



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

Statement of Security of Supply for Kosovo (Electricity, Natural Gas and Oil)

Prishtina, 2015

CONTENTS

- EXECUTIVE SUMMARY**..... 1
- 1. DESCRIPTION OF THE ROLE OF MAIN PLAYERS IN THE ENERGY SECTOR**..... 2
- 2. LEGAL BACKGROUND** 4
- 3. SITUATION OF SUPPLY AND DEMAND BALANCE IN THE ELECTRICITY SECTOR IN KOSOVO**..... 5
 - 3.1 Transmission network..... 5
 - 3.1.1 Electricity flows* 6
 - 3.1.2 Electricity transmission losses* 7
 - 3.2 Distribution network 8
 - 3.2.1 Distribution losses* 9
 - 3.3 Electricity generation 9
 - 3.4 Gross demand and peak load 11
 - 3.5 Consumption in the distribution system 13
 - 3.6 The balance of electricity production and demand in previous years (2000-2014) 14
- 4. ACTIVITIES RELATED TO THE CONSTRUCTION OF NEW GENERATING CAPACITY** 16
 - 4.1 Renewable Energy Sources 16
 - 4.2 Incentives to build RES capacities 17
- 5. FORECAST OF DEMAND AND GENERATION** 18
 - 5.1 Forecast of demand for different economic growth scenarios 18
 - 5.2 Electricity generation forecast for the period 2015-2024 20
 - 5.3 The balance of production and consumption for the period 2015 - 2024 23
- 6. NATURAL GAS SECTOR** 24
 - 6.1 General description 24
 - 6.2 Currently available production and import capacity 24
 - 6.3 Forthcoming production and import investment for the next three years..... 24
 - 6.4 Description of the role of regulatory authority or other authorities 24
 - 6.5 Progress in major infrastructure projects 25



7. OIL SECTOR	26
7.1 Legal and Institutional Framework.....	26
7.2 Domestic supply of crude oil and petroleum products	26
7.3 Import and consumption of crude oil and petroleum products	26
7.4 Imports dependency and origin of imported fuels	27
7.5 Share of Oil in Total primary energy supply (TPES)	28
7.6 Stockholding of crude oil and petroleum products	28
7.7 Oil infrastructure	28
7.8 Import/Export Customs duty	28
7.9 Price Regulation, role of the regulatory authority	29



Abbreviations

CEFTA	Central European Free Trade Agreement
DH	District Heating
DSO	Distribution System Operator
ECS	Energy Community Secretariat
ECSEE	Energy Community of South East Europe
ERO	Energy Regulatory Office
EU	European Union
GDP	Gross Domestic Product
HPP	Hydro power plant
ICMM	Independent Commission of Mines and Minerals
ITC	Inter TSO Compensation
KCC	Kosovo Competition Commission
KEDS	Kosovo Energy Distribution and Supply
KEK JSC	Kosovo Energy Corporation (Korporata Energjetike e Kosovës)
KOSTT JSC	Kosovo Transmission and Market System Operator
LPG	Liquefied petroleum gas
MED	Ministry of Economic Development
MTI	Ministry of Trade and Industry
PHLG	Permanent High Level Group of the Energy Community
PPA	Power Purchase Agreement
REM	Regional Energy Market
SoSSoK	Security of Supply Statement of Kosovo
TPP	Thermal Power Plant
TSO	Transmission System Operator



EXECUTIVE SUMMARY

About 97% of power generation installed capacities in Kosovo is based on two lignite fired power plants of KEK: Kosovo A (5 units) and Kosovo B (2 units). Total installed capacity of both plants is 1,478 MW, which could have been sufficient to fulfill current Kosovo's demand for electricity if they were totally available. But, due to age, net generation capacity of these plants has been significantly reduced.

The current situation of electricity supply in Kosovo is not satisfactory, in different time periods there is lack of electricity imposing interruption of electricity for customers. Illegal use of electricity and use of electricity for heating, as well as the limited availability of power generation capacities doesn't guarantee stable and sufficient electricity supply to all consumers.

The need for investment in electricity sector in Kosovo, particularly in electricity generation, requires restructuring of the sector, market liberalization and growth of competition in the electricity market. In order to attain these objectives a number of measures are undertaken: amendments of the energy laws, approval of new market design and market rules. Such documents and the increased activities for their implementation will determine necessary measures to accommodate commercial arrangements in order to attract necessary domestic and foreign investments to develop the electricity sector in Kosovo.

Electricity consumption during 2015 - 2024 will be met by domestic production and also by imports of electricity. In order to meet the growing demand in the country and potentially to export electricity surpluses, investments in the following projects are planned:

- Development of two units in a new TPP "Kosova e Re" with installed capacity of about 2*300 MW. The first unit (300MW) is expected to be operational in 2020, while the second unit in 2021;
- Construction of HPP Zhur in 2020. This project is considered very important for balancing and optimizing the work of the Power System;
- Construction of small power generation units (mainly from RES) by private investors with planned capacities: about 240 MW - small HPP, 165 MW – Wind turbines, 14 MW – biomass fired plants and 15 MW – solar (photovoltaic);

During 2014 there have been certain developments with respect to Kosova e Re project, resulting in evaluation of the bid for this project. TPP Kosova e Re will represent the main component of domestic electricity production on lignite ensuring the base energy for the system. ERO has been a participant in the steering committee and in the working group of the project.

Almost all consumption of oil products is covered by imports. Since Kosovo has no domestic oil sources nor oil pipelines or domestic production, oil products are imported mainly by trucks and to lesser extent by rail.

Current oil legislation obliges all petroleum product storages and sale points to possess at least 5% of the storage capacity for state emergency purpose.



1. DESCRIPTION OF THE ROLE OF MAIN PLAYERS IN THE ENERGY SECTOR

The Energy Regulatory Office (ERO) is an independent agency established by the Assembly of the Republic of Kosovo in accordance with Articles 119.5 and 142 of the Constitution of the Republic of Kosovo, responsible for economic regulation of energy sector.

Duties and functions of ERO are set forth in the Law No. 03/L-185 on the Energy Regulator, among which are the following: creating and operating an efficient, transparent and non-discriminatory energy market; determining criteria and conditions for issuing licenses for the conduct of energy activities; determining criteria and requirements for granting authorizations for the construction of new generating capacity; monitoring and enhancing security of electricity supply; setting reasonable criteria and conditions for energy activities pursuant to tariff methodology; monitoring and preventing any abuses of dominant positions and anti-competitive practices by energy enterprises and dispute settlement in the energy sector.

While performing its activities ERO co-operates with energy enterprises, respective Ministries (especially MED), different associations and institutions in Kosovo:

Ministry of Economic Development (MED); is among others, responsible for energy sector strategy and policy (preparation and implementation), development of secondary legislation (including technical standards and norms), renewable energy sources and rational use of energy, coordination of donors and attraction of investments – representing the “State Energy Authority” according to MoU on REM;

Independent Commission for Mines and Minerals (ICMM); established pursuant to Regulation No. 2005/2 of January 21 2005 (as amended by Regulation No. 2005/38 of 29 July 2005 and Law 03/L-081 of 13 June 2008) is an independent agency pursuant to the Articles 119, paragraph 5, and 142 of the Constitution of the Republic of Kosovo. ICMM regulates mining activities in Kosovo in accordance with the present law, the sub-normative acts issued pursuant to the Law on Mines and Minerals, and the Mining Strategy.

Kosovo Competition Commission (KCC); was established by the Assembly of Kosovo based on the Competition Law no. 2004/36, dated 07 November, 2008. Kosovo Competition Commission is an independent body and has responsibility for promoting competition among undertakers and protection of consumers in Kosovo.

Kosovo Energy Corporation J.S.C (KEK); Is an electricity utility of Kosovo that includes coal mining and power generation that includes about 97% of electricity produced in the country.

Kosovo’s Company for Electricity Distribution and Supply (KEDS); KEDS Distribution is a private company of the Consortium Limak-Çalik that performs activities of electricity distribution, maintenance of medium and low voltage network, including metering devices. Until the end of 2014 KEDS has performed also the electricity supply activity that implies retail and wholesale supply (including imports and exports), supply of regulated customers, and the meter reading and billing of customers. Since beginning of 2015 KEDS is divided in two companies: KEDS that performs the activity of electricity distribution that includes all the duties and responsibilities arising from this activity, and KESCO that performs the activity of electricity public supply including all duties and responsibilities arising from this activity.

“Kosovo Electricity Supply Company” (KESICO) J.S.C; Is a company which in 2014 was transferred from KEDS, and transfer entered into force on 01.01.2015. This company operates the public supply and its duties and responsibilities arising from this activity (supply of customers, reading and billing of customers, etc.).



Transmission System Operator (TSO) and Market Operator (MO); KOSTT is established on 1 July 2006, as a result of the restructuring of the energy sector and is responsible for planning, development, maintenance and operation of the electricity transmission system in Kosovo; ensuring an open and non-discriminatory access for third parties; functioning of the new electricity market; providing conditions that encourage competition in Kosovo; cooperating with neighboring Transmission System Operators (TSO) for the benefit of Kosovo and the region. KOSTT operates as the Transmission System Operator (TSO) and Market Operator (MO).



2. LEGAL BACKGROUND

This updated SoSSoK follows the structure proposed by the ECS in its communication of 09.10.2006 and updated on 17.10.2012, which limits the scope to electricity and gas sectors only, as per the relevant directives 2003/54/EC (repealed by directive 2009/72 EC) and 2003/55/EC (repealed by 2009/73 EC).

The Energy Community Treaty in its article 29 calls for statements on monitoring of security of supply one year after the entry into force of the Treaty. In particular the statement should cover: a) diversity of supply, b) technological security and c) geographical origin of the imported fuels.

Furthermore directives require that statements on monitoring of Security of Supply in the electricity and gas markets, in particular cover:

- a) Supply/demand balance on the national market,
- b) Level of expected future demand and available supplies,
- c) Envisaged additional capacity being planned/constructed,
- d) Quality and level of maintenance of the networks,
- e) Measures to cover peak demand, and
- f) Measures to deal with shortfalls of one or more suppliers.

According to the above-mentioned directives, *“Member States shall ensure the monitoring of security of supply issues. Where Member States consider it appropriate they may delegate this task to the regulatory authorities.”*

Based on article 37 of the Law on Energy Regulator, ERO is responsible for monitoring and taking the actions specified in this law to promote and enhance the short-term and long-term security of supply of energy. ERO prepares and publishes every two (2) years a report outlining the findings resulting from the monitoring of security of supply issues, as well as details of any measures taken or envisaged to be taken to address them.

