



Republika e Kosovës
Republika Kosova-Republic of Kosovo
Qeveria - Vlada - Government
MINISTRIA E ENERGJISË DHE MINIERAVE
MINISTARSTVO ENERGIJE I RUDARSTVA
MINISTRY OF ENERGY AND MINING

ENERGY STRATEGY OF THE REPUBLIC OF KOSOVO

2009 – 2018

Prishtina, 2009



Republic of Kosovo
Assembly

Legislature III

The Assembly,

Pursuant to Article 65 (9) of the Constitution of the Republic of Kosovo and Rule 46 of the Assembly Rules of Procedure, in the Plenary Session held on 1 April 2010, after reviewing the Report of the Committee for Economy, Trade, Industry, Electricity, Transport and Telecommunication on the Draft Energy Strategy 2009 – 2018, took the following

DECISION

- I. The Energy Strategy 2009 – 2018 is hereby adopted, including the recommendations of the Committee for Economy, Trade, Industry, Electricity, Transport and Telecommunication, listed as follows.
 1. Lignite resources are made available and are exploited in line with the new generation capacities and in accordance with Kosovo's development interests,
 2. A competitive-friendly legal framework, and an open market of the energy sector shall be developed,
 3. Energy Strategy, Section 11.2.5 'Rehabilitation of TPP "Kosovo B" with the participation of the private sector' is amended in the third sentence of the second paragraph, and the new wording is as follows: "the private sector shall be included within the "Kosova e Re" transaction,
 4. Construction of new generation capacities shall be done in line with Kosovo's long-term interest, in the first phase with 1000 Megawatts, with the possibility of further capacities, in line with the country's and the region's energy demand and energy balance,
 5. Kosovo Government shall harmonize the Action Plan with the adopted Energy Strategy 2009 – 2018.

Nr. 03-V-272
1 April 2010
Prishtina

Assembly Speaker
Jakup Krasniqi
Signed

Decision is sent to:

- Kosovo Government
- Committee for Economy, Trade, Industry, Electricity, Transport and Telecommunication, and
- Assembly Archives

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Acknowledgements

Ministry of Energy and Mines (MEM) expresses its gratitude to all those who cooperated with MEM in reviewing the Energy Strategy of Kosovo 2005-2015 and developing this Energy Strategy of Kosovo 2009-2018, including the Energy Regulatory Office (ERO), the Kosovo Electricity Transmission, System and Market Operator (KOSTT JSC), the Kosovo Energy Corporation (KEK JSC), district heating companies, Ministry of Economy and Finance, Ministry of Trade and Industry (MTI) and the LPTAP Project Office.

MEM also wishes to thank the World Bank, the European Commission, and the United States Agency for International Development for the overarching support they offer to energy sector institutions in Kosovo. MEM is confident that with such support in the future, Kosovo will manage to transform and restructure its energy sector, as well as attract necessary foreign investment, which would enable the integration of this vital sector in the regional and European energy systems. This is the only way for Kosovo to fulfill its strategic objectives of fundamentally enhancing the security of supply of economically viable and competitive energy services for domestic customers.

Abbreviations

AP	Action Plan
BK	Kosovo Budget
CBT	Cross Border Trade
DH	District Heating
DSM	Demands Side Management
EAR	European Agency for Reconstruction
EC	European Commission
EE	Energy Efficiency
EMS	Energy Management System
EnCT	Energy Community Treaty
EPAP	European Partnership Action Plan
ERO	Energy Regulatory Office
ESIP	Energy Strategy Implementation Program
ETSO	European Transmission System Operators
EU	European Union
EWG	Energy Working Group
IMF	International Monetary Fond
GDP	Gross Domestic Product
GoK	Government of Kosovo
GWh	Gigwatt hour
HDS	High Demand Scenario
HPP	Hydro Power Plants
ICMM	Regulation on the Independent Commission on Mines and Minerals
KEK JSC	Kosovo Energy Corporation
KfW	Kreditanstalt fur Wiederaufbau
KOSTT JSC	Kosovo Electricity Transmission, System and Market Operator
ktoe	Kilo Ton Oil Equivalent
kW	Kilowatt
kWh	Kilowatt hour
LFC	Load and frequency control
LMF	Lignite Mining Fees
LPG	Liquefied Petroleum Gas
LPTAP	Lignite Power Technical Assistance Project
MDS	Medium Demand Scenario
MEF	Ministry of Economy and Finance
MEM	Ministry of Energy and Mines
MESP	Ministry of Environment and Spatial Planning
MEST	Ministry of Education Science and Technology
MLSW	Ministry of Labor and Social Welfare
MPSA	Stabilisation and Association Process Tracking Mechanism
MTEF	Medium Term Expenditure Framework
MTI	Ministry of Trade and Industry
MW	Megawatt
POE	Public Enterprises in Kosovo
PPP	Public Private Partnership

RER	Renewable Energy Resources
RES	Revised Energy Strategy
RfP	Request for Proposal
SCADA	Supervisory Control and Data Acquisition System
SEE	Southeast Europe
SESA	Strategic Environmental and Social Assessment
STM	Stabilization Tracking Mechanism Process
SWOT	Strengths, weaknesses, opportunities and threats
TEEA	Temporary Energy Exchange Agreement
TPP	Thermo Power Plant
TSO	Transmission System Operators
TTA	Temporary Technical Agreement
UNMIK	United Nations Mission in Kosovo
UN	United Nations
WB	World Bank

EXECUTIVE SUMMARY

This document represents the revision of the Kosovo Energy Strategy for the period 2005-2015. Based on an analysis and reflecting on the current situation, this Strategy identifies the most important challenges faced by the energy sector, guides the development of most suitable policies for transforming it, as soon as possible, into a vital, sustainable and financially viable sector in Kosovo, which provides quality energy services that are economically favorable for consumers in Kosovo. Also, it identifies the key policies and measures to be undertaken for advancing sector reforms, thus attracting private investments, providing for environmental protection and a complete and prompt integration of Kosovo's energy systems into regional and European ones.

This Strategy pays special attention to compliance with European Union *Acquis*, since those provisions are compulsory for Kosovo, which is a responsibility undertaken through its membership in the Energy Community. The Strategy aims to stimulate rational use of energy and increased energy efficiency as well as utilization of renewable energy resources and introduction of new technologies for implementing the environmental standards as set forth by law.

The strategic objectives, policies and measures identified in this Strategy for each energy subsector constitute the basis for developing the Kosovo Energy Strategy Implementation Program 2009-2011.

The Strategy covers a 10-year period. Its goals and anticipated measures represent a clear vision for certain key aspects of great interest for the development of the energy sector during the 2009-2018 decade. The Strategy is divided in two parts.

The First Part contains a comprehensive presentation and analysis of the current situation and progress achieved in the energy sector between 2006-2008, including policies implemented to this date; the existing legal and regulatory framework; existing energy institutions and enterprises; analysis of energy consumption, generation, transmission, distribution and supply; progress in the heating, natural gas, energy efficiency and renewable energy resources sectors; financial support to the energy sector both by public resources and donors; progress in preparation for development of the Kosovo e Re Thermo power Plant; and progress achieved in the area of regional and European integrations. The first part of the strategy concludes with a summary of a SWOT analysis for the Kosovo energy sector. Based on the analysis presented in the Part One of the Strategy, the challenges for the energy sector are identified, on which the strategic objectives are set as listed in the Part Two of this document.

Part Two contains the energy demand forecast and its coverage for the 2009-2018 period, both aggregated and divided by economic sectors; Strategy's mission and vision; strategic objectives; policies and priority measures for realization of the strategic objectives; European integration and international cooperation perspective; the need and measures to increase local institutional capacities; and measures foreseen to implement Strategy.

A special focus in this Strategy is given to achievement of the security of qualitative electricity supply as soon as possible. Towards this, particular attention is given to

development of new electricity generation capacities and rehabilitation of TPP Kosova B, both to be funded through private sector investments. The same is foreseen also for the future sufficient and sustained supply of lignite for these generation capacities.

Improvement of billing and collection levels for electricity consumed represents a significant challenge for KEK j.s.c and the government institutions. Accomplishment of set objectives will constitute a good basis for enhancing the confidence among investors in the energy sector by decreasing perceived risks.

Fulfillment of obligations deriving from the Energy Community Treaty and European integration process represents another important dimension of this Strategy. In this aspect, a number of measures need envisaged to be undertaken in the future for the completion of energy sector restructuring and reform in line with the EC directives and other applicable legislation, in order that this sector becomes not only financially self-sustainable but also able to attract private investments and contribute significantly to faster and sustainable economic and social development of the country.

Application of the EU approach regarding energy, environment and competition represents the focus of this Strategy. This will facilitate integration of our country's energy system with the European energy ones. Special attention is paid to protection of environment from pollution caused by emissions from energy facilities.

Both improvement of energy efficiency and utilization of renewable energy resources are considered important elements of this Strategy. This document provides clear policies and measures for both of these important sectors.

This Strategy aims also to promote the preparation of a comprehensive legal and regulatory framework which would enable the attraction of considerable private investments in our energy sector. The objective is for Kosovo's energy sector regulatory framework to be clear and complete in order to enhance confidence among foreign investors.

Finally, it is rather important to emphasize that the vision of this Strategy is that through private investments Kosovo will not only eliminate the burden that the energy sector places on the Budget of Kosovo, but also significantly enhance the security and quality of energy supply.

Part one

1. Introduction

This is a revision of the Energy Strategy of Kosovo 2005-2015 conducted in accordance with the Law on Energy No. 2004/8. The Revised Energy Strategy (RES) is supported by comprehensive analysis and reflection on the current situation in the energy sector. RES identifies the most important challenges faced by the energy sector, and establishes the guidelines for the development of more suitable sector policies that will support the transformation of this vital sector for Kosovo into a sustainable and self-financed sector that provides qualitative energy services under favorable conditions for consumers in Kosovo. It also identifies the main policies and measures that need to be undertaken for the advancement of sector specific reforms that will enable attraction of private investment and the earliest and most complete integration of Kosovo's energy systems into the regional and European ones.

This Energy Strategy review is based on the Kosovo Government Program, a number of Government decisions, and a variety of relevant studies and analysis conducted during the recent years. Particular attention is given to the full compliance of this Strategy with the European Union *acquis* which are legally binding to Kosovo in the framework of its membership in the Energy Community.

This document establishes the basic framework based on which, upon approval by the Government and endorsement from the Assembly of Kosovo, further steps of reforms, complete unbundling and sustainable development of the energy sector are to be performed. Strategic objectives, policies and development priorities identified in this document for each of the energy sub-sectors are intended to establish a good base for development, as required by law, of the Program for Implementing the Energy Strategy for the period 2009-2011.

The Energy Strategy of Kosovo aims at achieving effective management of existing energy resources and protection of the environment. It focuses on enhancing the security of energy supply according to European standards, as well as on the diversification of energy resources. This strategy aims also at stimulating rational utilisation of energy, promoting energy efficiency, promoting development of renewable energy resources and introduction of new technologies that do not cause irreparable damage to the environment, thus respecting the application of internationally accepted environmental standards.

This Strategy covers a 10-year period. It constitutes a clear document developed based on relevant documents and studies. The measures for implementing this revised energy strategy include the short term period of three years 2009-2011, the medium term period until year 2015 and the longer term one until 2018. The goals and measures provided in this document establish a clear vision on some key aspects of high importance for the development of the energy sector during the decade 2009-2018.

2. Energy sector policies, legal framework and institutions

Policy development, organization, regulation and management of the energy sector in the Republic of Kosovo are based on a set of laws generally in compliance with the European

Union (EU) acquis on energy. Energy sector institutions include the government institutions, the regulatory institutions and the energy enterprises.

2.1 Energy policies and economic regulation

The applicable legislation determines the roles and responsibilities in governing and regulating the energy sector. The Assembly of Kosovo adopts the laws. It is presented with the energy policies and strategies proposed by the Government/ Ministry of Energy and Mining (MEM) in consultation with interested parties. MEM drafts the three-year Energy Strategy Implementation Program, organizes the work, monitors and reports on the implementation of the Energy Strategy and prepares its review. MEM is responsible for development of energy policies and decision-making in the energy sector, so as to promote market reforms and good governance. The Energy Regulatory Office (ERO) is responsible for regulation of the sector and licenses actors in the energy markets.

The ERO reviews and approves tariffs and monitors energy markets. ERO ensures transparency and accountability of market actors, and entices improvement of their economic, social and environmental performances. It is in the mandate of ERO to ensure that ‘the public supplier’ fulfills all its ‘obligations to supply’ all consumers in a reliable manner and with cost reflective prices.

Other governmental bodies, such as the Ministry of Environment and Spatial Planning (MESP), the Ministry of Labor and Social Welfare (MLSW), the Ministry of Trade and Industry (MTI), and the Ministry of Economy and Finance (MEF) play an important role in overseeing social, economic and environmental responsibilities in the energy industry sector.

