 season had a total of heating surface of **1,175,615 m²**, which represents an increase of **56,602 m²** or about **5%** compared with the heating surface in 2014/2015 season (**1,119,013 m²**).

While DH Gjakova, due to the above mentioned reasons, in 2015/2016 season significantly reduced the heating surface in just **74,433 m²**.

Graphs presented below show the heating surface for DH Termokos and Gjakova, divided by the customers groups.

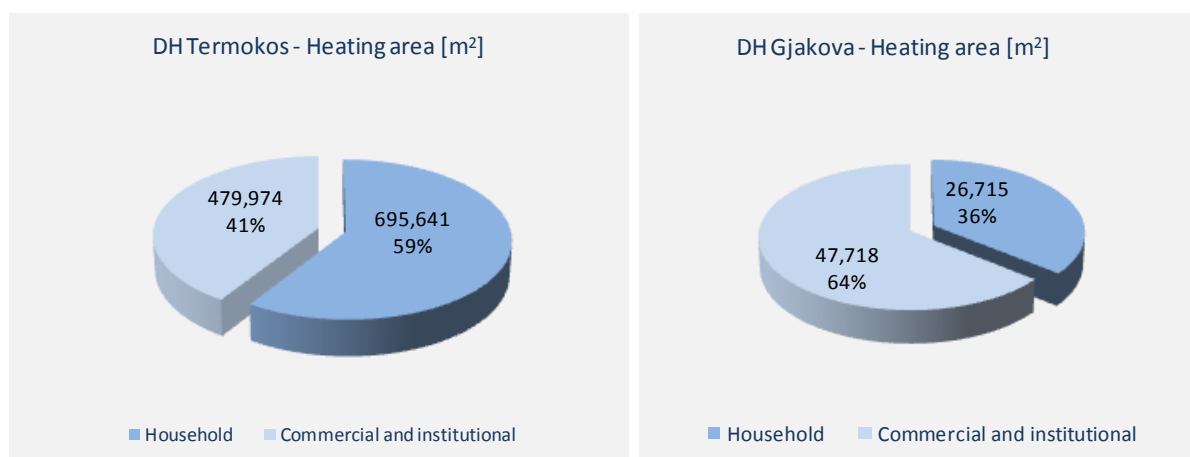


Fig. 6.4 Heating area according to the customers' groups in 2015/2016 season

7 NATURAL GAS SECTOR

7.1 Development perspective of natural gas sector in Kosovo

Currently in Kosovo, there is no functional infrastructure and natural gas market. However, in order to create the perspective for development of natural gas sector and fulfillment of the obligations that Kosovo has as a full member in Energy Community Treaty, the Kosovo Assembly in June 2016 adopted the Law no. 05/L-082 on Natural Gas, as part of the package of energy laws.

Following this Law was made the transposition of the European third package legislation which was relevant for natural gas, mainly:

- Directive No. 2009/73/EC concerning common rules for the internal market in natural gas; and
- Regulation No. 715/2009/EC on conditions for access to the natural gas transmission networks.

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

Kosovo's strategy on draft energy 2016-2025 among its objectives has the development of natural gas infrastructure, through connection with gas infrastructure projects in the Southeast Europe, especially with TAP pipeline project ("Trans-Adriatic-Pipeline") and gas ring of Energy Community. In this regard it should be emphasized that a gasification project respectively the development of gas infrastructure is ranked in the *priority infrastructure projects – area of energy, approved by the National Council for Investment and the Government of Kosovo*.

It is estimated that TAP pipeline project will have a positive impact on development of gas infrastructure in the Energy Community respectively southeast Europe region, by offering opportunities to connect the planned regional projects such as the Gas ring and Ionian-Adriatic pipeline.

TAP is currently in the construction phase (it started during 2016) and in 2019 it is planned to start with the first gas flows, while in 2020 there will be a full operation of TAP pipeline. TAP's initial capacity is planned to be 10 billion cubic meters (bcm) per year, with the possibility of increasing up to 20 bcm per year. TAP will allow interconnection connections along pipeline to supply with gas other regional projects. Thus, with state agreements with the "host countries" (Greece, Albania and Italy) connection sites are predefined as well as the quantities, namely gas capacities.

7.1.1 Project: Albania – Kosovo Gas Pipeline - ALKOGAP

The connection of Kosovo through Albania with TAP project namely IAP is regarded as a favorable option. In this way *Kosovo jointly with Albania have applied with a joint project for natural gas to be included in the list of projects of Energy Community interest (PECI). Gas supply is expected to be done by the TAP pipeline directly or through IAP pipeline*. So project proposal is jointly developed, including specific data and information for both countries. As following figure shows, this project

represents a deviation from the original concept of the Gas Ring, but was welcomed by the Energy Community - inclusion in the "PECI" list.