The European Commission has indicated that the obligations under the Energy Community Treaty should not go beyond the EU *acquis*. Therefore it will be sufficient to comply with the Security of Supply requirements under the energy *acquis*.

3. SITUATION OF SUPPLY AND DEMAND BALANCE IN THE ELECTRICITY SECTOR IN KOSOVO

Kosovo has the prerequisites for production of electricity, not only to meet its own needs, but also to export it. Kosovo's power system is designed to produce lignite-based basic energy. As for this, it is a great challenge balancing the system for all sector participants. In order to balance the system it is needed to monitor changes in consumption on a daily and seasonal basis, and to try meeting the demand through domestic generation and imports. In particular cases when domestic generation and import quantities aren't sufficient for covering the demand, in order to keep the system balanced, the load shedding is applied.

In spite of increase of production in recent years, the domestic production is not sufficient to meet the growing consumption. Therefore, a part of consumption of electricity in Kosovo is covered by imports. However, in specific periods, especially in the low tariff period (mostly at nights), there is a surplus of electricity, which is exported. The surplus of electricity mainly occurs during summers, when the consumption in Kosovo is significantly lower.

3.1 Transmission network

Electricity transmission is of particular importance for security of supply and for the operation of entire power system. Kosovo's Transmission network represents the important regional node which is interconnected with European power system.

There exist 400 kV interconnection lines with all neighboring countries except with Albania, which interconnection line is 220 kV. In addition to the 400 kV with Serbia also exist 220 kV interconnection line. In relation to interconnection with Albania it should be mentioned that in 2014 has started construction of 400 kV an interconnection line SS Kosovë B – SS Kashar (Tiranë).

During the years 2000 - 2014, investments have been carried out to enhance and improve the transmission network capacities. These investments has increased security of supply and transmission losses have been reduced significantly – in 2014 transmission losses were 1.42% of the electricity entering the transmission system or 2.2% of the gross consumption.

Owing to investments the transmission network is in good condition, which is shown in the tables below where are presented transforming capacities and the length of transmission network lines as per voltage levels.

Table 3.1 Basic data for transmission lines

Voltage (kV)	Owner	Length (km)
400	KOSTT	188.49
220	KOSTT	231.83
110	KOSTT	802.70

Table 3.2 Basic data for transmission substations

Transformation (kV/kV)	Owner	SS No.	TR No.	Power (MVA)
400/220	KOSTT	1	3	1,200
400/110	KOSTT	2	2	600
220/110	KOSTT	3	9	1,350
220/35	Alferon	1	2	320
220/35/10(20)	KOSTT	1	1	40
220/10(20)	KOSTT	-	1	40
110/35/10(20)	KOSTT	1	4	158
110/35/6.3	Trepça	1	2	126
110/6.3	Trepça	-	2	63
110/35	Ujmani	1	1	20
110/6.3	Sharri	1	2	40
110/10(20)	KOSTT	15	19	678
110/35	KOSTT	8	20	693
110/10	KOSTT	3	8	252

3.1.1 Electricity flows

Kosovo is in a favorable position as a regional node, therefore there is considerable electricity flows through its transmission network. These flows are represented on the figure below for every inter-connected line of Kosovo. Similarly to the recent years, the electricity supply situation in the region is generally characterized with lack of sufficient electricity supply; therefore electricity flows from north to south.

Kosova is a country with a high transit of electricity, at a ratio of up to 50% of transit to consumption (the transit key). This strengthens the position of the transmission system, but also increases transmission losses and leads to network congestion. To manage the regional transit, a mechanism for calculating the transit compensation between TSOs (ITC mechanism) has been established. Kosova has not been included in this mechanism due to the disputes with Serbia. As a consequence, losses caused by transit in Kosova are recovered through fees from regulated customers. KOSTT is also being hampered by Serbia in the allocation of interconnection capacity and from gaining income from transit through territory of Kosovo.

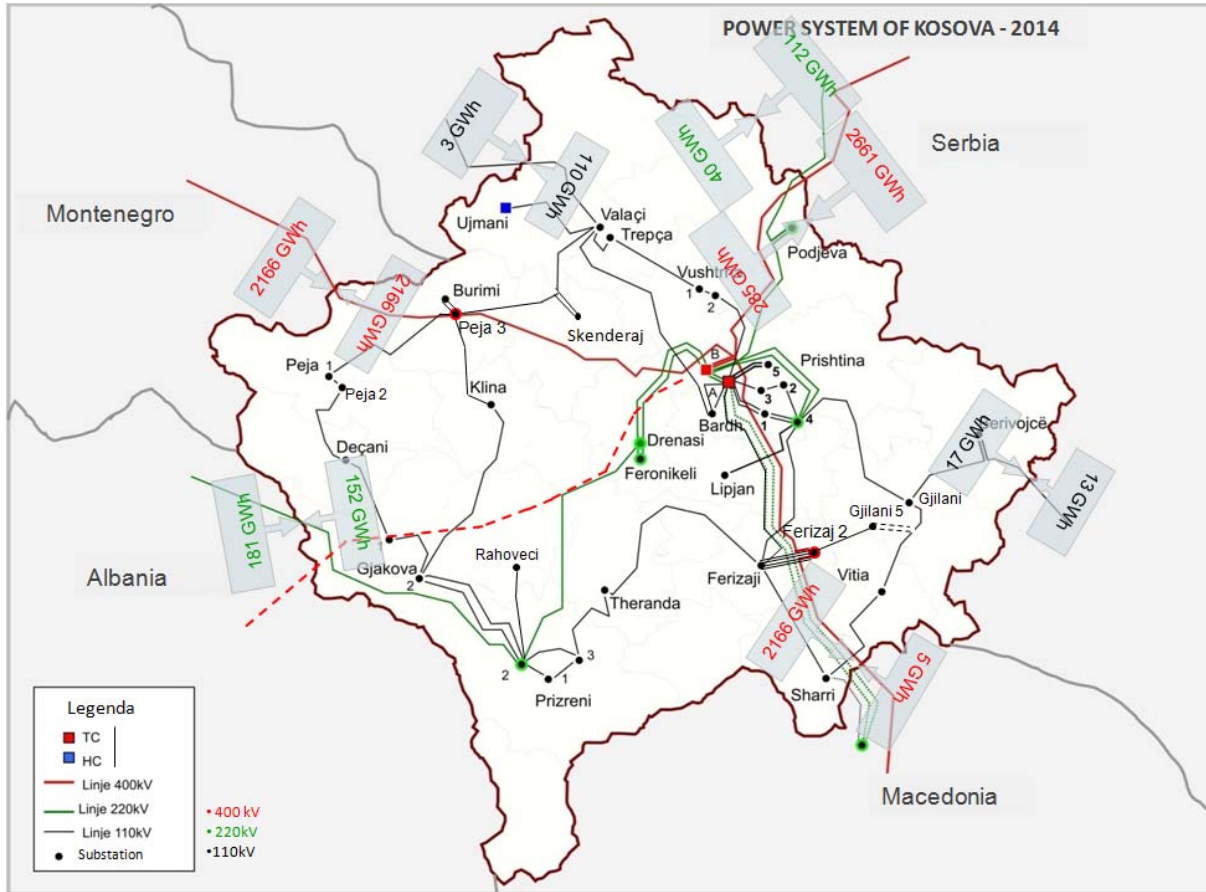


Figure 3.1 Flow of electricity through connection lines

3.1.2 Electricity transmission losses

In recent years can be noted certain stabilization of the curve of electricity losses in transmission. During the year 2014, losses were 109 GWh, or in percentage terms 2.02 % of the overall consumption, while in 2013 these losses were 110 GWh or 2.0 % of gross consumption in Kosovo. Transmission losses also include losses caused by transit.

Losses as a percentage of the total energy introduced into the transmission network in 2014 are 1.42%.

The figure below shows the in transmission losses curve during recent years.

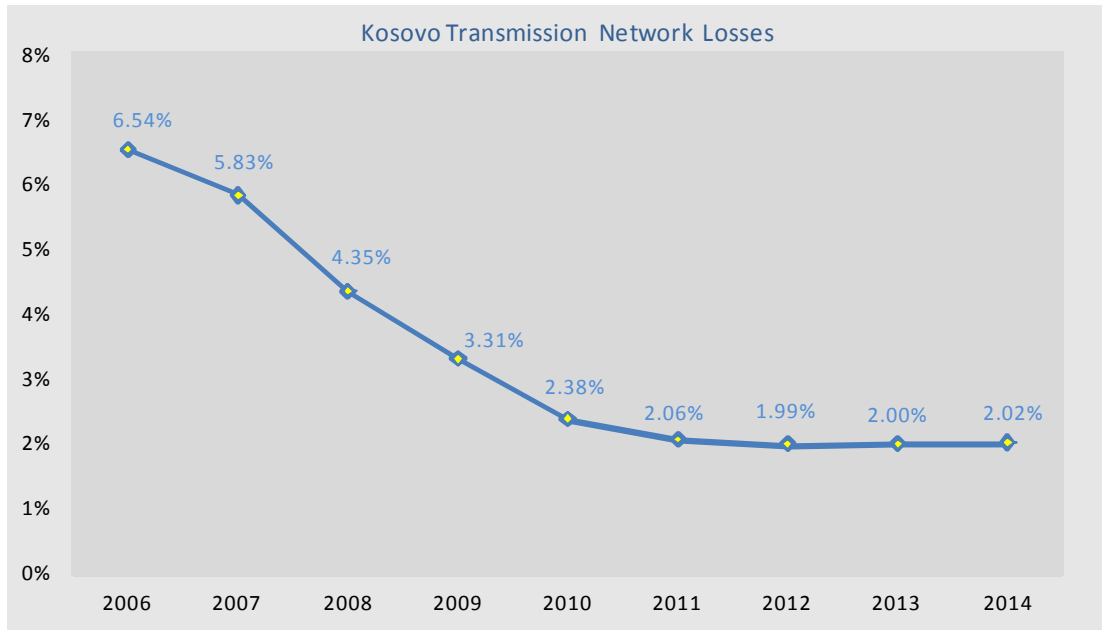


Figure 3.2 Transmission losses 2006-2014

3.2 Distribution network

In recent years there were investments in Distribution Network, which were however insufficient as to ensure quality and reliable supply of electricity to customers.

The distribution network includes lines of voltage levels of 35 kV, 20 kV, 10 kV, 6 kV and 0.4 kV, and relevant substations of 35/xx kV/kV level and lower.

There were continuous investments intended to reinforce and expand transformation capacities and lines of the distribution system as a result of consumption increase year by year. Basic data of substations and lines by voltage level and length in the distribution system are given in the table below.