Republic of Kosovo is the owner of public enterprises in Kosovo (POE), including those of the energy sector. The property rights over POEs are exercised by the Government through the MEF, in compliance with the Law on Public Enterprises.

2.2 Legal and regulatory framework

2.2.1 Legal framework

The following laws, regulations and Government Decisions constitute the legal base for the organization and management of Kosovo’s Energy Sector:

- Law on Energy No 2004/8;
- Law on Energy Regulator No 2004/9;
- Law on Electricity No 2004/10;
- Law on Spatial Planning No 2003/4;
- Regulation on Mines and Minerals No 2005/3;
- Regulation on the Independent Commission on Mines and Minerals (ICMM) No. 2005/2, respectively Law on Amendment of the Regulation on Establishment of ICMM;
- Law on Environmental Protection, 2003/9;
- Law on Trade of Petroleum and Petroleum Products 2004/5;
- Law on Scientific Research Activity 2004/42;

- Regulation on the Long-Term Allocation of Socially-Owned Immovable Property Managed by the Municipalities in Kosovo 2005/13;
- Law on Foreign Investments No. 02/2005;
- Government Decision on KEK JSC restructuring No 06/2005;
- Government Decision on KEK JSC unbundling No 04/36, 2008;
- Government Decision on the establishment of an Energy Distribution and Supply Company No 03/38, 2008; and its privatization through public tendering No 03/38, 2008 and No 08/39;
- Law on Public Enterprises No 03/2008;
- Government Decision on Property Policies for Central Public Enterprises No 11/39 and No 13/39;
- Law on Competition No 36/2004;
- Government Decision on the possibility of developing the Hydro Power Plant in Zhur, No. 02/40 2008;
- Law on Expropriation;
- Law on District Heating; and
- Law on Public-Private Partnerships and Concessions.

There are prepared also drafts of the following laws:

- Law on Energy Efficiency;
- Law on Natural Gas; and
- Law on Mines and Minerals.

The aforementioned laws and draft-laws directly related to the energy sector are in compliance with European Directives and requirements of the Energy Community Treaty (EnCT).

The Law on Energy mandates the Ministry of Energy and Mining (MEM) with the developing and proposing of the Energy Strategy that covers a 10-year period. Based on the approved Energy Strategy, MEM is also required by the Law on Energy to prepare a Strategy Implementation Program for a period that covers at least three years (in this document referred to as 'the short-term period').

2.2.2 Regulatory framework

The Law on Energy Regulator No 2004/9 defines the tasks and responsibilities of the Energy Regulatory Office (ERO) in regulating the economic activities of the electricity, district heating and natural gas sectors. ERO, an independent institution, regulates economic activities in the energy sector. The Law on Electricity No 2004/10 establishes the general framework based on which the reform and management of the electricity sector shall be performed.

During 2005-2008 the ERO has prepared and/or approved all of tariff methodologies as well as regulatory codes and procedures of utmost importance for the functioning of electricity and district heating sectors. The current regulatory package is in compliance with the European Union acquis and the obligations deriving from the Energy Community Treaty.

The aim is to have a complete and clear regulatory framework of the energy sector in Kosovo in order to gain confidence of foreign investors that the regulatory framework will be implemented rigorously and predictably in the sense that it will not be changed unexpectedly and arbitrarily in a way that is detrimental to the energy market players, both public and private ones. On the other hand, through this regulatory framework, ERO aims to preserve the interests of consumers, thus providing for a right balance between consumer interests and the interests of both public and private energy enterprises.

2.3 Energy institutions and enterprises

The main institutions include MEM, ERO and the Independent Commission for Mines and Minerals (ICMM). The main energy enterprises include the Kosovo Electricity Transmission System and Market Operator (KOSTT JSC), Kosovo Energy Corporation (KEK JSC) and district heating companies.

2.3.1 Institutions

1. The Ministry of Energy and Mining (MEM) was established in late 2004 with the Annex XIII of the UNMIK Regulation No. 2005/15 amending UNMIK Regulation No. 2001/19 'On the Executive Branch of the Provisional Institutions of Self-Government in Kosovo'. MEM is responsible for energy sector policy and strategy development, preparation of the energy strategy implementation program, and coordination of stakeholder activities to implement such policy and strategy. MEM's detailed roles and responsibilities are clearly defined in the Law on Energy No 2004/8 and in the Annex XIII of the UNMIK Regulation No. 2005/15.

MEM's Mission, Vision and Strategic goals

I. Mission Statement

MEM mission is to contribute to the enhancement of living standards and national wellbeing by promoting the sustainable development of the Kosovo energy, mining and minerals industry while ensuring the efficient and effective exploitation of the energy and mineral resources.

II. Vision

MEM has adopted a long term strategic vision for Kosovo's energy and mining sectors. It is pursuing market oriented reforms and restructuring of both the energy and mining sectors, so as to prepare them for attracting highly required private investment through an open, transparent and competitive process of establishing public-private partnerships. Development of a competitive energy market, in line with the EU *Acquis* and the Energy Community Treaty for the Southeast Europe, to provide high quality and environmentally friendly least cost energy services required for sustainable development of the country is our way forward.

III. Strategic Goals

- To develop and implement policy, strategy, and the legal framework for reforming and restructuring of the energy sector in line with the EU *acquis*
- To promote and support development of a competitive energy market which will be integrated in the EU energy market in the future
- To promote restoration of the financial viability of the energy enterprises
- To ensure security of energy supply to customers in least cost and environmentally friendly manner
- To encourage the exploration and development of new reserves of lignite and other minerals

- To develop and implement policy, strategy, and the legal framework for the mining sector
- To promote private investment in energy and mining sectors in the form of public-private partnerships

2. The Energy Regulatory Office (ERO) was established in 2004 with the Law on the Energy Regulatory No 2004/9 as an independent regulatory authority for the electricity, district heating and natural gas sectors. ERO is primarily responsible for approving tariffs, conducting/facilitating the process of development of new generation capacities, monitoring the energy markets, and preparing and/or adopting energy sector regulations, including codes and rules. ERO ensures transparency and accountability of the energy market players, and engages with them to improve their economic, social and environmental performance. It is also a mandate of the ERO to ensure that the Public Supplier fulfils its “obligation to supply” electricity to households and businesses in a reliable manner and at economic prices – Public Service Obligation.

The ERO has developed a regulatory framework for a transparent and non discriminatory energy market, including tariff methodology, procedures for customer protection, and also reviewed and approved a number of important codes and other rules. It has issued licenses to all energy enterprises in Kosovo, and has approved allowed revenues and tariffs for KEK JSC, KOSTT JSC, and for the district heating companies. The third electricity tariffs review of 2009 tariff applications from KEK JSC and KOSTT JSC was finalized in May 2009 and new electricity tariffs are being implemented as of June 2009. ERO is in the process of approving feed-in tariffs for renewables. Until now, it has adopted ‘feed-in’ tariffs for small hydropower and wind farms.

3. The Independent Commission for Mines and Minerals (ICMM) was established in January 2005 by UNMIK Regulation 2005/2 – representing “Independent Regulatory Agency” in the Mining sector. ICMM is responsible for issuing exploration and exploitation licenses for minerals including lignite. It is also responsible for supervision of the issued licenses.

4. Other government bodies, such as the Ministry of Environment and Spatial Planning, and the Ministry of Labor and Social Welfare, have important roles in overseeing the electricity industry’s other social, economic and environmental responsibilities. MEF has important role in privatization and supervision of public companies.

2.3.2 Energy enterprises

1. Kosovo Energy Corporation (KEK JSC) is the public owned company of Kosovo, which owns and operates the power generation and distribution and lignite mining assets. Its operational and financial performance during 1999-2004 was dismal. From September 2002 till December 2006, KEK JSC has been managed by foreign companies. Since January 2007, another foreign firm is providing technical assistance to KEK JSC. However, until the end of 2008, neither the technical support nor the local management has managed to make KEK financially sustainable. They have failed especially in electricity consumption control and management. Failure to control and manage the electric energy consumption is the major cause of KEK JSC financial problems.

2. The Kosovo Transmission System and Market Operator (KOSTT JSC) was established in 2006, in accordance with the unbundling provisions of the Kosovo Electricity Law and the requirements of the Energy Community Treaty. KOSTT JSC is a publicly owned company responsible for operating, planning, maintaining and developing the transmission network and its interconnections with neighboring power systems in order to maintain security of supply in Kosovo. In addition, KOSTT JSC is responsible for the functioning and operation of the wholesale electricity market in Kosovo. KOSTT JSC's main source of income is transmission charges paid by KEK JSC, as set by the ERO.

3. District Heating (DH) Companies exist in Prishtina, Gjakova, and Mitrovica. Their total heat generation amounts to about 130 GWh_{th}/year, or about 3% of the Kosovo heating demand. The district heating facilities supply the most densely inhabited parts of the cities and public facilities such as hospitals, schools and administrative buildings¹. The Prishtina DH system accounts for over 80% of the total DH capacity in Kosovo. It is operated by Termokos JSC, a local public utility. All the three suffer from very high commercial losses. All DH systems offer space heating only, and not also hot water for household needs. As a result, all these systems operate only during the heating season. Each of the three DH companies is owned by the respective municipality.

3. Sector analysis and progress during the period 2005-2008

3.1 Lignite production and electricity

Kosovo electricity sector is dominated by KEK JSC, a vertically integrated system, with the exception of the power transmission system which is not part of KEK JSC. KEK JSC consists of two lignite mines, Bardh and Mirash, two lignite-fired power plants, Kosovo A and B with a total of effective power generation capacity of 740-840 MW (total installed capacity 1,478 MW), and the power distribution and supply system.

3.1.1 Lignite production

In the long term, lignite will remain the main energy source for production of electricity in Kosovo.

Lignite reserves in Kosovo are located in two large basins called 'Kosova' and 'Dukagjini'. Geological lignite reserves are assessed to amount to 12.5 billion tons (including all categories of reserves). Table 1 presents a summary on lignite reserves by location².

¹ All DH systems deliver heat only and do not provide domestic hot water. As a result, all networks operate only during the heating season.

² Inkos Institute –“Study on assessment of explorations and geological lignite reserves in Kosovo”, Kosovo Basin, Prishtina 2007, page. 81; and Dukagjini, Drenica and other basins, Prishtina 2007, page 56 and page 24.

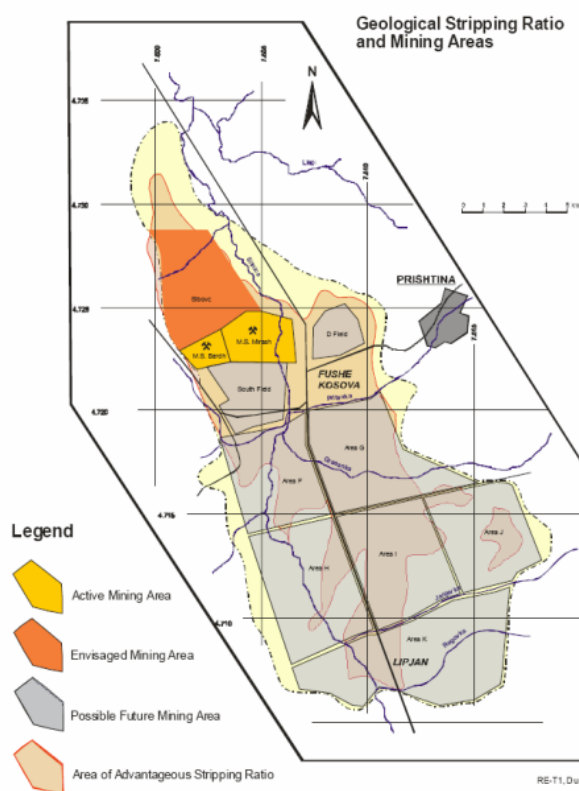
Table 1: Lignite reserves by location

Basin	Surface [km ²]	Reserves [Million Ton]			
		Explored		Exploitable	
		T	t _{ce}	t	t _{ce}
Kosova	274	10,091	2,957	8,772	2,521
Dukagjini	49	2,244.8	782	2,047.7	464
Other	5.1	106,6	22	73.2	19
Total		12,442.4	3,761	10,892.9	3,004

Kosovo's lignite has low sulfur content and relatively good concentration of lime (calcium oxide) for absorbing sulfur during the combustion process. The ratio between lignite and overburden is pretty favorable, a fact this that makes exploitation of these mines with open cast mining competitive and attractive.

Figure 1 shows the locations of the exploitable zones in the 'Kosova' basin.

Figure 1: Location of exploitable zones in the "Kosova" basin



Based on the quantity and exploitation conditions, the following development priorities are determined for the 'Kosova' basin:

Priority 1

Zone C ("Sibovci" or "New mine") and Zone D (Dardhishtë) provide the most suitable superficial exploitation conditions.

Priority 2

Zones G and I provide for the best exploitation conditions in the future, from the perspective of quantity and overburden to coal ratio. These two zones offer sufficient resources to justify the construction of new power plants and development of related lignite mines.