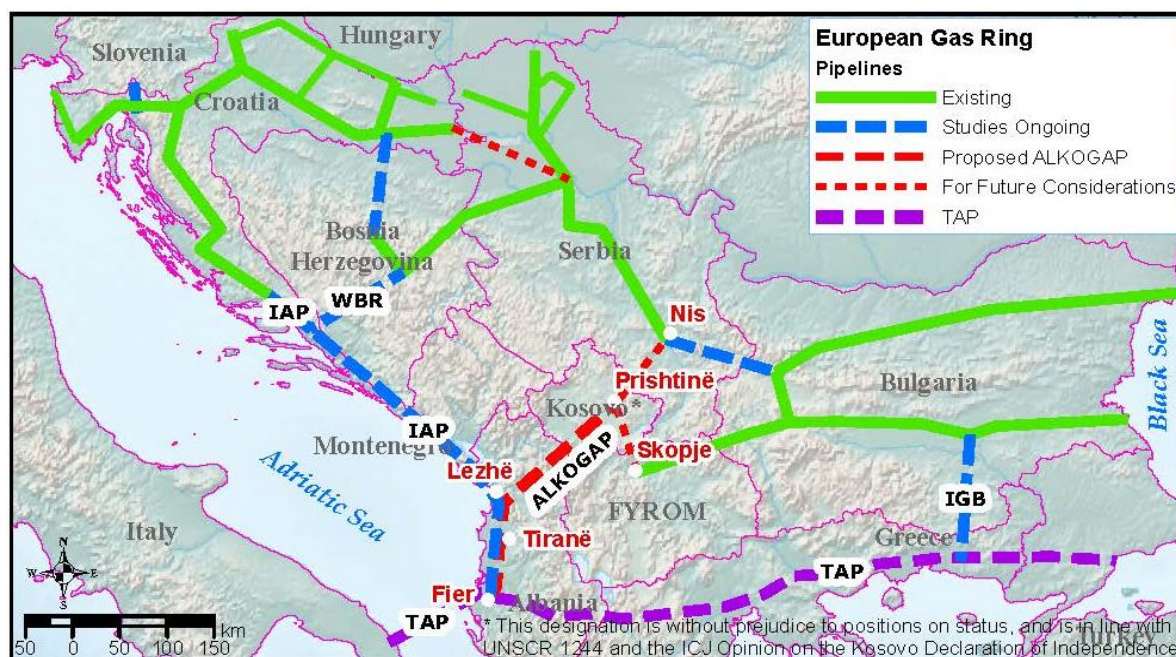


Fig. 7.1 Regional Gas Infrastructure Projects and options for Kosovo's inclusion (including ALKOGAP)

7.1.2 ALKOGAP Project details

This project, with total length of 260 km, aims to create a new route to supply natural gas from the Middle East and the Caspian Region, through the TAP pipeline, towards the northern zone of Albania, Kosovo and beyond to other countries in the region.

The pipeline route will be assessed in two scenarios:

1. Lezha - Pristina: This scenario pre-assumes that IAP pipeline project advances in the implementation phase and is supplied through this pipeline;
2. Fier - Lezha - Pristina: This scenario will be considered in case there will be no progress in the implementation of IAP; this case foresees the direct supply of gas through TAP pipeline.

The project will create preconditions for the establishment and further development of the natural gas markets of Albania and Kosovo in the anticipated annual level of 2 bcm (1- 1.3 bcm for Albania and Kosovo 0.5-0.7 bcm). The project cost is estimated to be around € 200 million.

Current status of ALKOGAP project

After the evaluation of the Working Group of Energy Community on "PECI", according to the evaluation criteria, the project is eligible for the "PECI" list which list is approved by the Ministerial Council of the Energy Community in 2016.

Albania and Kosovo have also jointly applied to WBIF - "Western Balkans Investment Framework" – for financial support for ALKOGAP project, and WBIF steering committee decided by WBIF platforms to allocate 300 thousand Euros to prepare prefeasibility study. Leading financial institution is the European Bank for Reconstruction and Development (EBRD).

It should be noted that the ERO in cooperation with MED have provided relevant inputs related to project proposal for ALKOGAP project, as well as in the work of the Energy Community Working Group for "PECI". ERO also actively participates in the work of the Energy Community, more specifically in Gas Working Group of Regulatory Board of the Energy Community and Gas Forum.

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