Table 3.3 Basic data of DSO lines

Voltage (kV)	Owner	Aerial network (km)	Cable network (km)	Total (km)
35	KEDS	596.00	29.00	625.00
10(20)	KEDS	935.62	354.92	1,290.54
10	KEDS	4,967.00	777.00	5,744.00
6	KEDS	45.00	5.00	50.00
0.4	KEDS	11,242.00	423.00	11,665.00

Table 3.4 the number of substations by voltage level in DSO

Transformation (kV/kV)	Owner	SS No.	TR No.	Power (MVA)
35/10	KEDS	46	95	626.00
35/0.4	KEDS	12	15	39.00
10(20)/0.4	KEDS	2,400	2,455	875.04
10/0.4	KEDS	5,524	5,357	1,681.00
6/0.4	KEDS	53	54	15.00

3.2.1 Distribution losses

Overall distribution losses are very high. These losses are divided into technical losses which occur in the network components, and commercial losses which occur as a result of misuse of electricity.

The figure below shows the trend of variations of technical and commercial losses, as well as overall losses in distribution network during the years 2006 – 2014.

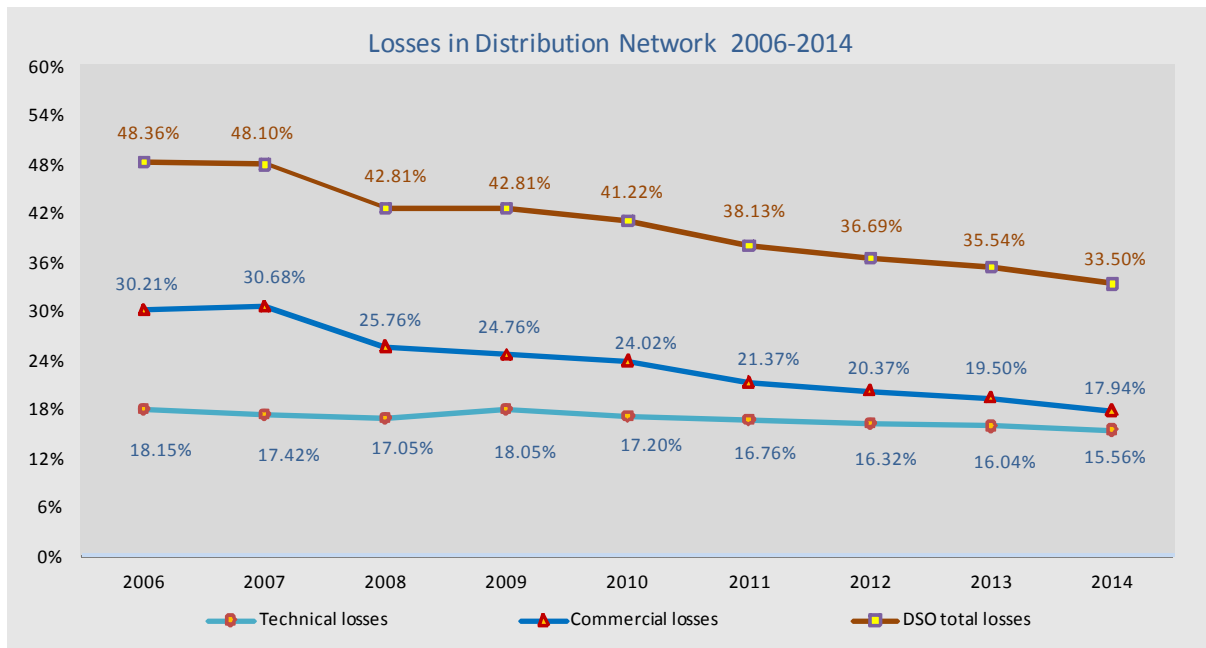


Figure 3.3 Distribution losses 2006-2014

3.3 Electricity generation

The electricity generation capacities of Kosovo are mainly dominated by the lignite fired thermal power plants of Kosovo A and Kosovo B. These two power plants together have a total nominal power capacity of 1,478 MW. Due to lifetime and maintenance conditions, especially of Thermal Power Plant (TPP) Kosovo A, the available capacity of the units is much below nominal values. Altogether the total average available power capacity of the thermal units only amounts to approximately 900MW.

Currently the thermal power generation of Kosovo represents about 97% of the total power generation of the country. Beside this an installed power capacity of 35 MW is provided by the hydro power plant (HPP) Ujmani and 12.19 MW by several other small HPP connected to distribution system.



Table 3.5 The capacity of electricity generation

Generation unit	Capacity of Units (MW)			Set in operation
	Installed	Net	Min/max	
A1	65	Non-operational		1962
A2	125	Non-operational		1964
A3	200	182	100-130	1970
A4	200	182	100-130	1971
A5	210	187	100-135	1975
TPP Kosova A	800	551		
B1	339	310	180-260	1983
B2	339	310	180-260	1984
TPP Kososva B	678	620		
HPP Ujmani	35.00	32.00		1983
HPP Lumbardhi	8.08	8.00		(1957) 2006
HPP Dikanci	3.34	3.18		(1957) 2010
HPP Radavci	0.90	0.84		(1934) 2010
HPP Burimi	0.86	0.80		(1948) 2011
Total HPP	48.18	44.82		
Wind Power	1.35	1.35		2010
Total	1,527.53	1,217.17		

Kosovo A Power Plant has five units, which were constructed during the 1960s and the 1970s. Actually only units A3, A4 and A5 are in operation. Units A1 and A2 have been out of operation for several years. The availability of the Kosovo A units ranges between 60-70%.

The Kosovo B Power Plant consists of two lignite fuelled units of 339MW nominal power generation capacity each. Different projects for rehabilitation of mechanical parts have been carried out between 2000 and 2002, as well as other rehabilitation projects. The aim of specified rehabilitation project was the upgrade of TPP Kosovo B in order to improve the availability and the control characteristics. TPP Kosovo B power plant today operates slightly down-rated, actual capacity 310 MW per unit (about 265MW output) versus 339 MW design capacity. The units of Kosovo B power plant will soon reach the end of their lifetime, therefore, significant investments and rehabilitation measures planned to be undertaken in 2017/2018 will bring these two units to the required environmental standards and will extend their lifetime beyond 2030.

Due to better maintenance of generation capacities, significant investments in repairs of generating units, and sufficient coal production, electricity production has been increased year by year.

The chart below shows the total generation within Kosova for the years 2004-2014 where a continuous increase is noted until 2013, while in 2014 it was a slight decrease of production.

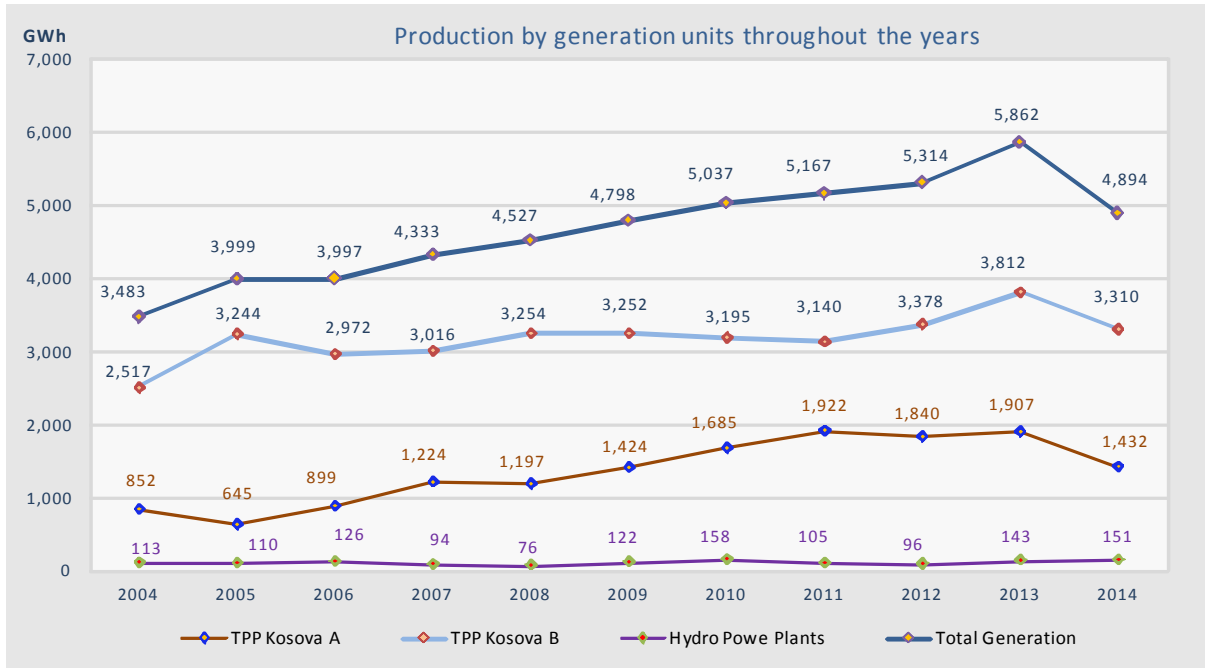


Figure 3.4 Total generations 2004-2014

3.4 Gross demand and peak load

The overall electricity demand for 2014 was 5,399 GWh, which represents a slight reduction of the demand by 2.2 % compared to 2013 when the demand was 5,574 GWh. During the years 2000 - 2010 the consumption was continuously increased; from 2010 it was noted the stabilization of consumption, while during three last years the slight decrease of consumption is noted.

In the chart below is presented the consumption during the period 2000 – 2014.