Priority 3

Compared to the other zones, exploitation conditions in Zone E have degraded as a consequence of extra overburden depositing. Resources in Zones F, H, J and K are limited due to the poor overburden to coal ratio, compared to the zones set out in Priority 1 and Priority 2. Apart from Zone J, all other zones have limited potentials because of the high density of population.

Based on analysis performed to date, development of a new lignite mine “Sibovc” or the “New Mine” in Zone C seems to be the most acceptable option from the economic, social and environmental perspective. Due to these conditions, starting the development and commissioning of this mine has considerable advantages.

Geologic lignite reserves of the ‘Dukagjini’ basin are estimated at 2.244 billion tons. Opening of new mines at this location could be planned and possibilities for developing new power generation capacities explored. This requires additional studies that need to be conducted during the period covered by this Strategy. Currently, two fields with development potential are identified. Table 2 summarizes the data for ‘Dukagjini’ basin.

Table 2: Data on ‘Dukagjini’ lignite basin

Dukagjini basin		Zone 1 Tugëpi	Zone 2 Shtupeli
1	Total surface [km ²]	6	11
2	Estimated exploitation surface [km ²]	6	11
3	Estimated average overburden width [m]	60	110
4	Estimated average coal width [m]	35	35
5	Estimated average ratio [m:m]	1.7:1	3.1:1
6	Geologic reserve [Mt]	240	440
7	Exploitable reserve [Mt]	170 (~70%)	310 (~70%)
8	Average caloric value [kJ/kg]	8,400	8,700
9	Power-plant size [MW]	450	840

Based on existing information, lignite reserves of the Drenica basin do not support the option of their exploitation for power generation, but their possible utilization for industrial purposes needs to be assessed. Table 3 summarizes some of the data available regarding ‘Drenica’ basin.

Table 3: Data on ‘Drenica’ lignite basin

<i>Drenica basin</i>		<i>Zone I.</i> Skenderaj	<i>Zone II.</i> Drenas
1	Total surface [km ²]		
2	Estimated exploitation surface [km ²]		
3	Estimated average overburden width [m]		
4	Estimated average coal width [m]	200	10
5	Estimated average ratio [m:m]		
6	Geologic reserve [Mt]	70	25
7	Exploitable reserve [Mt]		
8	Average caloric value [kJ/kg]	7,300	7,300
9	Power-plant size [MW]		

Existing mines and continuing lignite supply of the existing power generation capacities

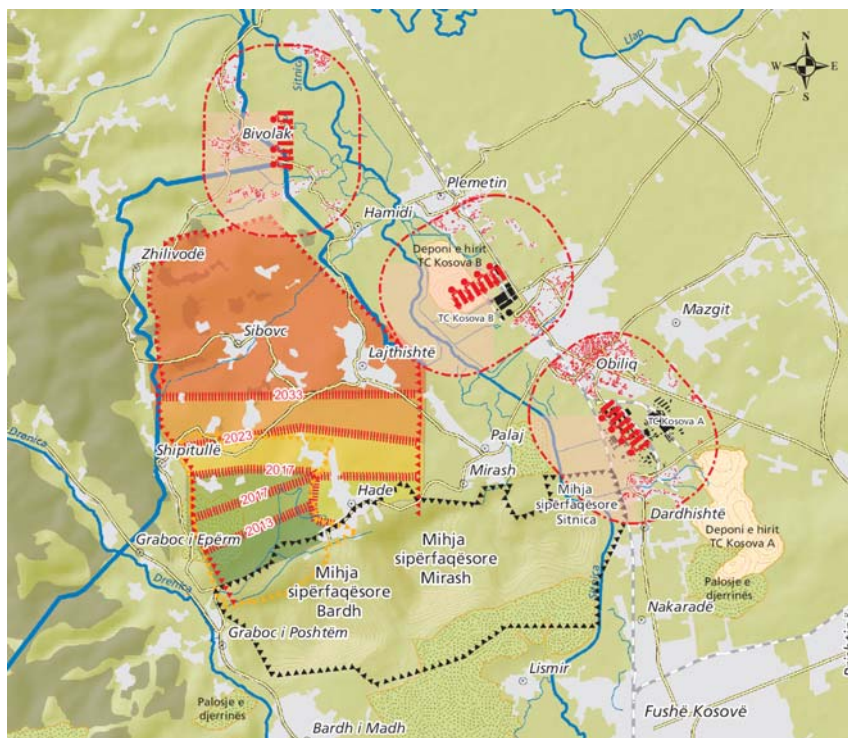
Lignite mining sector as we know it today is the outcome of capital investments realized several decades ago (from 1962 to 1984). Those investments included the development of Bardh and Mirash mines, with total lignite reserves of 300 million tons, the construction of Kosovo A power plant, and later Kosovo B power plant, both with total installed capacity of 1,478 MW.

It has been a widely known fact that lignite reserves of Bardh and Mirash mines are insufficient to supply the two power plants (TPP Kosova A and TPP Kosova B) until the end of their operational life. Therefore, development of a new mine, to supply TPP Kosova A and TPP Kosova B until the end of their operational life and potential expansions of generation capacities, has been planned.

During the 90-ies, due to political and economic circumstances, the mining sector witnessed stagnation, degradation and the new mine was never opened.

Based on the projects for the development of the new mine, in an effort achieve continuous supply of TPP Kosova A and TPP Kosova B, KEK JSC is striving to open the new mine in Sibovc South-West, where lignite production is expected to commence in 2010. In the meantime, to mitigate effects of the short period of time available for the normal development of this mine, KEK JSC has expanded its lignite exploitation activities in the eastern part of Mirash, called the Sitnica Sector, where exploitable reserves amount to 10 million tons. Figure 2 shows the locations of existing mines and the new Sibovc mine.

Figure 2: Locations of existing mines and the new Sibovc mine



With the initiation of construction of Kosova e Re power plant, an increase of lignite production capacities will be required. The ‘New Mine’ Sibovc mine will be exploited to address this increased demand, as it has sufficient reserves to supply the existing power generation facilities until the end of their operational life, as well as to supply the Kosova e Re lignite-fired power plant for the 40 years of its operational life.

The reclamation of exploited land is an important part of the New Mine development project.

3.1.2 Electricity generation

The power sector’s generation, distribution and lignite mining assets are operated by the publicly-owned KEK JSC. KEK JSC suffers from major technical, financial, staffing (too many employees) and managerial problems. Almost all Kosovo’s power generation capacities are part of the two thermopower plants – Kosova A and B.³

Although 24 to 46 years old, the installed power generation capacities of the two thermopower plants, would fulfill basic electricity consumption demands. But, due to the degradation and underinvestment in the lignite and thermopower plant sector in Kosovo during 1990-1999, lack of maintenance, and lack of timely necessary rehabilitations, the technical availability and performance of power generation units, although improvements

³ Kosovo has only about 43 MW of operational hydropower capacity, although there exists significantly more potential for hydropower generation.

are made during the past several years until 2008, are still under installed parameters. Table 4 summarizes data on existing thermopower generation capacities in Kosovo.

Table 4: Existing thermopower generation capacities in Kosovo

Power plant unit	Power plant unit capacity (MW)			Fuel type	Year of commissioning (age)
	Installed	Net	Net available		
TPP Kosova A					
Unit A1	65	58	0	Lignite/Oil	1962 (46)
Unit A2	125	113	0	Lignite/Oil	1964 (44)
Unit A3	200	182	110-120	Lignite/Oil	1970 (38)
Unit A4	200	182	110-120	Lignite/Oil	1971 (37)
Unit A5	210	187	125-130	Lignite/Oil	1975 (33)
TPP Kosova B					
Unit B1	339	309	240–260	Lignite/Residual fuel oil	1983 (25)
Unit B2	339	309	260 – 280	Lignite/Residual fuel oil	1984 (24)

Source: KEK JSC (October 2008)

The only important plant outside KEK JSC is the Ujmani/Gazivoda Hydropower plant (2 X 17.5 MW = 35 MW), administered by the Public Hydro-System Company Ibër-Lepenc (ILE).

Units A₁ and A₂ are out of operation and their reactivation is not planned. They will be decommissioned. Emergent and capital repairs have been performed in unit A3 in 2006, unit A4 in 2007 and unit A5 in 2008.

Since September 2007, active power of both units of TPP Kosova B is reduced due to damages in the low pressure rotors of both turbines. For this reason, currently, the maximum net available power of unit B1 is 240MW, while that of the unit B2 is 280MW. This situation is expected to last until 2010 when new rotors will be installed and the capacity of two units will be increased.

Production capacities in TPP Kosova A are: unit A3 - 115 MW, unit A4 - 115 MW and unit A5 - 125 MW. Although having undergone major repairs, these three power generation units still remain unreliable. The three units of TPP Kosova A and the two units of TPP Kosova B have a total production capacity of approximately 870 MW. Availability of TPP Kosovo A units is not at a sufficient level, while in TPP Kosovo B the situation is better. Hydropower production comes mainly from Ujmani Hydropower Plant (HPP) with installed capacity of 35 MW and Lumbardhi HPP with installed capacity of 8.3 MW. Thus, the overall available power generation capacities are about 900 MW.

The situation elaborated above, accompanied by lack of financial means for maintenance and revitalizations, along with the large technical and commercial losses and the low collection rate, have brought KEK JSC to a very difficult financial situation. Therefore, KEK JSC ought to continue being supported by the Government, both through institutional actions in its effort to improve its financial performance and financial support to cover critical capital investments and a part of needs for electricity imports. These are prerequisites not only for the stabilization

of the functioning of the Kosovo electricity system, but also for the KEK JSC's further unbundling into new separate stable business entities.

3.1.3 Electricity transmission

The transmission system is managed by the Kosovo Transmission System and Market Operator (KOSTT JSC). Kosovo is a Contracting Party to the regional Energy Community and is linked to the regional system via interconnections with Serbia, Macedonia, Montenegro, and Albania. Kosovo is also at the center of the north-south transmission interface of the South East European market, and important for power flows to and from Serbia, Macedonia and Greece. Outage of any segment of this transmission path would have a negative impact on power flows in the southern region of SEE. KOSTT JSC suffers of underinvestment, due to lack of funds, in the past; thus it has had limited transmission capacities which have been unable to allow for meeting the peak demand during winter periods in Kosovo.

The overall length of transmission lines (400 kV, 220 kV and 110 kV) is 1,187 km. Most of the transmission lines were brought back to operation after repairs conducted after the war, although some power substations remain in poor technical condition. Kosovo's transmission grid of 400 kV and 220 kV lines is an integral part of the region's interconnection system. It is interconnected with all neighboring systems at the 400 kV level, except of the interconnection with Albania which is only at 220 kV level. Activities on initiating works for the construction of a new 400 kV interconnection with Albania have been undertaken and the construction of this line will start during 2010/2011. In medium to longer term, this line will be able to facilitate electricity exchange and will enable the optimization of two complementary systems, Kosovo's thermopower based system and Albania's hydropower based one. The 400 kV line will also substantially enhance electricity exchanges in the region. Figure 3 shows Kosovo's electricity transmission system interconnection with the neighboring systems.

Figure 3: Interconnection of Kosovo's electricity transmission system with neighboring systems



3.1.4 Electricity distribution

Because of insufficient development, situation of the power distribution system still remains difficult. This can be observed from the difficulties this network faces in meeting present demand for electricity. In general, both lines and substations are overloaded during winter, leading to high technical losses that amounted to 17.93% in 2006, 17.19% in 2007, and 17.1% in 2008.

It has to be noted that several projects are being developed both for the transmission and distribution grids. They will contribute to diminishing the level of technical losses, which remains a strategic objective for the Government.

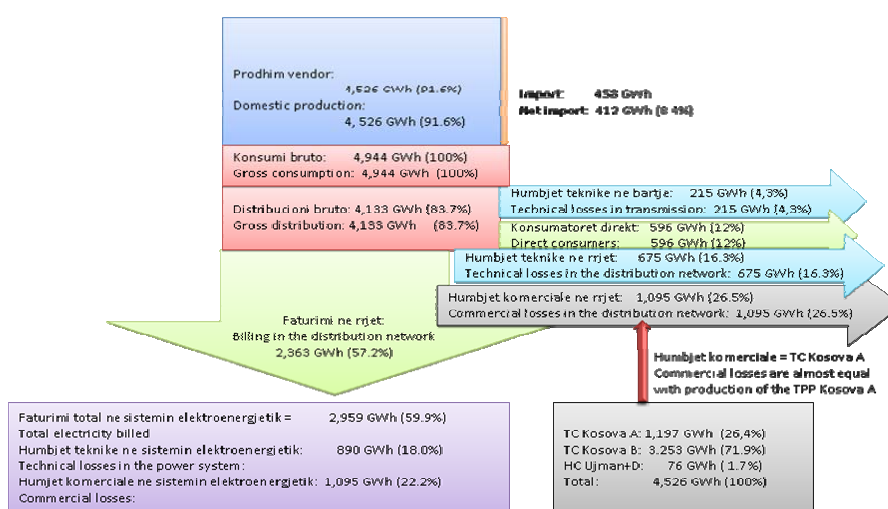
3.2 Electricity supply, billing and collection

Commercial losses remain high with a slow decrease trend over the last years; they were 29.18% in 2006, 30.31% in 2007, and around 25.8% in 2008.

In 2007, of the gross consumption of 4,582 GWh energy and of that, 2,425 GWh (53%) was billed, whereas from the billed electricity 1,843 GWh (76%) was collected. In 2007, commercial losses were 1,333 GWh, which is equivalent to the entire production of the TPP Kosova A, the total production from the hydropower plants, plus a part of the production of the TPP Kosovo B. At 2007 prices, this represents an annual loss of revenues of €99 million to KEK JSC, an amount this which would have allowed KEK JSC to cover all its operating expenditures and electricity imports, as well as a part of the capital investments made over this period.

Should theft and nonpayment of electricity be eliminated, demand for electricity could go down by about 15 percent and money would be available for maintenance, investments and power imports, if the latter would be still required. Figure 4 shows graphically the electricity balance for 2008.

Figure 4: Flow chart of electricity balance for 2008



3.3 District heating

District heating systems exist only in Prishtina, Gjakova and Mitrovica. These systems meet only 3% of heating demand. Existing heating technologies are based on residual fuel oil and diesel. This sector also is challenged by old technology, negative environmental impacts and a low level of billing and collection of the energy supplied. Need for developing the heating market was included in the results of the Heating Market Study

(ELC, World Bank Study, 2007). Development of such market will be incentivized by the Government. The Law on Public Enterprises has placed these enterprises under municipal administration.

Also the district heating sector, especially the existing system in Prishtina (named Termokos), faces financial difficulties and, to date, it has not proven to be self-sustainable without support from Kosovo Budget. Because of a weak management of the company, commercial losses are high, while the existing tariffs, although not very low, do not completely cover the costs of supply.

3.4 Natural gas and oil derivatives

There is an underground gas pipeline which in the past supplied the Skopje Iron Factory, Feronikel, Trepça, Llamkos and Termokos with gas from lignite gasification facility of the then Kosovo's Electro-Economy enterprise. According to the ESTAP I study, the existing line cannot be repaired within reasonable costs, therefore the construction of a new pipeline is recommended. A positive fact in this respect is that the Government possesses the land property rights for the Hani i Elezit – Mitrovica trench line, which should be considered in analysis of possible use of this asset.

As to the oil derivatives, a relatively satisfactory market supply by the private sector already exists. However, more needs to be done for ensuring the compulsory reserves for emergency situations. Enhanced safety of oil and derivatives transportation, storage and distribution is another challenge.

3.5 Energy efficiency and renewable energy sources

The Law on Energy, 2004/8, Article 10, provides the framework for the implementation of energy efficiency and renewable energy in Kosovo. In particular, paragraph (a) of Article 10 concerns preparation of an implementation program to promote the efficient use of energy and renewable energy resources. Energy efficiency and demand side management measures are critical for reducing high rate of annual energy demand growth, which is due mainly to use of electricity for heating purpose.

In early 2007 MEM launched the Program for Energy Efficiency and Renewable Energy Resources 2007-2009. The objective of the Program is to provide comprehensive series of actions to be carried out in Kosovo, resulting in improved energy efficiency in all sectors. However, implementation of the Program is lagging behind due to financial constraints and inadequate law enforcement level.

The Task Force on Energy Efficiency, established in the framework of the EnCT in October 2007, has assessed the current status of energy efficiency (EE) and has provided guidance to EnCT Contracting Parties on development plans for EE promotion. In late November 2007, MEM prepared a comprehensive report on the status of energy efficiency in Kosovo. MEM updated this report in May 2008⁴.

⁴ With assistance from the EAR, MEM developed the report 'Kosova Energy Community Stocktaking on Energy Efficiency'. This report shows the status of the development of the legal and regulatory framework, institutional setup, and projects and programs under implementation and planned.

Regarding development of renewable energy, a pre-feasibility study of small scale sites for hydropower development was completed by MEM in 2006. MEM is also planning to assess the entire potential for small hydropower plants (SHPPs) development in all river flows not assessed yet. The GoK policy is to develop small HPPs with private investment by concessioning out the right to use water for power generation⁵. ERO has developed the Authorization Procedure for construction of new power generation capacities including small hydropower. MEM initiated the process and ERO has approved the feed-in tariffs for SHPPs and wind farms. Further, with funding from Kosovo Budget, during 2008 MEM has implemented several pilot solar water heating projects in public buildings.

Under the LPTAP, the World Bank (WB) funded the updating of the existing Feasibility Study for HPP Zhur. The preliminary environmental and social assessments for this HPP were also developed in line with the WB policies. The results of these studies show that HPP Zhur project is implementable.

Also it is planned to prepare Pre-feasibility Study for conversion of HPP Ujman into a reversible hydropower plant. The World Bank also initiated support to the government on establishing regulative framework for development of renewable energy sources, including preparation of proposals for supporting mechanisms for renewable energy sources.

In the framework of the EnCT, Kosovo has developed both annual and 10-year indicative targets for renewables. It has also developed a detailed plan for implementation of the (i) Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market, and (ii) Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport.

MEM has developed and is implementing a number of projects as part of the three-year Kosovo Program for Energy Efficiency (EE) and Renewable Energy Resources (RER) 2006-2008.

MEM has made a lot of efforts in this regard, and in the absence of an Energy Efficiency law, it has promoted a number of secondary legislative acts which regulate certain areas of EE and RER. The following secondary legislation has been adopted: (i) Administrative Instruction on Labeling of Household Appliances, (ii) Administrative Instruction on Energy Auditing, (iii) Administrative Instruction on Use of Energy by Final Consumers, (iv) Administrative Instruction on Annual and Decennial Indicative Targets for RER, and (v) Government Decision on Incentives for RER Development. Drafted (but not yet adopted) are also the Administrative Instructions on (i) Biofuels, and (ii) Municipal Energy Offices.

During 2006, a pre-feasibility study on hydro potentials was prepared, and in 2008 an evaluation of solar energy potentials as well as wind, biomass and geothermal water potentials was carried out. Also, the following projects have been implemented: Awareness

⁵ The Decision “On promoting incentive measures for generation of electricity from renewable energy sources and co-generation in Kosova for the period 2007-2013” provides for open, transparent and competitive tendering process for developing small HPPs

Raising Campaign on Energy Efficiency in the country's primary and secondary schools (2006), Organization of a seminar on the role of EE and RER (2005), Organization of an Energy Auditing Course (2008), Study on EE Measures in some public facilities (2008), Drafting of the tendering procedures for the construction of small hydro power plants (2008), and Promotion of Solar Energy (installation of solar panels in the Kosovo University Clinical Centre and in the Students' Centre in Prishtina (2008).

As a contracting party of the Energy Community Treat (EnCT), Kosovo is a member of the EnCT Energy Efficiency Task Force. Kosovo is expected to finalize the National Action Plan on Energy Efficiency by end of 2009. This plan will outline the national targets for energy saving for the period 2009-2011.

3.6 Environmental Protection

Environmental protection falls under the mandate of the Ministry of Environment and Spatial Planning (MESP). However, this Strategy needs to address environmental aspects from the energy sector perspective. Currently, due to old technologies and inappropriate functioning of equipments and facilities, emissions of gases and dust as well as discharges of polluted water from the existing power generation plants are above the levels allowed by the respective EU Directives.

The Final Strategic Environmental and Social Assessment (SESA)⁶ Report was finalized in November 2008, after it underwent consultations with experts and the general public. This report identifies, at a strategic level, issues as well as environmental and social impacts related to the existing situation and the development of the energy and lignite sector in the wider region of the planned New Mine. SESA report also reviews and analyses the results of strategic decisions that Government of Kosovo and the future investor will need to make in the context of improving the situation and developing the Kosova e Re Project. The most important development options, from a social and environmental viewpoint, are analyzed. Those regard the location of New Power Plant, the scheme and dynamics of the mine development, the power plant unit size, the selection of the technology, and the pace of project development in relation with the demand for electricity production and the remaining life of existing power plants, especially of the TPP Kosova A.

Referring to the Baseline Environmental and Social Study, this report reaches the conclusion that the current environmental situation in the energy sector is rather complex due to a number of reasons:

- Environmental situation is deeply affected by past mining activities that have caused also significant landscape modifications;
- Air quality is poor due to emissions from existing power plants, which are not in compliance with current EU standards;
- Quality of air and ground water have been largely deteriorated by dumping of ash and other wastes as well as by the operations of drier, fertilizer and gasification plants in the past;

⁶ SESA was developed as part of LPTAP project, financed by WB and EC. Final results of SESA will inform simultaneously the development of the New Mine Area Development Plan also, which will outline the sector's investment framework and mitigation measures for preventing and diminishing possible negative impacts of the different development options.

- Quality of surface waters has been effected by untreated water discharges from the power plants, mining activities and urban sewerage waters;
- Noise emissions from mining activities are annoying to inhabitants living nearby the mine;
- Lack of environmental control or inefficiency and non-effectiveness of environmental control (of water and air); and
- Lack of formal procedures for water management in industrial locations.

The main recommendations of SESA Report and the analysis of possible development scenarios are as follows:

- TPP Kosova A is the preferred location for the construction of the TPP Kosova e Re, although the study, gives a slight financial priority to the alternative location close to TPP Kosova B. On the other hand, the location in Bivolak would be excluded from the alternatives, particularly because this would be a greenfield development; and
- Both available commercial lignite combustion technologies (PF or CFB)⁷ are acceptable and would be in full compliance with EU standards.

Furthermore, SESA report describes the existing legal and institutional framework related to environment protection and environmental management at national, regional and local levels and analyzes gaps in conformity with international standards and regulation. MESP is making efforts to to meet all obligations deriving from EnCT in the area of environment. Below listed are the obligations deriving from the EnCT.

EnCT Obligations on the Environment

Annex II of the EnCT sets out a timetable for the implementation of the different elements of the EU environmental acquis as follows.

1. On entry into force of the Treaty, each Contracting Party shall implement Council Directive 85/337/EC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment, as amended by Council Directives 97/11/EC of 3 March 1997 and Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003.
2. By 31 Dec 2011, each Contracting Party shall implement Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulfur content of certain liquid fuels and amending Directive 93/12/EEC.
3. By 31 Dec 2017, each Contracting Party shall implement Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants.
4. On entry into force of the Treaty, each Contracting Party shall implement Article 4(2) of Directive 79/409/EC of the Council of 2 April 1979 on the conservation of wild birds.

Source: Energy Community Treaty

Current environmental issues require clear addressing and implementation of programs and projects for mitigating environmental impacts, in order for them not to become an obstacle for further development of the energy sector.

Strategic Environmental and Social Assessment (SESA) report proposes a number of environment impact mitigation measures, including:

⁷ PF stands for 'Pulverised fuel' and CFB stands for 'Circulating Fluidized Bed'

- Decreasing water consumption through recycling industrial discharge waters with most advanced technologies;
- Preparation of management plans for Ibër Lepenc hydro system, in compliance with EU directives and policies specified in the EU Framework Directive on Waters;
- Preparation of plans for investment in water infrastructure;
- Preparation of a Feasibility Study for, creation of an accumulation reservoir for ensuring steady water supply for energy facilities;
- Preparation of a policy framework and guideline criteria for, allocation of water resources for different prioritized water consuming sectors;
- Installation of proper noise barriers to decrease effects caused by noise;
- Re-cultivation of old mining areas;
- Decrease of particulate emission from the mines, power plants and ash dumps;
- Revamping of TPP Kosovo A equipment to decrease dust emissions and industrial water discharge levels;
- Modernization of TPP Kosovo B equipment to decrease emission levels and bring them to levels allowed by EU standards;
- Construction of a treatment plant for industrial waters, wastewater and sewage discharged by industrial facilities;
- Establishment of an adequate emission monitoring system;
- Adoption of the resettlement policy; and
- Adoption of the spatial development plan.

Treatment of the Carbon dioxide (CO₂) emissions

Republic of Kosovo is committed to becoming a member UNFCCC and ratifying of Kyoto Protocol. It will support discussion process on post-Kyoto engagements which is initiated in Poland end of 2008 and to be finalized in Denmark during 2009. MEM supports the GEF/UNDP assistance to MESP in preparing the first national communication in this regard.

Kosovo's participation in these international agreements not only will contribute to the achievement of worldwide objectives on greenhouse gas emission control and reduction, but will also have a significant impact in improving the environmental situation and promote environment protection in Kosovo, keeping all harmful emissions, including those from the energy sector, within acceptable and allowed limits.

Kosovo will implement in due time its obligations regarding keeping emissions from energy facilities within allowed limits. Kosovo will require private operators of new generating facilities to respect, in compliance with market rules, all commitments that Kosovo will undertake in the framework of the above mentioned agreements.