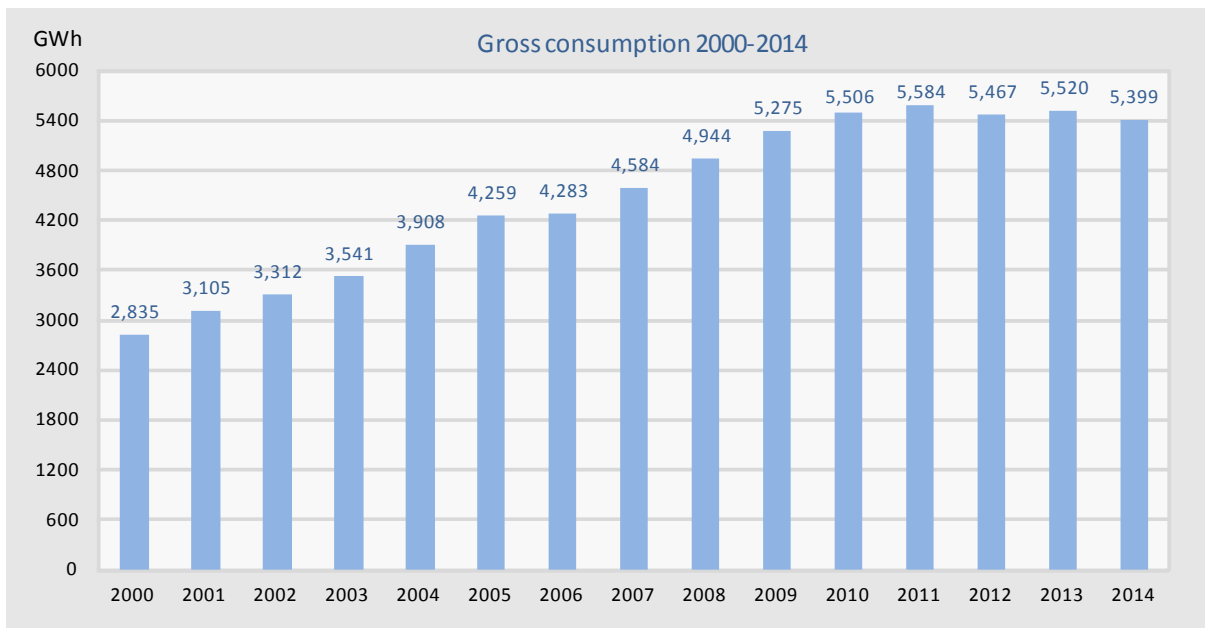


Figure 3.5 Total demands 2000-2014



Total net energy demand in 2013 was 5,520 GWh with the winter peak 1,101 MW, and in 2014 was 5,339 GWh with the winter peak demand reaching 1,154 MW.

To evaluate the load of the transmission network, an analysis of electricity flows through the network and the maximum values of consumption are required. To carry out these tests, five (5) peak values (maximum loads) occurring across different weeks in 2014 are used.

The following table shows five peak values for 2014.

Table 3.6 Five peak values in 2014

Peak load (MW)	Hour	Date
1,154	19	31.12.2014
1,077	20	30.12.2014
1,044	18	29.12.2014
1,036	21	26.01.2014
1,028	20	27.01.2014

Daily diagram extracted as an hourly average for the whole year 2014 shows that daily production was with little variations, while consumption has changed at day - night intervals. Load shedding has also partially an impact in the form of daily diagram.

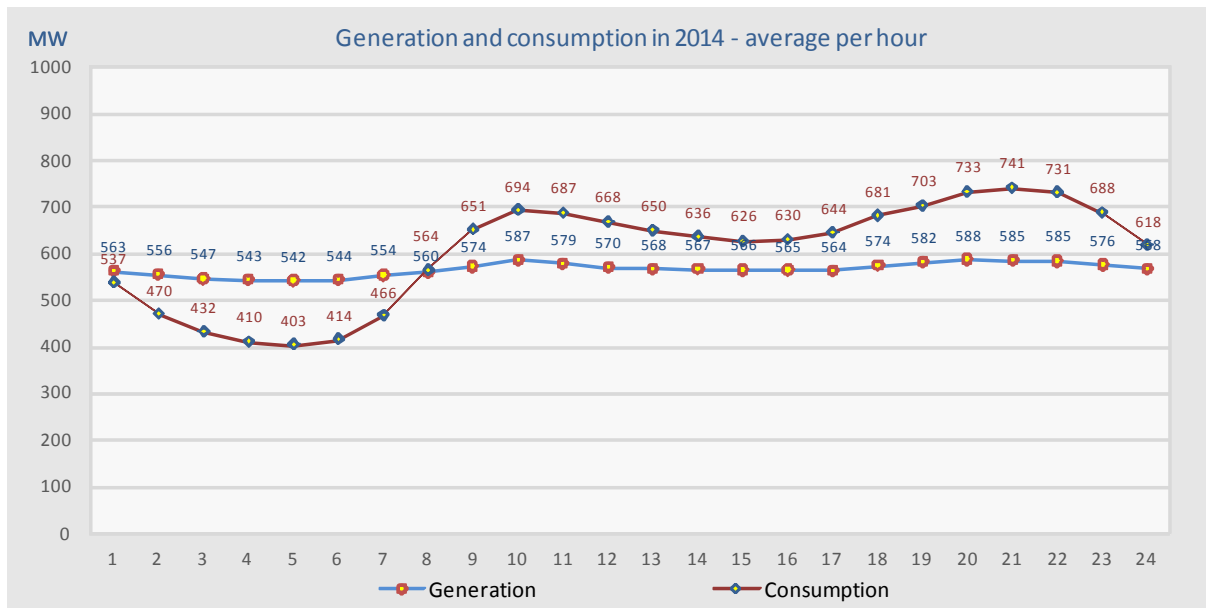


Figure 3.6 Daily diagram presented in average hourly values for 24 hours for 2014

The difference between consumption in daytimes and nighttimes is quite high. The chart below shows the difference between the maximum and minimum average values of daily consumption by months, for the year 2014.

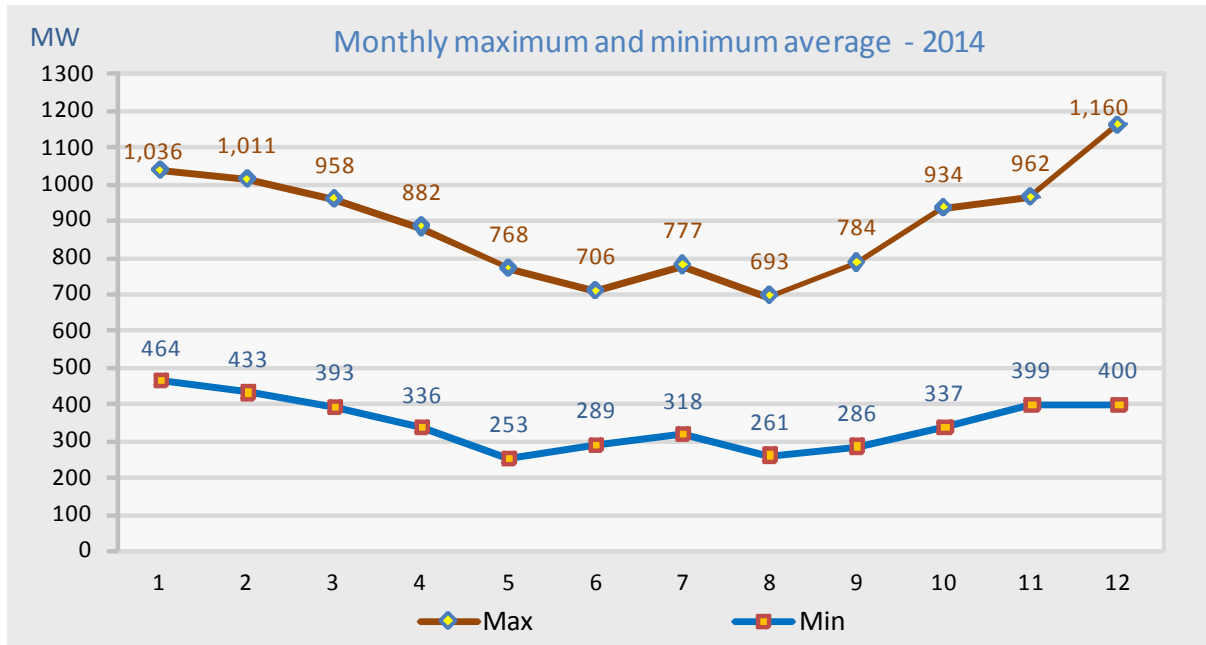


Figure 3.7 Monthly averages of maximal and minimal loads

Consumption of electricity by customer category for 2013 and 2014 is given in Table 3.7. It should be emphasized that the following customers: Ferronikeli, Trepça and Sharrcemi are connected to the transmission network.

Table 3.7 Consumption by categories and losses

Customer category	2013 GWh	Share in consumption (2013)	2014 GWh	Share in consumption (2014)
Household consumption	2,130	38.6%	2,063	38.2%
Commercial consumption	721	13.1%	737	13.6%
Industrial consumption	727	13.2%	853	15.8%
Commercial losses	935	16.9%	817	15.1%
Technical losses	769	13.9%	709	13.1%
Transmission losses	110	2.00%	109	2.02%
KEK internal consumption	128	2.3%	112	2.1%
Total	5,520	100.0%	5,399	100.0%

3.5 Consumption in the distribution system

For the period 2000-2014 consumption in distribution system is mainly characterized by growth, except in year 2014. Total demand in distribution during the period 2000-2014, can be seen from the chart below.

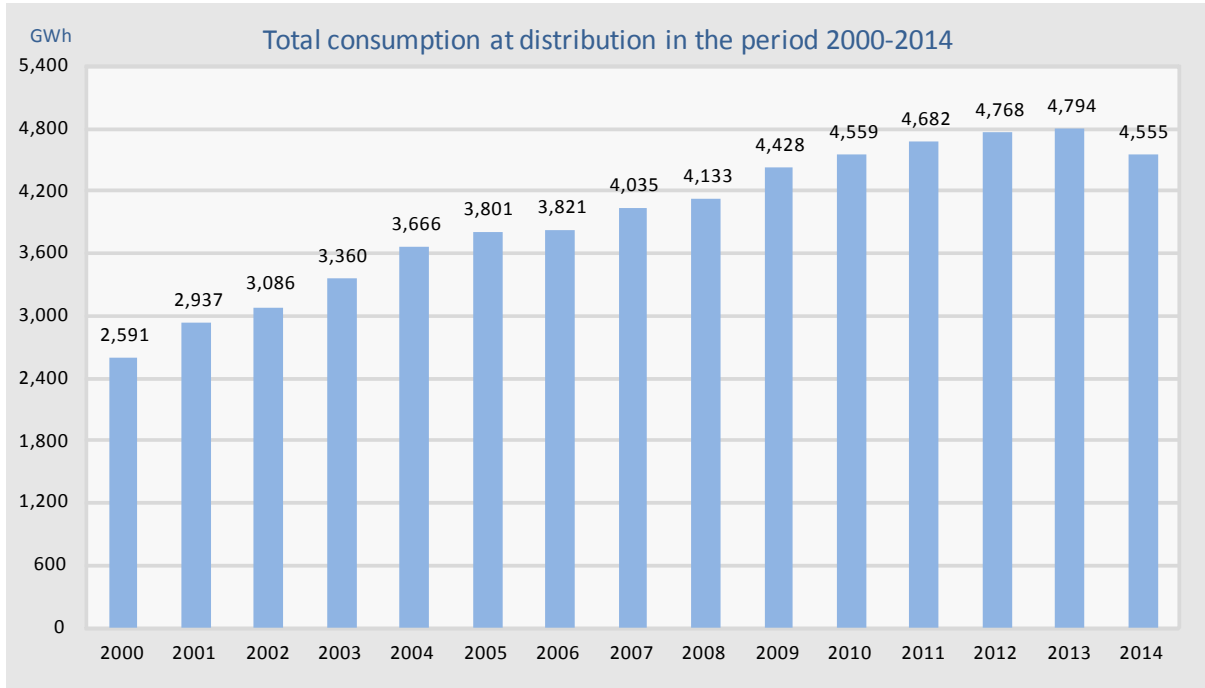


Figure 3.8 Total consumption in Distribution System for 2000-2014

Although it is noted certain decrease of electricity load-shedding, still the load-shedding was present during 2013 and 2014.

It is important to analyze and present the share of electricity consumption by customer categories in total consumption, in order to may identify consumption patterns. Figure 3.9 shows the share of customer groups in total consumption in distribution (presented with and without distribution losses).

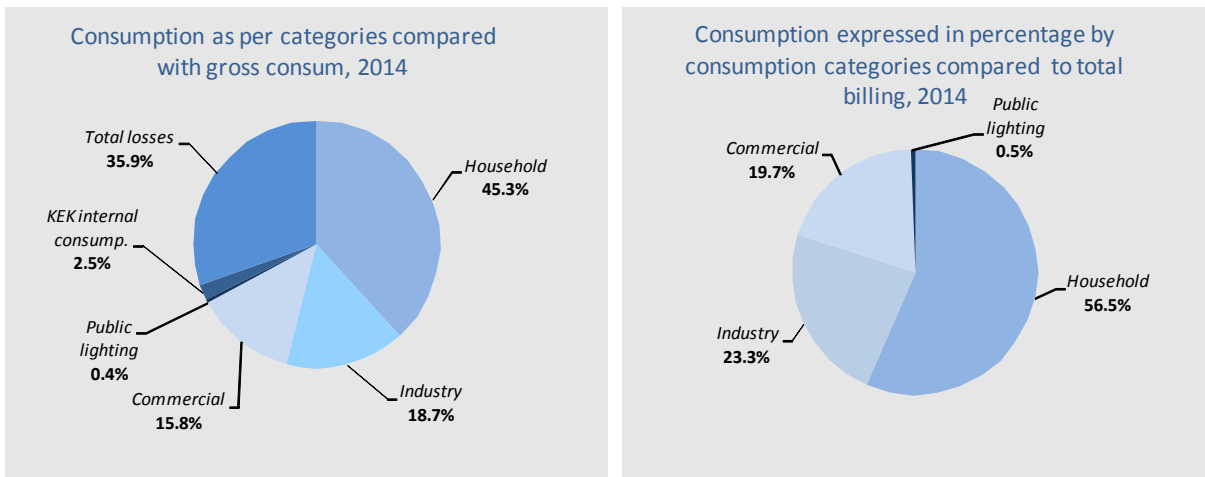


Figure 3.9 Share of consumption categories in distribution

3.6 The balance of electricity production and demand in previous years (2000-2014)

The balance of electricity production and demand in the period 2000-2014 is presented in Figure 3.10:

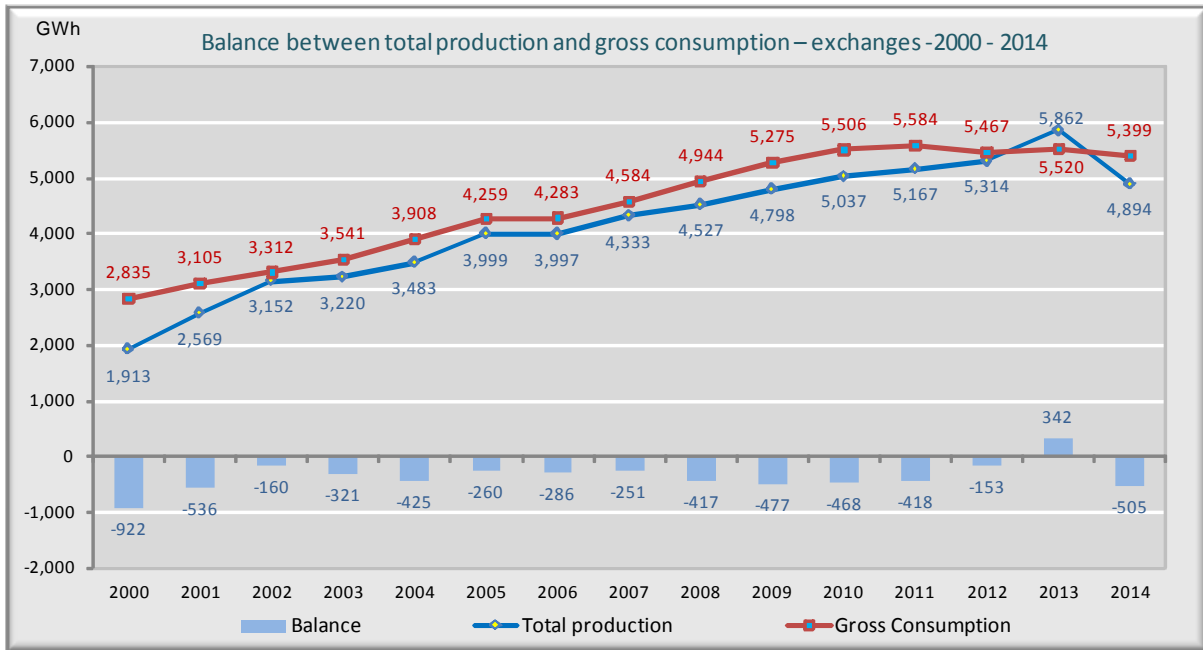


Figure 3.10 Balance of electricity production and demand in previous years (2000-2014)

During the period 2000-2014 total consumption is increased for average of 6.0%. Since after the war until 2013, generating units didn't meet electricity demand; it has been therefore necessary to import electricity in order to meet the electricity demand. However during certain period, particularly during nights in summer there were certain surpluses of electricity, which was exported. Only in 2013 the electricity production has exceeded the consumption, thus in 2013 Kosovo was net exporter of electricity, while in other years always the imports were higher than exports.

The figure above clearly shows the level of net imports to ensure supply of electricity to consumers. Average net imports from 2000 to 2014 make 7.8% of total consumption in the Republic of Kosovo.

For the period 2013 and 2014 the electricity situation can be summarized as follows:

- While in 2013 the Country's electricity production was higher than the demand, in 2014 the production was lower than the demand, mainly due to the accident in TPP Kosova A in June 2014;
- Technical and commercial losses are still at high level; particularly worrisome is the fact that the level of commercial losses remains very high representing a challenge for the sector.
- Demand side management measures were not fully implemented;
- Collection rate was improved in last two years – in 2013 was 88.05% and in 2014 has reached the level of 95.6%.
- Electricity system balance, in some cases still is achieved through load shedding; and
- Electricity imports continue to cover a certain share of overall country's consumption.



4. ACTIVITIES RELATED TO THE CONSTRUCTION OF NEW GENERATING CAPACITY

Project Steering Committee for the thermo power plant "Kosova e Re" on April 2013 approved the tender documents, on the basis of which the new plant will be built on public-private partnership.

During 2014, there was a concrete movement for developing the project of TPP Kosova e Re and, as a result of these activities, in December, the offer for this project was opened and assessed. TPP "Kosova e Re" will present the main pillar of sustainable generation from lignite, securing basic energy for the system. ERO participated in the Project Steering Committee and Working Group.

The first unit is planned to be in operation no later than December 2020, while the second unit is expected to be operational 2021. Each unit will have install capacity of 300 MW.

Renewable Energy Sources (RES) represent a particular interest in the energy sector. European Directives and obligations stemming from ECT define the requirements related to RES. These sources should take an important place in foreseeing the investments in the energy sector. In addition, the laws in energy sector in Kosovo support the investments in generation capacities from RES. The criteria for investments in RES should take into account the targets set by MED, level of affordability of customers, system stability, and their impact on system balance.

4.1 Renewable Energy Sources

Referring to long-term goals of the Kosova Strategy, government policies, i.e. Administrative Instruction 06/2007 on "Consumption of electricity from renewable sources" which was recently changed by the Administrative Instruction nr.01/2013 on Renewable Energy Targets, "Pre-feasibility study to identify water sources for small hydro-plants in Kosova", as well as obligations deriving from the South Eastern European Energy Treaty in the field of new generating capacities from renewable sources, ERO has completed the secondary legislation on renewable energy sources.

An important activity of ERO is considered to be the issuing of Authorizations for the construction of new generating capacities that is using renewable energy sources, in accordance with the Article 38.1 of the Law on Energy Regulator and Rule on the Authorization Procedure for the Construction of New Capacities, issued by ERO.

ERO has reviewed applications/requests received for authorization for the construction of new generation capacities, in accordance with the laws on the energy sector and relevant regulations, ensuring that such applications have been reviewed in an objective, transparent and non-discriminatory manner. In reviewing applications, ERO has taken into account relevant criteria that had to be met by the applicant as required by the Rule on the Authorization Procedure for the Construction of New Generating Capacity, Gas Networks, Direct Electric Lines and Direct Pipelines.

During the period 2013 – 2014, ERO has received 23 applications for construction of new generating capacities from RES, with overall capacity of about 326 MW. From these applications five (5) belongs to wind generation capacities with installed capacity of about 190 MW, thirteen (13) applications are for construction of small HPP with installed capacity of 128 MW, and five (5) applications for construction of solar photovoltaic panels with total capacity of 9.6 MW.

During this period ERO has issued six (6) final authorizations for construction of new generation capacities with total capacity of 16 MW. Except the company "Kelkos Energy" that is in the phase of completing the construction of three units of HPP, with capacity of 23.1 MW, construction of one solar photovoltaic plant with capacity of 102 kW is completed and the plant actually is in operation; while the other 5 HPP's are in the different phases of construction.