3.7 Financial support to date

From end-1999 to 2008, KEK JDC has received about €1,052⁸ million in subsidies, of which €459 million was from the Kosovo Budget (KB) and €593 million from donors (of which €415 from European Agency for Reconstruction (EAR) of the European Commission). Allocation from the KB of about €70 million per annum during the last three years represents about 11 percent of the total KB expenditures. Because of this financial support, production of lignite and electricity has been increasing during these years. Nevertheless, because of increasing electricity consumption, poor performance in controlling consumption and collections, KEK JSC has had adverse impacts on the public finances and the business environment. KEK JSC remained a costly burden on the Kosovo Budget, while also absorbing a large share of donor support to Kosovo.

KEK JSC's limited capacity to import electricity and low quality of service offered impose high costs on Kosovo's economy, with unreliable supply of power often being cited as the largest single barrier to investment in Kosovo.

As presented in Table 5, overall expenditures for the energy sector, including mines, have significantly depleted Kosovo Budget.

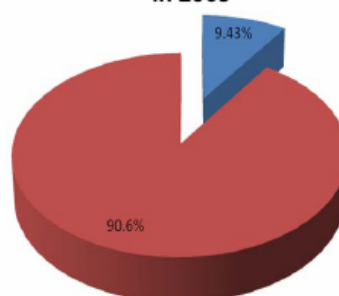
Table 5: Total expenditures in the energy sector [million €]

Description:	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
Total Donors	259.5	18.8	66.4	138.5	48.2	10.4	28.2	15.5	0	585.5
Subsidies	-	-	4.1	-	-	-	-	-	-	4.1
Technical Assistance	-	-	9.8	90.3	10.9	10.4	21.4	3	-	145.8
Capital Investments	259.5	18.8	52.5	48.2	37.3	-	6.8	12.5	-	435.6
Total KCB	11.6	45.9	108.1	56.3	41.4	67.2	47.1	65.6	163.5	606.7
KCB funds	11.6	45.9	108.1	56.3	41.4	57.2	47.1	65.6	84.1	517.3
Loan to KEK	-	-	-	-	-	10	-	-	79.4	89.4
Total Donors and KCB	271.1	64.7	174.5	194.8	89.6	77.6	75.3	81.1	163.5	1192.2

Source: MTEF 2009-2011

In 2008, budgetary support for the energy sector was planned to be €163.5 million. This, demonstrates Government's commitment to support improvement of electricity supply in the country by funding all necessary capital investments in the lignite mining sector as well as repairs and maintenance of the existing electricity generating capacities. This support will continue in 2009 also, with 9.4% of the total Budget allocated to the energy sector.

Energy - 9.4% of Planned Expenditure in 2009



Source: MTEF 2009-2011

⁸ EC/WB 'Prospectus' of Kosovo presented in the Donors' Conference, Brussels, July 11, 2008

4. Energy consumption and supply

4.1 Total energy consumption during the period 2004-2007

Energy supply in Kosovo during 2004-2007 period increased from 2011 ktoe in 2004 to 2201 ktoe in 2007, as presented in Figure 6. The average annual increase was 3.2%. Considering type and quantity, energy supply for this period has been as follows:

- Coal production has changed from 1228 ktoe in 2004 to 1298 ktoe in 2007, with an average annual increase of 1.79%.
- Import of oil products has increased from 455 ktoe in 2004 to 654 ktoe in 2007, with an average annual increase of 11.08%.
- Electricity production is dominated by TPP Kosova A and TPP Kosova B. Their electricity generation has increased from 341 ktoe in 2004 to 384 ktoe in 2007, with an average annual increase of 3.81%.
- Electricity production from Kosovo's Hydropower plants has experienced a decrease from 9.71 ktoe in 2004 to 5.40 ktoe in 2007, with an average annual decrease of 23.7%.
- To meet peak demand, a considerable amount of electricity has been imported. Imported electricity amounted to 55.96 ktoe in 2004, and 56.80 ktoe in 2007, with an average annual increase of 1.5%.
- Excess of electricity has been exported (excess energy during nights). Export has increased from 16.7 ktoe in 2004 to 31.7 ktoe in 2007, with an average annual increase of 18.7%.
- There is no reliable data regarding the scale of fuelwood cuts, but it is believed that the annual amount of fuelwood cut is around 216-250 ktoe.
- Contribution of solar energy, although not significant for Kosovo, has increased.

4.2 Energy consumption by economic sector during the period 2004-2007

Contribution of each primary energy source in the total consumption during the 2004-2007 periods is presented in Figure 5. Contribution of each economic sector in the total consumption of energy, for the same period, is presented in Figure 6. The main portion of this consumption is covered first by coal and then by oil and its sub-products.

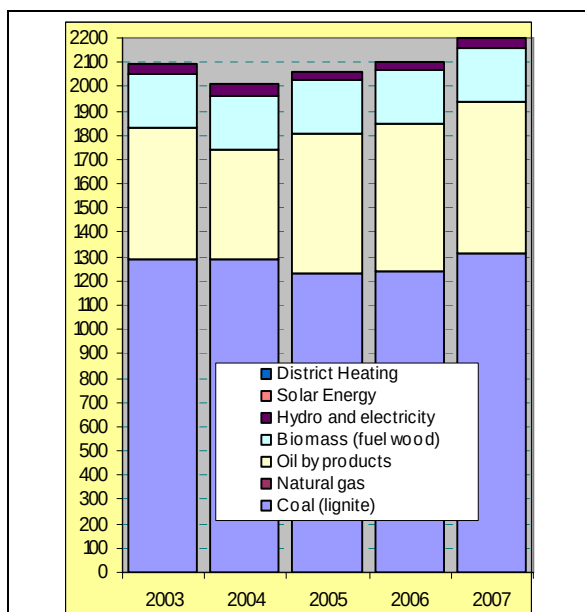


Figure 5: Contributions of each primary energy source in Kosovo (ktOE)

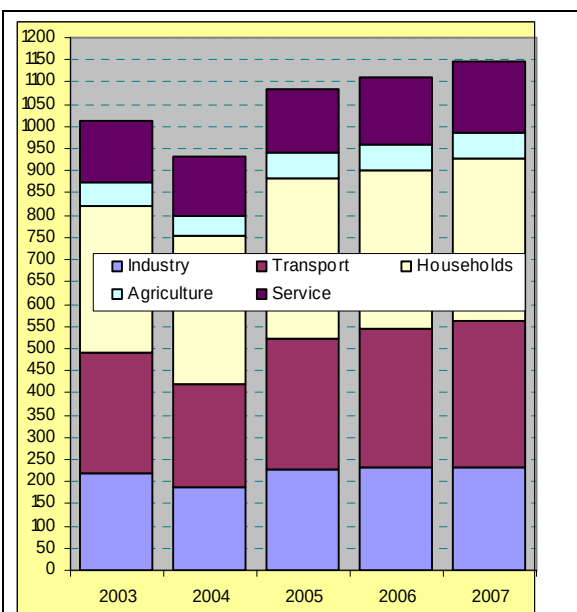


Figure 6: Contributions of each sector to total energy consumption (ktOE)

4.3 Reasons of fast growth of energy consumption

Main problems and challenges identified through analysis of historic development and trends of energy demand and its coverage for the future in Kosovo are:

- Economic development of the country has increasingly demanded more energy. This, accompanied by the technical conditions of the existing thermopower plants, has dictated the need for developing new power generation capacities.
- Increase of electricity consumption for a long period of time in the past may be attributed to lack of an effective consumption control, which has been accompanied by an increasing level of non-technical losses and electricity theft mainly in the households sector and to a certain extent in the services sector, and Serbian majority enclaves that don't pay for electricity used, has resulted in continued load shedding in electricity supply.
- Lack of alternative energy resources or their high prices for substituting electricity as well as low prices of electricity, have led to a massive utilization of electricity for space heating and other purposes without promoting any saving of electricity.
- Increase in demand for imported oil and gasoline in the transport sector deteriorates Kosovo's foreign trade balance.

4.4 Electricity production during the period 2000-2007

Based on several important studies conducted after the year 2000, and balances prepared by MEM during the recent years, electricity generation from each power plant has been as presented in Figure 7.

Percentile contribution of each power plant in covering the total electricity consumption, for the same period, is presented in Figure 8.

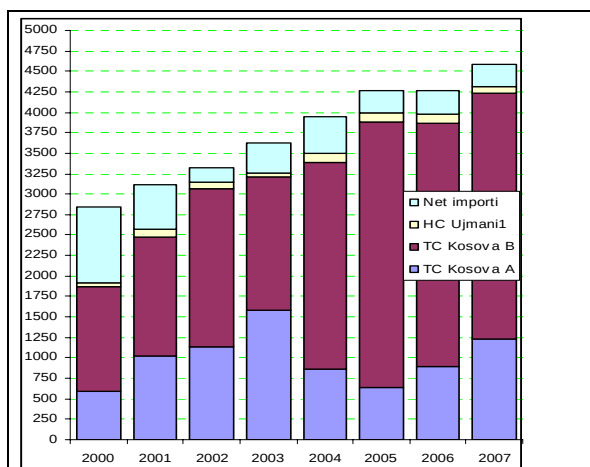


Figure 7: Contribution of each power plant in covering the electricity consumption (GWh)

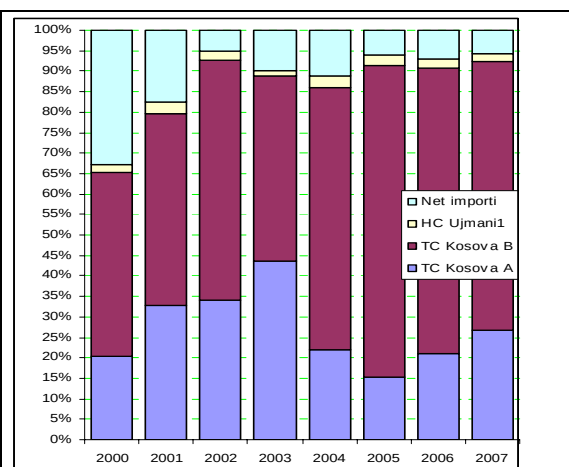


Figure 8: Contribution of each power plant in covering the electricity consumption (%)

* Note:

1. With production of HPPs connected at the power distribution network
2. Technical losses in transmission and distribution have been estimated at around 17-18%
3. Supply operation according to the 5:1 scheme

4.5 Electricity supply during the period 2000-2007

During the 2000-2007 period, the average relative annual growth of electricity consumption in Kosovo has been at around 7%. Electricity consumption has increased from 2,864 GWh in 2000 to 4,582 GWh in 2007, resulting with a total increase of 161%. This average increase of 7% (see Figures 9 and 10) is visibly higher than demand for electricity predicted in World Bank's ESTAP I in year 2002, where the relative annual electricity consumption was anticipated at 5%. (Medium Demand Scenario).

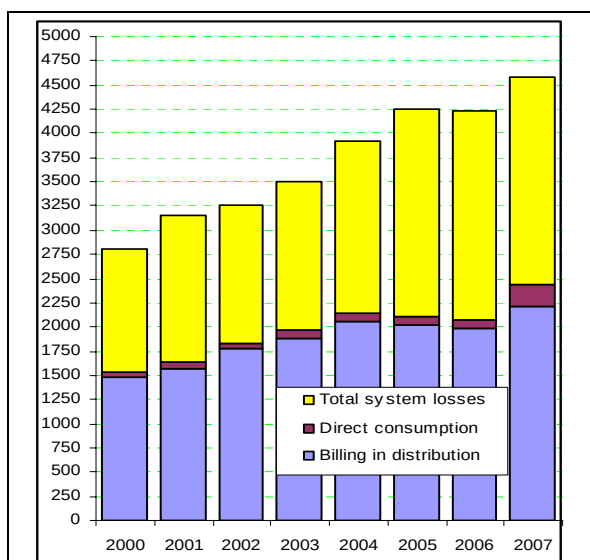


Figure 9: Billing, direct consumption and system losses (GWh)

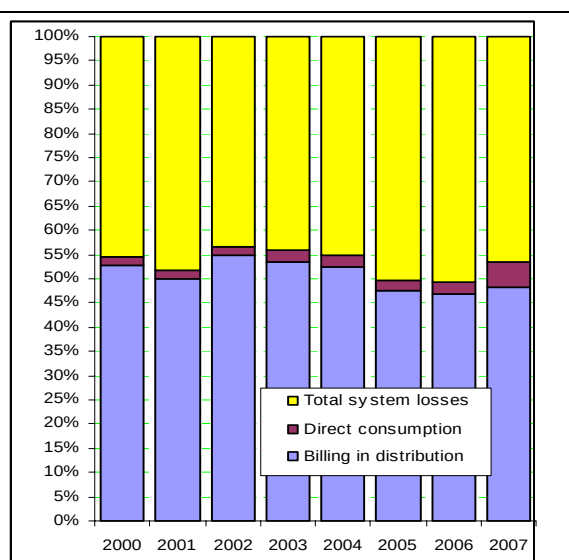


Figure 10: Billing, direct consumption and system losses (%)

It could be said that during the period 2000-2007 and 2008:

- Country's electricity production has been lower than the demand level;
- During winter seasons there have been occasions of insufficient coal supply to operate all units of the two power plants;
- Revitalization of TPP Kosovo A units was not conducted as planned according to the 2005 study, consequently making their revitalization in the future unfeasible ;
- There have been limitations caused by insufficient power transmission and distribution capacities during peak loads (especially during winters);
- Proper demand side management has not been implemented;
- Billing and collection rate for electricity consumed has been at low rates, so commercial losses have been very high;
- Electricity supply has been balanced with load shedding according to the known 5:1 scheme; and
- Continued electricity import during recent years covers 10-15 percent of the consumption.