4.2 Incentives to build RES capacities

For the promotion of electricity generation from renewable energy sources the Law Nr. 03/L-184 on Energy, Article 12, requires that participants in the energy sector perform the following tasks:

- a) When dispatching electricity generation, the transmission system operator, or the distribution system operator where appropriate, shall give priority to electricity generation from renewable energy sources and co-generation, subject only to any limits specified for purposes of system security by the Grid Code and other rules and codes.
- b) Transmission and distribution system operators shall establish and publish standard rules on who bears the costs of technical adaptations, such as grid connections and grid reinforcements, necessary to integrate the electricity produced from renewable energy sources into the interconnected system. Such rules shall be submitted for approval to the ERO, shall be consistent with the Energy Strategy and shall be based on objective, transparent and nondiscriminatory criteria, taking particular account of all the costs and benefits associated with the connection of these producers to the system.
- c) Transmission and distribution system operators shall provide any new electricity producer using renewable energy sources or co-generation wishing to be connected to the system with a comprehensive and detailed estimate of the costs associated with the connection for which estimate the system operator may levy a charge that reflects its reasonable costs.
- d) Transmission and distribution system operators shall establish and publish standard rules relating to the sharing of costs of system installations, such as grid connections and reinforcements, between all electricity producers benefiting from them. Such rules shall be submitted for approval to the ERO, and shall be consistent with the Energy Strategy and any applicable secondary legislation, rules or codes.
- e) ERO shall ensure that transmission and distribution fees for connection and for use of the transmission and distribution systems do not discriminate against electricity from renewable energy sources, including in particular electricity from renewable energy sources produced in peripheral regions, such as regions of low population density.
- f) The public supplier shall give purchasing priority to electricity produced from renewable energy sources for which a certificate of origin has been issued by the Energy Regulatory Office. Public supplier shall be required to purchase at a regulated tariff the entire amount of electricity produced from renewable sources.

As required in article 12 of the Law on Energy, KOSTT has developed and ERO has approved the Connection Charging Methodology. This document was developed under fully transparent and non-discriminatory criteria that define obligations for each party.

Regarding promotion for developing renewable, MED has adopted annual and long-term targets, for which ERO has approved feed-in tariffs (wind, small HPP, biomass and solar photovoltaic). RES will have PPA for 10 years except for photovoltaic which PPA period is 12 years.

5. FORECAST OF DEMAND AND GENERATION

In order to secure reliable supply of customers, an adequate planning of the electricity demand and generation is needed, including the obstacles that could arise during the implementation. Main issues related to the supply of electricity are:

- Continuous growth of electricity consumption that cannot be met by domestic electricity generation;
- Overall losses in the Kosovo power system remain high;
- Non-technical losses (unauthorized use of electricity) still remains in high level;
- Lack of alternative energy sources (e.g. natural gas), which is could have been suitable for balancing the system;
- Low electricity prices compared to free market prices;
- Relatively high prices of other energy sources (e.g. fuel oil), pushing consumers to use electricity for heating;
- The increase of petrol and diesel consumption in transport has contributed to the growth of the overall energy imports in Kosovo.

5.1 Forecast of demand for different economic growth scenarios

Based on long-term energy balance 2015-2024, approved by the Ministry of Economic Development, is presented below the projection of GDP growth in the next 10 years, which is used for the electricity demand forecast.

Table 5.1 Three scenarios of GDP growth rate in [%] for the period 2015-2024

Annual growth [%]	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
GDP Base Growth Scenario	4.3	4.5	4.5	3.2	4.0	4.0	4.0	4.0	4.0	4.0
GDP Low Growth Scenario	3.6	3.8	3.8	2.5	3.3	3.3	3.3	3.3	3.3	3.3
GDP High Growth Scenario	5.0	5.2	5.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8

(Scenarios that are built do not claim to be precise in predictions, because so much data and a very clear development strategy for the various economic and social sectors are needed. Base scenario considered more acceptable on forecast of demand)

To forecast of electricity demand, are integrated four correction factors, which are considered to have significant impact in three different growth scenarios:

1. The implementation of the government program for the efficiency of electricity use;
2. Reduction of commercial losses (reduced consumption due to improved efficient and effective billing procedures that are based on metering and control);
3. The impact of GDP in consumption;
4. Forecast of technical losses in transmission and distribution network.

*Table 5.2 Correction factors which are used to forecast electricity demand:*

Correction factors which are used to forecast electricity demand [%]	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
GDP	4.3	4.5	4.5	3.2	4.0	4.0	4.0	4.0	4.0	4.0
Efficiency	0.4	0.9	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9
Commercial losses	11.9	10.9	9.9	8.9	7.9	6.9	5.9	5.4	4.9	4.4
Technical losses	14.3	15.3	15.1	14.8	14.6	14.3	14.1	13.7	13.4	13.1
Transmission losses	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0

The Base demand scenario (BDS) for electricity envisages a slight increase of demand in the household sector, whereas high increase of demand is projected for the services and industrial sectors. Electricity demand (base scenario) in 2015 is forecasted at 5,854 GWh; in 2024 the demand will reach 7,036 GWh; the associated peak loads will be around 1,180 MW, and 1,438 MW in respective years.

Electricity demand and peak loads for the three scenarios are presented in Table 5.3.

Table 5.3 Electricity demand and peak loads for the period 2014 – 2024

Gross demand [GWh]	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Growth Scenario	5,854	5,833	5,936	6,068	6,180	6,318	6,473	6,620	6,820	7,036
Low Growth Scenario	5,503	5,483	5,579	5,583	5,686	5,813	5,890	6,024	6,138	6,332
High Growth Scenario	6,089	6,300	6,410	6,554	6,798	6,950	7,120	7,282	7,502	7,740

Peak load [GWh]	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Growth Scenario	1,180	1,210	1,245	1,283	1,300	1,345	1,390	1,410	1,424	1,438
Low Growth Scenario	1,085	1,113	1,145	1,180	1,196	1,211	1,251	1,269	1,282	1,298
High Growth Scenario	1,227	1,271	1,332	1,373	1,391	1,439	1,487	1,509	1,524	1,547

The forecast of increased demand according to the high demand scenario implies not sufficiently justified or premature investments for the construction of new power generation capacities as well as investment for expanding the capacities of the transmission and distribution networks.

Base growth scenario of total gross electricity demand as well as for other consumer categories, including technical losses in the transmission and distribution network and commercial losses in the DSO (Distribution System Operator), for the period 2015 – 2024 are shown in Figure 5.1

Technical and commercial losses are forecasted to be reduced in a linear way, despite the continuing growth of demand.

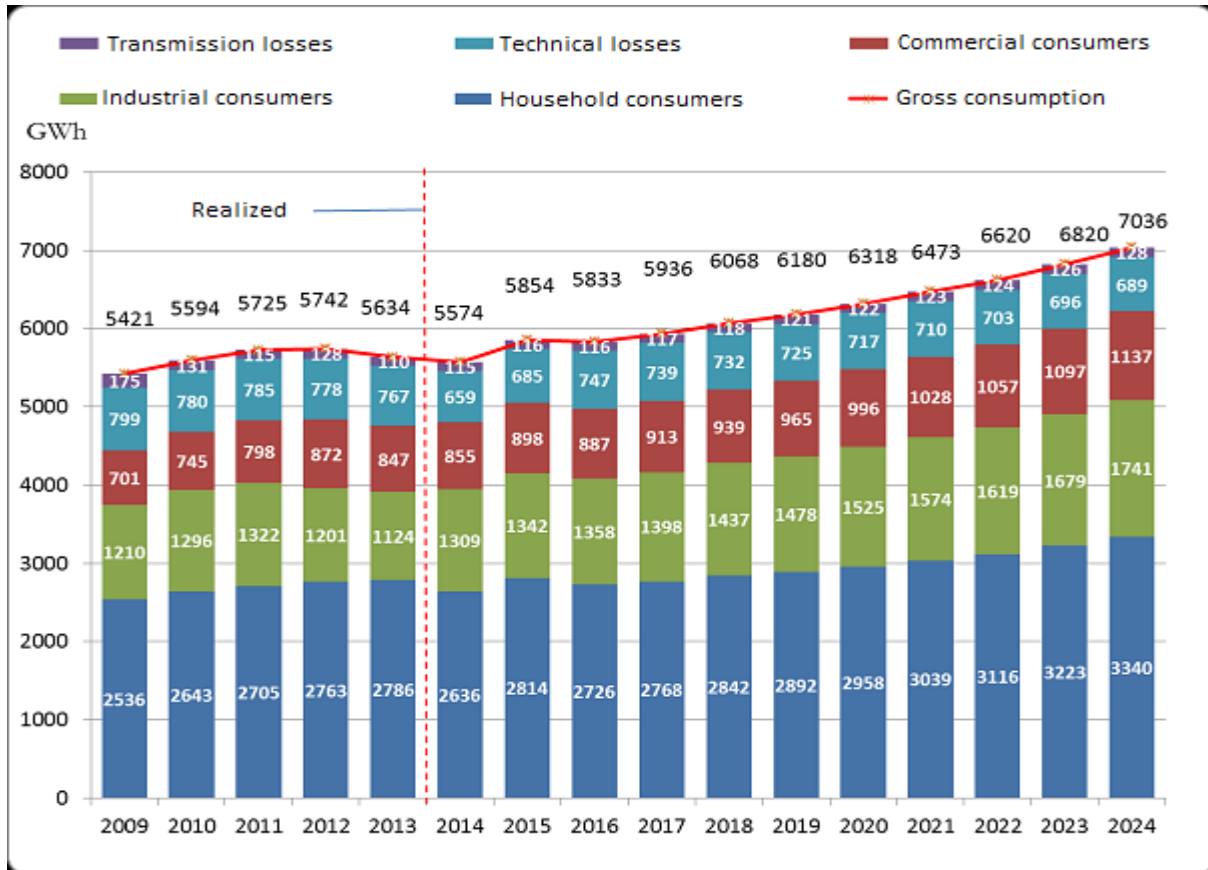


Figure 5.1 Basic scenario of electricity demand for 2009-2024 divided into consumer categories

It should be noted that the data of industrial consumption forecast have been provided by Trepça and Sharr-Cem (KOSTT questionnaires) and the forecasted demand by Ferronikeli. Development of the rest of the industrial consumption such as food industry, light industry, industrial parks (manufacturing businesses) etc. is primarily based on forecasts of GDP as the main factor for the development of this sector, respectively growth of industrial consumption in electricity.

5.2 Electricity generation forecast for the period 2015-2024

The forecast of power generation for the period 2015-2024 is based on production of electricity from TPP Kosova B, TPP Kosova A, HPP Ujman, existing small HPPs, renewable energy sources, HPP Zhur and production from TPP New Kosova (table 5.4 and 5.5).

Table 5.4 Basic scenario of developments in the existing generation capacity

Generation unit	Capacity of Units (MW)			Set in operation	Life expectancy
	Installed	Net	Min/max		
A3	200	182	100-130	1970	2017
A4	200	182	100-130	1971	2017
A5	210	187	100-135	1975	2017
TPP Kosova A	800	551			
B1	339	310	180-260	1983	2030
B2	339	310	180-260	1984	2030
TPP Kosova B	678	620			
HPP Ujmani	35.00	32.00		1983	> 2030
HPP Lumbardhi	8.08	8.00		(1957) 2006	> 2030
HPP Dikanci	3.34	3.18		(1957) 2010	> 2030
HPP Radavci	0.90	0.84		(1934) 2010	> 2030
HPP Burimi	0.86	0.80		(1948) 2011	> 2030
Total HPP	48.18	44.82			
Wind Power	1.35	1.35		2010	> 2030
Total	1,527.53	1,217.17			

Meanwhile the basic scenario of the development of new generation capacity (TPP, HPP and renewable sources) is presented in Table 5.5

Table 5.5 Base scenario for new generating capacity in the future

NEW GENERATION CAPACITY				
		Install capacity	In operation	Life
New TPPs	TPP New Kosova			
	G1	P=300 MW	2020	>2050
	G2	P=300 MW	2021	>2050
	New TPP			
	G3	P=400 MW	> 2025	>2050
Renewable Energy Sources	HPP Zhuri			
	G1+G2+G3	P=305 MW	2020	>2060
	Small HPPs	P2024= 240 MW	2015- 2024	>2050
	Wind turbines			
	>4 wind farm	P2024. = 165MW	2015- 2024	2035-2045
	Biomass	P2024. =14 MW	2016- 2024	>2050
	Solar	P2024 = 16 MW	2015- 2024	2035-2045

From tables 5.4 and 5.5 can be concluded as follows:

- (i) Power generation from TPP Kosova A, operating with A3, A4 and A5 units (In line with the European Directive for Large Combustion Plants, the units of TPP Kosova A) could be operated until the end of 2017¹.

¹ Time of decommissioning of the units of the TPP Kosova A will depend from the time of commissioning of the units of TPP New Kosova.



- (ii) Power generation from TPP Kosova B, operating with B1 and B2 units – It is anticipated that these two units will be rehabilitated during the period 2016 – 2017, including investments needed to meet emission standards required by EU Directive for Large Combustion Plants. These units would continue their commercial operation for up to 15 more years after revitalization, respectively until 2030.
- (iii) Power generation from Ujmani Hydro Power Plant (HPP), which under the precondition of proper maintenance and rehabilitation could continue its commercial operations for a long-term period.
- (iv) Power generation from the Zhur Hydro Power Plant, expected to be in operation in 2020.
- (v) Power generation from new units of TPP “Kosova e Re”. Its first generation unit is expected to enter into commercial operation in 2020 and the second in 2021.
- (vi) During the period 2015-2020, about 20 HPPs will be developed, entering into operation with a total installed capacity of over 240 MW.
- (vii) Substantial participation in the production of electricity from renewable sources is projected to be mainly from wind generators; until the end of 2020 it is expected to reach the capacity of about 150 MW.
- (viii) Until the start of production in TPP “Kosova e Re”, the uncovered demand by domestic generation will continue to be met by imports.

Based on the above assumptions, electricity generation from domestic power generation plants for the period 2015-2024 is shown in Table 5.6.

Table 5.6 Electricity generation forecast [GWh]

Base scenario for all generation units [GWh]	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
TPP Kosova A	1,624	2,143	2,142	2,142	0	0	0	0	0	0	0
TPP Kosova B	3,894	4,202	4,195	3,260	3,348	4,392	4,392	4,392	4,392	4,392	4,392
TPP New Kosova	0	0	0	0	0	0	3,135	4,703	4,703	4,703	4,495
New TPP	0	0	0	0	0	0	0	0	0	0	0
Total from TPPs	5,518	6,345	6,337	5,402	3,348	4,392	7,527	9,095	9,095	9,095	8,887
HPP Ujmani	82	84	82	82	82	84	84	84	80	82	80
HPP Lumbardhi	26	60	92	92	105	105	105	105	105	105	105
HPP Dikanca+Burimi+Radavci	18	18	23	22	26	26	26	26	26	26	26
HPP Zhuri	0	0	0	199	398	398	398	398	398	398	398
Small HPPs	0	0	609	654	731	821	1,001	1,001	1,001	1,001	1,001
Total from HPPs	126	162	806	1,049	1,342	1,434	1,614	1,614	1,610	1,612	1,610
Biomass power plants	0	0	45	60	75	90	105	105	105	105	105
Wind farm	3	3	181	222	262	282	302	302	302	302	302
Solar power plants		8	12	14	17	19	21	23	25	27	31
Total Biomass, Wind, Solar	3	11	238	296	354	391	428	430	432	434	438
Total renewables	129	173	1,044	1,345	1,696	1,825	2,042	2,044	2,042	2,046	2,048
Total Gross Generation	5,647	6,518	7,381	6,747	5,044	6,217	9,569	11,139	11,137	11,141	10,935

Electricity generation forecast is also presented graphically in Figure 5.2.

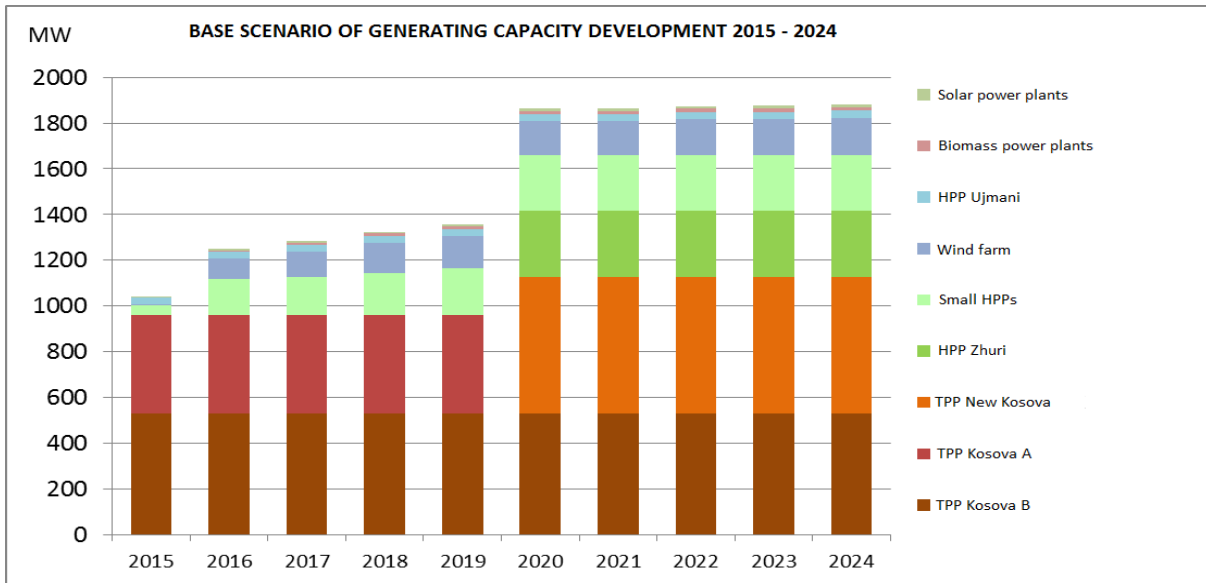


Figure 5.2 Electricity generation forecast [GWh]

5.3 The balance of production and consumption for 2015 - 2024

The balance of the electricity in the next ten years considers the forecasted demand and development of generating capacity and needs for electricity import or export. The realization of imports and exports of electricity depends on the demand and on the development of local and regional electricity markets. The Figure 5.3 shows the balance of electricity for the period 2015-2024 defined by the difference between production (base scenario) and demand (base scenario)

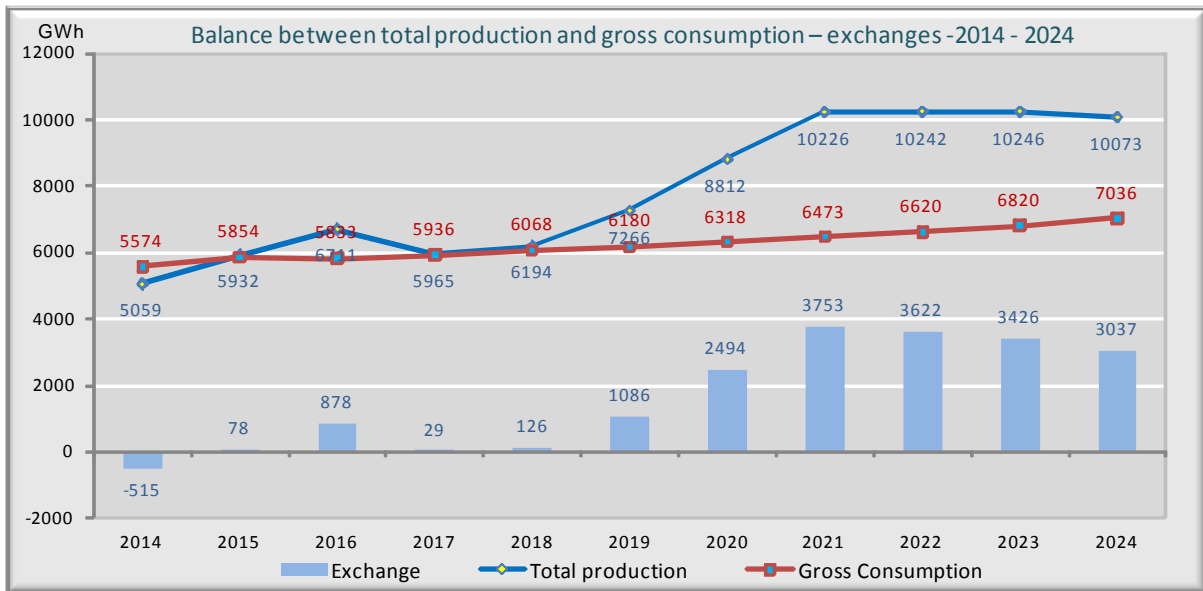


Figure 5.3 Balance of electricity production and demand in the future (2015-2024)

Negative value indicates energy deficit of electricity (needs for imports), while the positive value indicates surplus of electricity (export possibilities). In the figure is shown the difference between planned net production and planned consumption, without taking into account the electricity needed for ancillary services (primary, secondary and tertiary reserves) and non-utilized capacities of generation units.



6. NATURAL GAS SECTOR

6.1 General description

Kosovo has no natural gas production and it is not linked to any of operational natural gas supply networks. A connection to natural gas supply would be an important option to diversify fuel supply in the country and to increase security of supply, but there are actually no projects under construction or planned.

Gas supply and consumption in Kosovo is therefore limited to bottle LPG (liquefied petroleum gas).

6.2 Currently available production and import capacity

There is no production of natural gas in Kosovo, nor import capacity by pipelines.

6.3 Forthcoming production and import investment for the next three years

Authorized - There are actually no authorized investment projects.

Actually in process of construction - There are no projects under construction.