High increase of electricity consumption and peak loads in Kosovo's power system during the 2000-2007 period has been caused mainly by high commercial losses ranging between 25-31% of the gross electricity consumption. During 2005-2007, total electricity losses (technical and non-technical) in Kosovo's power system (transmission and distribution) equaled the half of gross consumption. During this period, collection rate was 75% of the consumed electricity in the controlled area of consumption.

About 90% of the current gross electricity consumption is realized in the distribution network at medium 35(20)/10 kV and low 0.4 kV voltages. The relatively high increase of electricity consumption at the low voltage level during 2000-2007 was caused mainly by:

- Inability of the electricity supplier to enter into contracts with all of its consumers;
- Inability to appropriately manage household and commercial consumption;
- Inability to collect in enclaves inhabited by the Serbian minority;
- Inability to achieve full consolidation of the billing and collection process; and
- Utilization of electricity for heating purposes.

4.6 Electricity import

Since 2000 our country has turned from a net exporter to a net importer of electricity. During the recent years, our country has imported electricity from a maximum of 33% of the total consumption in 2001 to 12.6% in 2008. Considering the ongoing increase of the electricity demand, it is obvious that the role of electricity imports will be essential for

ensuring stable electricity supply in the foreseeable future. Electricity imports are expected to impact the cost of supply, and will subsequently drive the increase of electricity tariffs for all consumer categories.

It has to be mentioned that current power import/exchange capacity of the Kosovo power transmission system is not sufficient to meet increasing peak loads during winter time. Because that electricity demand in usual winter days reaches 17-18 million kWh and KEK JSC is often obliged to shed loads, thus causing both concerns and damages to the country's economy and citizens' quality of life.

Another keen problem related to electricity imports that KEK JSC is facing, especially during the last two years, is the increasing electricity import price. This causes liquidity difficulties for KEK JSC but also requires further increase of tariffs for regulated tariff customers.

It should be stressed that import of electricity recently became more difficult due to increase of energy deficit in Balkans, where most of the countries are net importers of electricity. It is anticipated that the difficulties of electricity supply in our region will persist in the foreseeable future.

Electricity Generation Master Plan (preparation of which was financed by the World Bank) states that Balkans region will need further 20,000MW of new power generation capacities installed, and 5,000MW from the existing power generation capacities rehabilitated. In the meantime, to transmit larger electricity quantities from generation centers to end-consumers, construction of interconnection and transmission lines in the region is necessary, requiring an estimated amount of 2.5-3 billion USD of investment. It is worth noting that in this Master Plan thermopower Plant Kosova e Re is identified as one of the projects of biggest priority, positioning Kosovo strategically in the region with regard to future electricity generation.

5. 'Kosova e Re' Project

To reach the goal of developing a sustainable energy sector, the Government of Kosovo plans to engage foreign expertise and capital. The World Bank, through the Lignite Power Technical Assistance Project (LPTAP)⁹, is supporting Kosovo in its effort to attract investment in developing the 'Kosova e Re' project. This undertaking is supported also by the EC through financing of the Options Study and other technical studies that support development of the LPTAP. The 'Kosova e Re' will need to be developed in two phases. The first phase (1,000MW) would enable replacement of TPP Kosova A (its decommissioning), would supply the local demand for electricity, and would facilitate the rehabilitation of TPP Kosova B enhancing its reliability and ensuring that the EU environmental standards are met. Part of the TPP Kosova e Re production could be

⁹ Main LPTAP objectives are: (a) to support the Government in strengthening policies, and the legal and regulatory framework that enable new investment in the energy sector; and (b) support the Government in attracting qualified private investors for construction of the new lignite-fired power plant, based on high principles of environmental and social sustainability.

exported. The second phase (1,000MW) would supply the growing local demand and replace production of TPP Kosova B after its technical life ends.

With support from the Project Advisors financed through LPTAP, the Government of Kosovo is conducting a transparent and competitive process for selecting a strategic investor for developing the Kosova e Re plant. The prequalification process of potential investors is already concluded. The financial closure of the Project is expected during 2010.

6. Regional and European Integrations

Kosovo is strongly engaged in the European Integration processes. For the energy sector, the integration process is focused in two frontlines: (i) participation in the Energy Community, and (ii) the European Integration process in the framework of Stabilization and Association Tracking Mechanism.

6.1 Energy Community Treaty

Kosovo is a signatory party to the Treaty for the establishment of the Energy Community (EnC) of South-East Europe that entered into force in 1 July 2006. Within this context, the Government of Kosovo remains committed to developing the energy sector in compliance with EnCT requirements. EnCT requires implementation of *acquis communautaire* of the EU from all Contracting Parties following a timetable provided for implementation of the required reforms.

In the context of establishing conditions for the energy market in the region, Transmission System Operators (TSO) of South Eastern Europe (SEE), under the coordination of the European Transmission System Operators (ETSO) in July 2004 commenced implementation of the inter- TSO compensation mechanism, aiming to compensate utilization of national power transmission systems through cross-border electricity trade in the SEE. In addition, the process for implementation of coordinated activities for interconnection capacities is ongoing.

The electricity system of Kosovo is directly interconnection with the Albanian, Montenegrin, Serbian and Macedonian systems. Apart from Serbia, all these systems are net-importers of electricity. This fact presents opportunities for new investments in the new lignite-fired power generation plants in Kosovo.

It should be emphasized that the transmission system in Kosovo presents an important infrastructure for the transmission of electricity of other power systems of the region as well as for traders of electricity. Annual respective amount of such transmitted electricity is estimated at 3,000 GWh. This factor should be considered during planning and development of new power transmission capacities in Kosovo.

Implementation of Energy Community Treaty obligations will continue to remain a top priority for the energy sector and its stakeholders.

Treaty establishing the Energy Community

Following the Athens process which aimed to establish integrated regional energy market in South East Europe, in 25 October 2005 the European Community and Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, the Former Yugoslav Republic of Macedonia, Romania, Serbia and UNMIK on behalf of Kosovo signed the Treaty establishing the Energy Community. Austria, Cyprus, Czech Republic, Germany, Greece, Hungary, Italy, Slovakia, Slovenia, United Kingdom, were accorded the status of a Participant at the first Ministerial Council meeting in November 2006.

The Treaty requires the Contracting Parties to implement important parts of the *acquis communautaire*, provides for the creation of a single energy market and the mechanism for the operation of network markets. It also establishes the institutions of the Energy Community, as well as the decision making process. Following the ratification and notification process, the Treaty entered into force on 1 July 2006.

The institutional setting and the decision making process within the Energy Community involves the following organs: (i) Ministerial Council, (ii) Permanent High Level Group, (iii) for a, and (iv) Secretariat. According to Article 2, the task of the Energy Community is to organise the relations between the Contracting Parties and to create a legal and economic framework in relation to Network Energy in order to:

- (i) create a stable regulatory and market framework capable of attracting investment in gas networks, power generation, and transmission and distribution networks,
- (ii) create a single regulatory space for trade in Network Energy,
- (iii) enhance the security of supply of the single regulatory space,
- (iv) improve the environmental situation in relation to Network Energy and related energy efficiency, foster the use of renewable energy, and set out the conditions for energy trade in the single regulatory space, and
- (v) develop Network Energy market competition on a broader geographic scale and exploit economies of scale.

6.2 Stabilization and Association Tracking Mechanism

Development of Energy Sector in compliance with EU *Acquis* is one of the most important components of the European Partnership Action Plan (EPAP). Ministry of Energy and Mining (MEM), within the framework of the Energy Working Group (EWG) established in early 2007, is coordinating all activities related to EPAP implementation in the energy sector.

European Integration Process for Kosovo

The Stabilization and Association Process Tracking Mechanism (STM) is designed to provide Kosovo with the expertise and policy guidance of the European Commission, with the view of assisting Kosovo authorities to benefit fully from the various instruments of the Stabilization and Association process.

Regular meetings are organized to assess progress made by Kosovo in political, economic and institutional reforms, particularly in compliance with the conditionality of the EU's Stabilization and Association Process. The European Commission regularly monitors the progress of the Stabilization and Association Process for Kosovo through the STM.

The European Partnership Action Plan (EPAP) represents the framework for monitoring the progress Kosovo is making year after year towards European Community. Kosovo institutions are strongly committed to the implementation of the EPAP which, on one hand, provides for all major reform steps and, on the other hand, guides the European Community assistance to Kosovo.

Ministry of Energy and Mining (MEM) has coordinated all the activities on behalf of Kosovo as a Contracting Party of the Energy Community Treaty (EnCT). The Energy

Working Group (EWG), established in Kosovo after the EnCT entered into force, has been an inter-institutional body for facilitating the activities under the EnCT. Members of the EWG included MEM, Energy Regulatory Office, KOSTT JSC, KEK JSC, and Ministry of Environment and Spatial Planning, Ministry of Labor and Social Welfare.

Since the initiation of these processes, MEM and other relevant stakeholders of the energy sector have done a commendable job in responding to obligations deriving from the Energy Community Treaty and European Partnership Action Plan.

6.3 Bilateral cooperation

Cooperation with Albania

Regarding development and advancement of regional cooperation, Kosovo has signed an agreement with Albania for cooperation in the energy sector. It is important to note that Albania's electricity generation is based mainly in hydropower (almost 100%), whereas Kosovo's is based almost entirely in thermopower. These two electricity generation systems are mutually complimentary, thus providing for remarkable cooperation opportunities between them, optimization of operation, optimal energy exchange, enhanced security of supply, as well as potentials for optimization of investments. In the context of regional and European integration, this fact is reflected in both systems and beyond, thus creating attractive prerequisites for investors interested in electricity generation in Kosovo and other countries of the region.

Cooperation with Macedonia and Montenegro

Government of the Republic of Kosovo is working for advancing cooperation in the energy sector with other countries of the region such as Macedonia and Montenegro. In this contexts, it was agreed to sign a bilateral cooperation agreement for the energy sector with Macedonia during 2009. The same is intended to be achieved the with Montenegro. The draft agreement is prepared.

Cooperation with the Republic of Bulgaria

Bilateral agreement between MEM and the Ministry of Economy and Energy of the Republic of Bulgaria already has been prepared and negotiated. This agreement is expected to be signed by end of 2009.

Relations with Serbia and damages during 1990-1999

During the 1990-1999 period, energy and power facilities as well as energy resources were exploited by the Serbian regime without Kosovo's consent. A consequence of a decade long unauthorised exploitation, coal mines and thermopower plants was significant degraded and destroyed and some equipment also was transferred to Serbia. Direct and indirect damage to Kosovo's energy sector caused by the Serbian regime during this period is very large.

State of the electricity system in minority enclaves

In the post-war period 1999-2008, KEK JSC has favored Serb majority enclaves in electricity supply and similarly, the Government of Kosovo has favored these enclaves with heating system oil. During this period KEK JSC has had no access to electricity meters nor control over collection of electricity for the electricity consumed in all Serbian minority enclaves. Eventual prolongation of this situation would further deteriorate the situation in the energy sector and continue to have direct implications to the Kosovo Budget.

During the 1999-2007 period, consumers in enclaves, inhabited mainly by Serbs, have not entered into contracts with the electricity supplier and have not paid for the electricity consumed and supplied by the KEK JSC. During 2009, a number of electricity consumers in enclaves have signed contracts with KEK JSC. The overall amount of unpaid electricity in enclaves has reached €145 million.

Relations with Serbia and relations within the framework of Energy Community Treaty

In 2001, two agreements were signed between the United Nations Mission in Kosovo (UNMIK) and Ministry of Energy of Serbia/EPS:

1. Temporary Technical Agreement (TTA), 2001/03/26, and
2. Temporary Energy Exchange Agreement (TEEA), 2001/04/08

These two technical agreements are supposed to be valid for as long as UNMIK mission is in Kosovo.

Among others, these agreements cover:

1. Compensation for electricity transit through the Kosovo transmission system, and
2. Secondary regulation (security reserve +/-20 MW) for maintaining of power system balance.

Serbia has been violating both agreements since July 2004. Since then, Serbia does not pay compensation for electricity transit, and without consent of KOSTT JSC it allocates Kosovo's electricity transmission system capacities, and collects revenues based on cross-border electricity trade with the countries of the region, thus damaging Kosovo. During the period July 2004 through June 2008 the Transmission System Operator (TSO) of Serbia has collected and is holding about €15 million in revenues from electricity transit through Kosovo. In the meantime, KOSTT JSC has stopped paying for the reserve (secondary regulation), while continues to compensate for deviation.