6.4 Description of the role of regulatory authority or other authorities

Law 03L-185 “on Energy Regulator” established a strong, fully-independent Regulator (Energy Regulatory Office - ERO), completely autonomous from any Governmental Institution to exercise economic regulation in the energy sector (Electricity, District Heating and Natural Gas); the Law defines ERO’s executive powers, duties and functions, amongst which are:

- Issuing, amending, suspending, transferring and terminating licenses to carry out energy activities;
- Supervision, monitoring and ensuring compliance with licenses;
- Monitoring functioning of energy markets in Kosovo, including access conditions for parties;
- granting authorizations for construction of new generation capacities and gas pipeline systems, including direct electricity lines and direct pipelines;
- development and issuing tariff methodologies, and determining and approving tariffs for regulated services;
- to prescribe general conditions of energy supply;
- monitoring and taking actions, as stipulated by the law, to promote and enhance security of energy supply;
- monitoring the effective unbundling and development of competition in the energy sector; and
- review and approval of customer protection measures, and resolving disputes in energy sector.

The establishment of ERO falls within the wider framework of energy policy harmonization in South Eastern Europe. On behalf of Kosovo, UNMIK signed Treaty on establishing the Energy Community of South East Europe (ECSEE).



Requirements relating to supplier of last resort -There are no special requirements.

Incentives to increase production/import capacity or any type - There are no specific incentives in place.

Requirements relating to the availability of storage for public service reasons – Article 6: “Gas Storage Facilities” of the Administrative Instruction on Security of Supply in Natural Gas Sector, stipulates possible measures for ensuring security of gas supply by using gas storage capacities within country.

6.5 Progress in major infrastructure projects

Important interconnection projects between or within Member States -Currently there are no natural gas network interconnection projects for Kosovo in preparation.

Regulatory framework under which they will operate -The Law 03/L-133 on Natural Gas, which was adopted in November 2009 establishes legal framework for organization and functioning of natural gas sector and for access to the market. The Law is in compliance with the Directive 2003/55/EC and the Regulation 1775/2005.

MED has developed secondary legislation as required by this Law, namely has issued Administrative Instruction no. 01/2010 on Security of Supply in the Natural Gas Sector, which outlines the policies and measures for ensuring security of gas supplies.

7. OIL SECTOR

7.1 Legal and Institutional Framework

The main law governing the oil sector in Kosovo is the Law no. 2004/5 on Trade with Petroleum and Petroleum Products enforced in 2004, amended by Law nr. 03/L-138 enforced in 2009. The Law applies to the wholesale and retail supply, transport, and storage of petroleum and petroleum products. Also the Department for petroleum market regulation operates in accordance with relevant provisions of above mentioned law and is responsible for regulation and monitoring of the oil sector in Kosovo. The petroleum market structure is controlled by the Ministry of Trade and Industry through the Market Inspectorate.

It was prepared a draft Law on Trade with Petroleum and Bio-fuels, which is transposed from Oil Stock Directive 2009/119/EC, and promotes biofuel use according to directive 2009/28/EC. Actually the draft law has passed all procedures stipulated by the law and is waiting for final approval.

It was drafted by the Ministry of Trade and Industry the Law on Obligatory stockholding of petroleum, which has passed all legal internal procedures within the Ministry and was submitted to the Government for the approval as the draft law.

The full transposition of directive 1999/32/EC on limitation of sulphur content in certain fuels (heavy fuel oil and gasoil) was done through Administrative Instruction 07/2012 which was enforced in April 2012. The Administrative Instruction is being fully implemented.

7.2 Domestic supply of crude oil and petroleum products

Kosovo has neither production of crude oil nor crude oil imports. Kosovo is net importer of petroleum products, and produces only heavy fuel oil for heating from imported raw material amounting one fourth (1/4) of the consumption of heavy fuel oil. There are four licensed production plants, which currently produce heavy fuel oil with less than 1% of sulphur content; heavy fuel oil with less than 1% sulfur content is produced by mixing heavy fuel oil containing over 1% sulfur with light oils such as gasoline and kerosene.

7.3 Import and consumption of crude oil and petroleum products

Kosovo is net importer of oil products. Since there are negligible amounts of domestic production and exports, almost all consumption within the country is covered by imports. In recent years the total import of oil products did not have significant upward trend, but only slight variations.

In the table and the graph below are presented data for consumption, import, and production and export (negligible amounts).

Table 7.1: Data for petroleum products in 2014 (in 1,000 tons)

	Petroleum Products (domestic production)	Export	Import	Consumption
Total	9.3	3.2	608.8	604.7
Raw materials (kerosene, gasoline, heavy fuel oil over 1% Sulfur)	-	-	10.2	-
Diesel	-	-	328.2	328.2
Petrol	-	-	61	61
Heavy Fuel Oil	9.3	-	29.1	38.5
Kerosene	-	-	2.4	2.4
LPG propan and Butan	-	-	32.9	32.9
Bitumen	-	3.1	34.3	31
Petrol coke	-	0.1	105.7	105.7
Lubricants	-	0	5	5

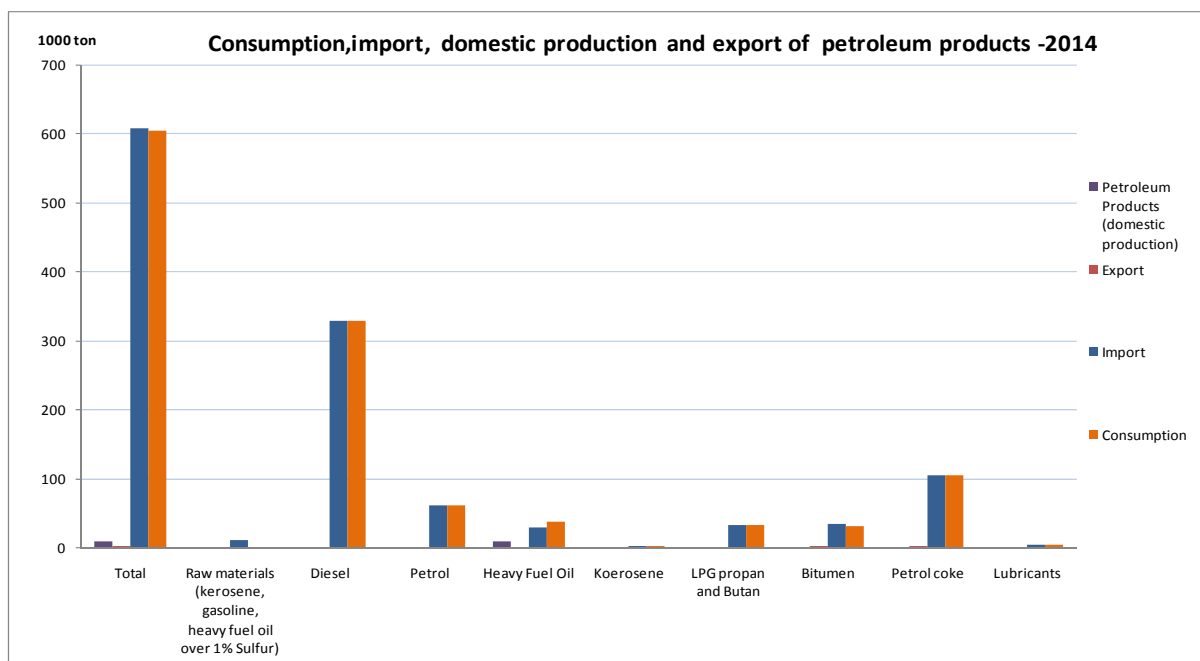


Figure 7.1 Data for petroleum products in Kosovo in 2014

7.4 Imports dependency and origin of imported fuels

Kosovo is almost 100% dependant on imports of oil products. Imports of oil products originate from regional countries. The pattern of imported oil products in 2014 is presented in the table below.

Table 7.2 Origin of Imports by counties of the region

1	Albania	46%
2	Bosnia & Herzegovina	35%
3	Serbia	13%
4	Greece	3%
5	Montenegro	3%

7.5 Share of Oil in Total primary energy supply (TPES)

According to the data published by Kosovo’s Statistical Agency for years 2013-2014 oil products represent 26.7% of the total primary energy supply in Kosovo.

7.6 Stockholding of crude oil and petroleum products

Law on trade with petroleum and petroleum products obliges all petroleum and petroleum products storage facilities and sale points to maintain reserves of at least 5% of their storage capacity at any time for emergency purposes. Current licensed storage capacities have approximately 80,000 m3 and approximately 40,000 m3 for retail sale of fuels, therefore 5% of this capacity equals to 3-4 days of average daily net import. There are additional 50,000 m3 of storage capacities that are not being used and are not licensed for fuel storage. Currently there are 12 storage facilities that are licensed for fuel wholesale (diesel, petrol, LPG).

Table 7.3 shows the proposed roadmap from Energy Community for Kosovo to meet the obligations of Directive 2009/119/EC by the end of 2020.

Table 7.3: Kosovo’s roadmap for achieving emergency oil stocks

Task	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Legal										
Develop regulatory framework/laws										
Enact relevant laws and regulations										
Organisational and Management										
Develop strategy and organisation for managing stocks										
Set up Central Stockholding Entity (as required)										
Develop stockholding obligations for operating companies (if required)										
Development of Emergency Response Planning										
Development of Inventory monitoring and reporting system										
Engineering										
Secure Engineering Budget										
Assess and design additional tank capacity										
Engineering design for additional tank capacity										
Tender for storage construction										
Build required additional tank capacity										
Stockbuilding										
Arrange financing for purchasing of emergency stocks										
Build-up emergency stocks										
Report compliance progress to the Energy Community										

7.7 Oil infrastructure

Kosovo does not possess a pipeline for crude oil nor for oil products. Oil products are imported 75% by road transportation and 25% by railroad.

7.8 Import/Export Customs duty

Kosovo* has an open market for oil products, and prices are set freely by the market. However, a 10% customs duty is still levied on imports of petroleum products (excluding diesel and petrol on which there is no customs duty) such as fuel oil, kerosene, LPG, lubricants, bitumen, and petrol coke from all countries apart from CEFTA parties. To the extent they concern Energy Community



Contracting Parties; these customs duties are in violation of Article 41 of the Treaty and need to be removed. MTI sent written requests to legal department of Ministry of Finance as well as to the Deputy Minister of Finance that this customs duties need to be removed.

7.9 Price Regulation, role of the regulatory authority

The authority for price regulation is the Division for petroleum market regulation based on existing Law no. 03/L-138 on Trade with petroleum and petroleum products. However, price regulation is not applied since the market is very competitive with over 40 importers for transport fuels and many other importers of other petroleum products. The wholesale and retail prices are freely set by market forces.