Although a Contracting Party to the Energy Community Treaty, Serbia violates these two agreements, seized rights belonging to Kosovo, collects compensation from the CBT mechanism for the area belonging to Kosovo, and it is not transparent in transmission capacity allocations for regional imports, thus unreasonably increasing electricity import prices in the region and impeding development of a transparent and competitive regional electricity market. On this matter, Kosovo has filed its complaint under the EnCT.

Politically motivated, the Serbian TSO, and Serbia itself as a Contracting Party to the EnCT, continuously hinder KOSTT JSC participation in regional and European mechanisms. Serbian TSO is also creating difficulties to KOSTT JSC's daily operations of the Kosovo transmission system.

Relations with the regional power system and the position of Kosovo

Government of Kosovo will institutionally support establishment of suitable conditions for KEK JSC to have access to the entire electricity transmission and distribution networks, meet its obligations towards its consumers and realize collection of electricity bills.

Government of Kosovo respects international agreements and obligations deriving from the EnCT and will continue to cooperate with all contracting parties of the EnCT, therefore with Serbia as well.

Eventual failure to respect EnCT obligations will have negative consequences for the operationalization of the regional electricity market and will become an obstacle to development of the energy sector in the region. Kosovo is committed to regional cooperation with all stakeholders, based on the principles of mutual interest.

6.4 Donors' Conference for Kosovo

The first Donor's Conference for Kosovo was organized in Brussels on 11 July 2008. The energy sector, due to its importance for the future sustainable economic and social development of Kosovo, was given special attention in this Conference. The donor community not only highly regarded the importance of energy sector, but also highlighted the need for continuation of the sector restructuring and KEK JSC financial recovery as prerequisites for important investments in this sector.

It remains a responsibility of energy sector institutions to continue with implementation of reforms and to prepare, in consultation with donors, program and project proposals that may eventually be financed through funds that were pledged during the Donors' Conference in Brussels.

7. Summary of the SWOT analysis for the energy sector

The following SWOT analysis summarizes energy sector's competitive advantages taking into consideration identified Strengths, Weaknesses, Opportunities and Threats. Further, the strategic objectives identified in this Strategy will focus on overcoming sector's weaknesses, predicting and avoiding possible threats. Their realization will facilitate exploiting existing advantages and opportunities for an expeditious development of our energy sector. Table 6 presents a summary of Strengths, Weaknesses, Opportunities and Threats in the energy sector.

Table 6: Summary of SWOT analysis for the energy sector

Strengths:	Weaknesses:
• Competitive advantages for exploitations of natural resources • Sufficient lignite reserves with wide opportunities for electricity generation with competitive prices • Kosovo's position in the centre of Balkan is favorable to transiting of energy • Industry experience in production and exploitation of the lignite in Kosovo • Sufficient human resources • Contemporary legislative framework in accordance with international standards • Republic of Kosovo is a party to the Treaty establishing the SEE Energy Community • Adequate institutional mechanisms for the functioning of the energy sector, especially independent energy and mining regulatory authorities and independent electricity system operator	• Degradation and de-investment in the energy systems during 1990-1999, which has resulted in an old energy technology and large technical losses; • Ineffective management, high commercial losses and low level of debt collection have resulted in an unfavorable economic and financial situation for energy enterprises • Inability to finance investments and mobilize loans • Delays in investing in modernization of generation, transmission and distribution systems, resulting in electricity cuts and load shading • Delays in development of new lignite mines • Low participation of renewables sources in power generation, • Dependence on imports of certain energy resources, • Low efficiency in power generation and end use of electricity • Pollution by lignite mines and power generation plants and lack of sufficient actions for remedying the situation • Lack of a permanent pollution monitoring system
Opportunities:	Threats:
• Growth in demand for electricity in Kosovo and the region with opportunities for fast sector development • Restructuring and reform of the energy sector and particularly of KEK JSC • Liberalization and privatization • Potentials for attracting strategic investors • Utilization of renewable of energy resources • Increase of human resources capacities • Kosovo's access to international financial mechanisms for development of RER and increase of EE.	• Unexpected increase in prices of oil and petroleum imported products and unexpected interruption of supply with imported oil products • Social discontent with energy sector reforms • Failures in implementation of effective mechanism for enforcing collection of energy bills • Increase of electricity import prices • Failure of establishing an open and competitive electricity market in the region

Part Two

8. Energy demand forecast for the period 2009-2018

MEM within its own responsibilities, in close cooperation with KEK JSC, KOSTT JSC, ERO, district heating companies, ICMM, MTI and the Kosovo Statistical Office, prepares annual energy balances and annual and long-term energy demand forecasts for Kosovo. These energy balances and forecasts are being prepared in compliance with Eurostat standards¹⁰.

Two most important indicators used in energy forecasts of any country are energy intensity and energy consumption per capita, which are analyzed in the following sections.

8.1 Energy intensity and energy consumption per capita

Currently, energy intensity¹¹ in Kosovo is at a relatively high level. This means that the macroeconomic production, generally reported by the Gross Domestic Product (GDP), has been low compared to total energy consumption. Reasons for this are related to low industrial development of our country, compared to other Central and Eastern European countries.

Kosovo is presented with medium level of energy consumption per capita, almost twice as high as Albania and almost equal to Croatia. Energy intensity in Kosovo is the highest in the region, after Bulgaria.

The most important issues for future economic development of Kosovo and its energy sector are the increase of energy consumption per capita and maintaining, at the same time, a low relative level of energy intensity, which would induce an efficient and competitive economy in an increasingly open international market.

8.2 Energy demand forecast

Two possible scenarios of the Gross Domestic Production (GDP) growth rate for the 2009-2018 periods are supposed to be more realistic for planning the country economic development and forecasting the energy demand, as shown in Table 7.

Table 7: Two scenarios of GDP growth rate in [%] for the period 2009-2018

Scenario	2009-2010	2011-2014	2015-2018
Medium	3.20	3.10	3.00
High	6.20	5.29	5.00

The increase of energy supply should respond to economic and social development growth. Figures 11 and 12 show the projections of GDP for each sector until 2018, for the GDP high growth scenario¹².

¹⁰ Note that the data for emissions from utilization of energy resources are elaborated with energy software such as LEAP (Long Energy Alternative Planning) and IPCC (Intergovernmental Panel for Climate Change).

¹¹ An important synthetic indicator that shows the energy sector development level, in particular that of energy efficiency, is the energy intensity, which is equal with the ration of primary energy resources consumed in a given year and Gross Domestic Production (GDP) of that given year.

¹² Based on the ESTAP study and consultancies from different domestic and international institutions.

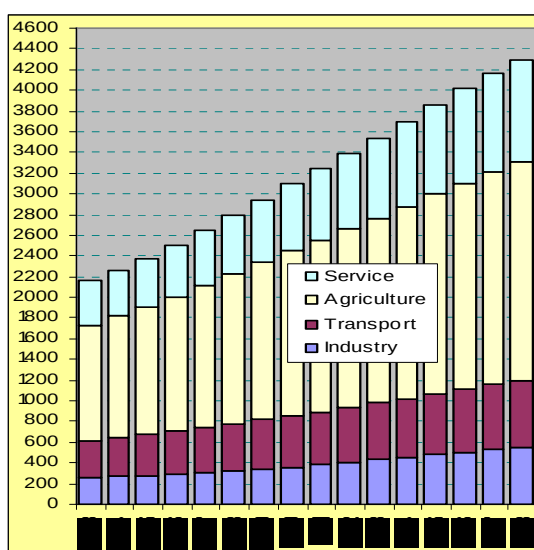


Figure 11: Projection of the contribution of each economic sector in the GDP for the high GDP growth scenario (million Euros)

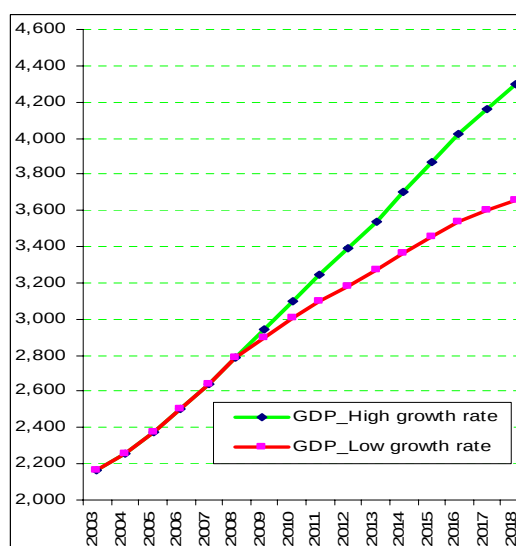


Figure 12: Projection of GDP growth according to both growth scenarios (million Euros)

Scenarios used for developing the energy demand forecasts¹³ describe possibilities of energy sector development in Kosovo in the medium term, taking into consideration also technological and economic development projections of the neighboring countries.

Assessment of the trends of macroeconomic indicators shows that during the 2003-2007 period, the country's economy is strengthened as a result of developments in the construction, services and agriculture sectors as well as rehabilitation of the industry and considerable amount of remittances.

8.2.1 Energy demand forecast for the residential sector

Energy consumption and forecasted demand for the residential sector has been carefully analyzed and discussed because of its highest contribution in the total energy consumed as well as because of the very high electricity consumption in this economic sub-sector.

Table 8 provides main parameters used as basis for forecasting the energy demand in the residential sector¹⁴.

¹³ Scenarios developed do not pretend to present accurate forecasts, because many data and clear development strategies for the development of different economic and social sectors are required for them to be accurate.

¹⁴ Number of population is an important guiding factor used for the calculation of energy demand in the household sector. Number of families in every climacteric zone and degree-days of heating for urban and rural households are used as main factor in the calculation of energy demand for this economic sub-sector.

Table 8: Main parameters for developing the energy demand forecast for the residential sector			
Year	No. of households	No. of people per household	Population
2003	360000	5.429	1954000
2004	372407	5.310	1977448
2005	385521	5.191	2001177
2006	399308	5.072	2025192
2007	413816	4.953	2049494
2008	429099	4.834	2074088
2009	445217	4.715	2098977
2010	462235	4.595	2124165
2011	478329	4.476	2141158
2012	495332	4.357	2158287
2013	513324	4.238	2175553
2014	532390	4.119	2192958
2015	552625	4.000	2210501
2016	571967	3.8852	2228184
2017	595696	3.770	2246011
2018	619318	3.656	2263979

Development of forecasts is based on the “top-down” approach methodology. Projected energy demand for the household sector, based on this methodology and the parameters abovementioned, is shown in Figures 13 and 14.

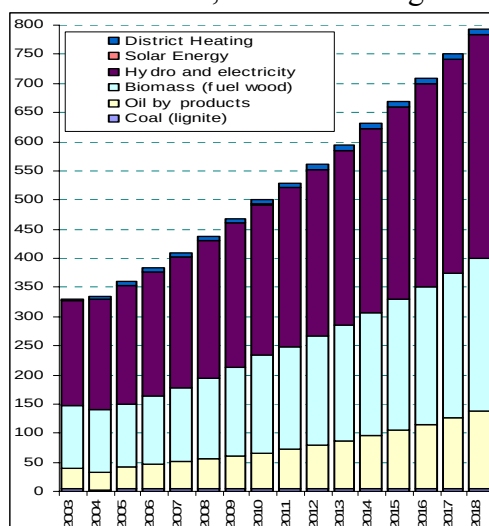


Figure 13: Energy demand forecast for the housing sector for the high growth scenario (ktoe)

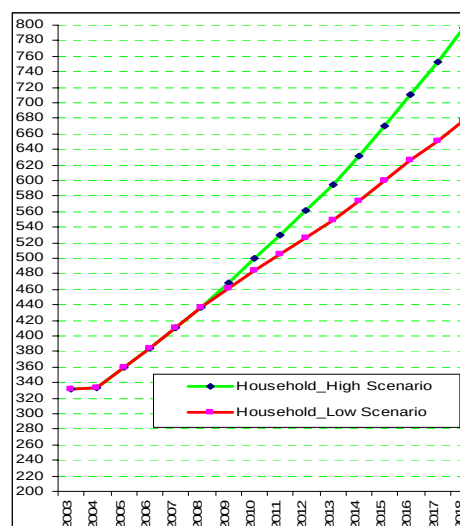


Figure 14: Total energy demand forecast for the housing sector for both growth scenarios (ktoe)

Main energy sources meeting the demand of the household sector are electricity, firewood and oil byproducts. Coverage of demand in the future shows that electricity consumption will increase in absolute terms, but its contribution will decrease in relative terms in the future. This decrease in relative term of contribution of electricity will be compensated by increased use of oil byproducts (particularly Liquefied Petroleum Gas - LPG) and firewood. Consequently, it is very important to undertake the necessary measures for LPG penetration in the Kosovo energy market.

8.2.2 Energy demand forecast for the services sector

To increase the quality of the services, and to improve the working conditions and comfort of the public administration, it has been anticipated that during the 2007-2016 period, the

ratio of heated to the total of heated and unheated areas will gradually increase, reaching at 100% in 2016. GDP growth from the private service sector will be associated with increased energy demand due to high demand for comfort, need for qualitative improvement of services and changes in the urban/rural population ratio in favor the urban.

Table 9 presents the main parameters used as basis for developing the energy demand forecast for the services sector.

Table 9: Main parameters for developing the energy demand forecast for the services sector			
Year	GDP-Service [Million EURO]	Energy intensity for the services sector [ktoe/Million EURO]	Population
2003	430.44	0.319896	1954000
2004	443.03	0.294902	1977448
2005	462.80	0.315717	2001177
2006	495.20	0.322031	2025192
2007	529.86	0.328472	2049494
2008	566.95	0.335041	2074088
2009	606.64	0.341742	2098977
2010	649.11	0.348577	2124165
2011	688.05	0.355549	2141158
2012	729.34	0.362660	2158287
2013	773.10	0.369913	2175553
2014	819.48	0.377311	2192958
2015	868.65	0.384857	2210501
2016	921.63	0.392554	2228184
2017	956.90	0.400406	2246011
2018	996.45	0.408414	2263979

Analysis of macroeconomic indicators shows that the services sector participates with approximately 10.9% in the GDP, and this participation will continue to grow as presented in Figures 15 and 16.

Energy consumption in the services sector will gradually increase, along with the increase of number of heated buildings and expansion of service sector activities. Structural changes are also envisaged, such as lower level of increase in use of coal and increased role of oil products in energy consumption structure.

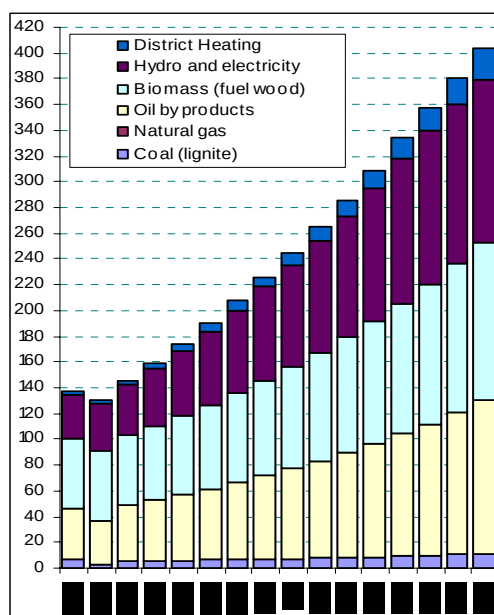


Figure 15: Energy demand forecast for the services sector for the high growth scenario (ktoe)

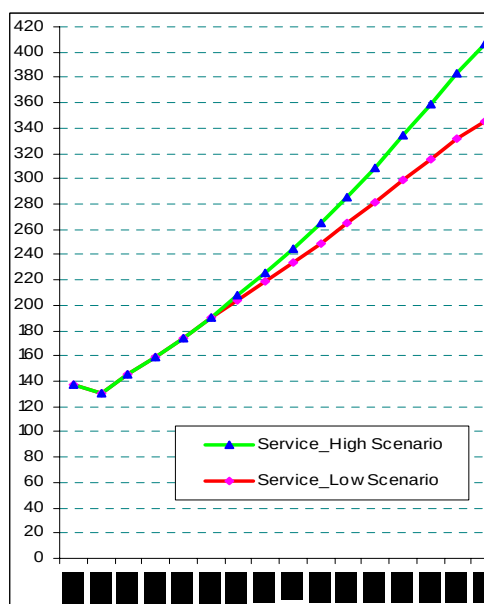


Figure 16: Total energy demand forecast for the services sector for both growth scenarios (ktoe)

8.2.3 Energy demand forecast for the industrial sector

During recent years, stabilization developments and tendencies for growth in the industrial sector have been mainly based in the existing technology, with some positive developments. From the energy consumption viewpoint, industry continues to have high energy intensity per unit of production, both in quantity and value, respectively 0.131 toe/ton of production and 0.688 toe/thousand of Euros.

Table 10 provides main parameters used in developing the energy demand forecast for the industrial sector.

Year	GDP-Industry [Million EURO]	Energy intensity in industry [ktoe/Million EURO]	TOTAL GDP [Million EURO]
2003	255.86	0.846099	2163
2004	267.44	0.696298	2260
2005	269.22	0.846297	2373
2006	285.37	0.837834	2504
2007	302.50	0.829371	2642
2008	320.65	0.820908	2787
2009	339.88	0.812445	2940
2010	360.28	0.803982	3102
2011	381.89	0.795519	3241
2012	404.81	0.787056	3387
2013	429.10	0.778593	3540
2014	454.84	0.770130	3699
2015	482.13	0.761667	3866
2016	523.86	0.753289	4041
2017	531.12	0.746434	4164
2018	553.07	0.738817	4298

It is envisaged that the largest contribution in the GDP from the industry sector will continue to come from the food, beverages, tobacco, metallurgy and construction materials

sub-sectors. Concerning consumption of energy sources, the main contributors are metallurgy, construction materials and food sub-sectors.

The forecast of the energy demand for the industrial sector based on the ‘top-down’ approach is presented in Figures 17 and 18.

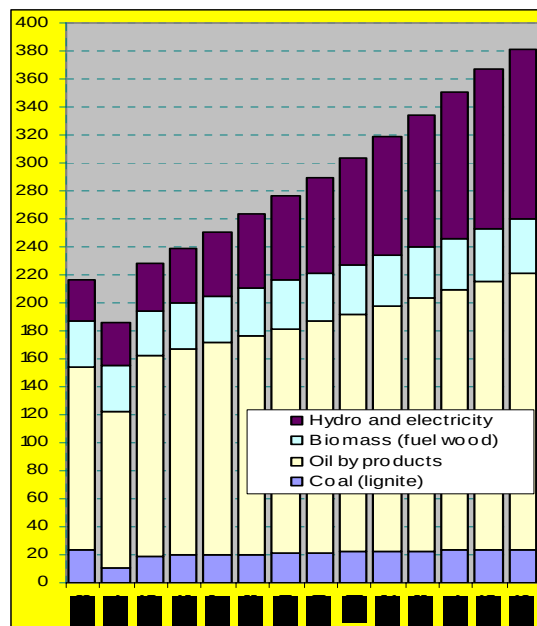


Figure 17: Energy demand forecast for the industrial sector for the high growth scenario (ktoe)

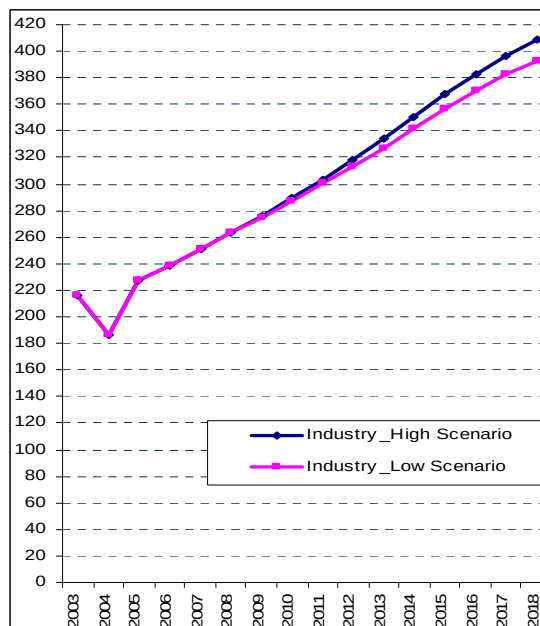


Figure 18: Total energy demand forecast for the industrial sector for both growth scenarios (ktoe)

8.2.4 Energy demand forecast for the transportation sector

Trend of basic indicators such as passenger-km and ton-km is the most important factor guiding the development of forecast of energy demand for transportation of passengers and goods. Transportation of passengers has increased significantly after year 2003. This is due to increased utilization of private driving vehicles.

Table 11 provides the main parameters used in developing the energy demand forecast for the transportation sector¹⁵.

¹⁵ In the absence of more detailed data, energy demand forecast for the transportation sector is based on added value (part of GDP) from the transportation sector.

Year	GDP-Transportation [Million EURO]	Energy intensity for transportation [ktoe/Million EURO]	TOTAL GDP [Million EURO]	Population
2003	351.94	0.9155447	2163	1954000
2004	374.50	0.7444079	2260	1977448
2005	407.19	0.8780696	2373	2001177
2006	423.47	0.8605082	2504	2025192
2007	440.41	0.8429468	2642	2049494
2008	458.03	0.8253854	2787	2074088
2009	476.35	0.8078240	2940	2098977
2010	495.40	0.7902626	3102	2124165
2011	512.74	0.7727012	3241	2141158
2012	530.69	0.7551398	3387	2158287
2013	549.26	0.7375785	3540	2175553
2014	568.49	0.7200171	3699	2192958
2015	588.38	0.7024557	3866	2210501
2016	606.89	0.6884066	4041	2228184
2017	624.10	0.6743574	4164	2246011
2018	640.10	0.6603083	4298	2263979

The forecast of the energy demand for the transportation sector, based on the ‘top-down’ approach, is presented in Figures 19 and 20.

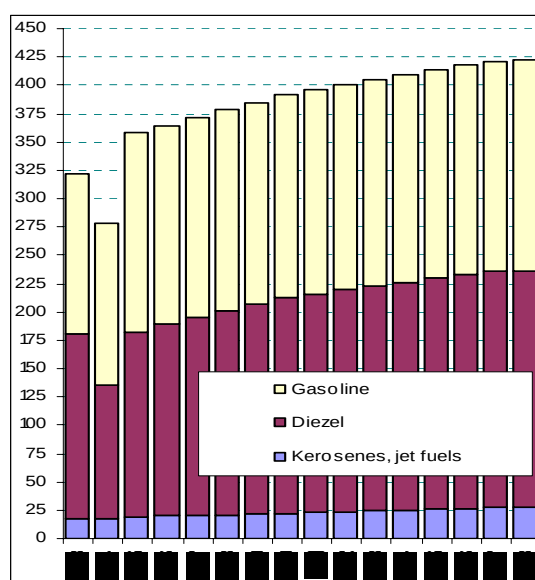


Figure 19: Energy demand forecast for the transportation sector for the high growth scenario (ktoe)

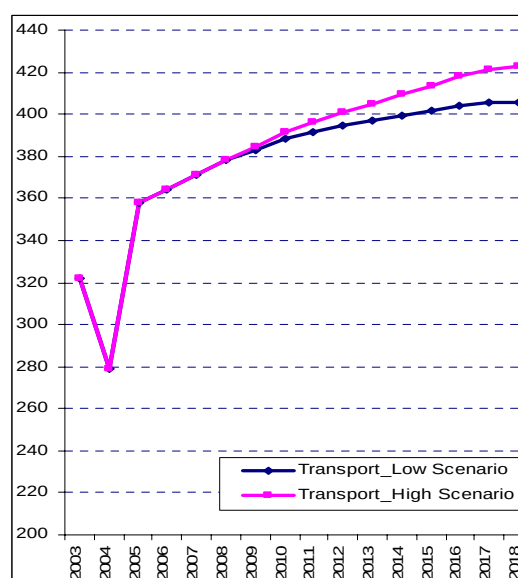


Figure 20: Total energy demand forecast for the transportation sector for both growth scenarios (ktoe)

As shown in Figure 19, main energy sources providing for coverage of needs in the transportation sector are diesel, gasoline and kerosene for airplane. It is expected that diesel and airplane kerosene will see a slight relative increase compared to gasoline in the future.

8.2.5 Energy demand forecast for the agriculture sector

GDP for the agricultural sector has increased from €1,124.76 Million in 2003 to €1,441.26 Million in 2008. It is projected that it will reach €2,109 Million by year 2018. Energy demand for the agricultural sector is expected to rise considerably in order to support this important development in the Kosovo's economy.

Table 12 presents the main parameters used in developing the energy demand forecast for the agricultural sector.

Year	GDP-Agriculture [Million EURO]	Energy intensity for the agricultural sector [ktoe/Million EURO]	TOTAL GDP [Million EURO]
2003	1124.76	0.0480212	2163
2004	1175.3742	0.0407741	2260
2005	1234.1429	0.0451517	2373
2006	1299.8404	0.0442486	2504
2007	1368.8288	0.0433456	2642
2008	1441.2602	0.0424426	2787
2009	1517.2924	0.0415395	2940
2010	1597.0896	0.0406365	3102
2011	1658.772	0.0397335	3241
2012	1722.4949	0.0388304	3387
2013	1788.3019	0.0379274	3540
2014	1856.2353	0.0370244	3699
2015	1926.3359	0.0361213	3866
2016	1999.151	0.035215	4041
2017	2052	0.0346765	4041
2018	2109	0.033954	4164

The forecast of the energy demand for the agricultural sector, based on the 'top-down' approach, is presented in Figures 21 and 22¹⁶.

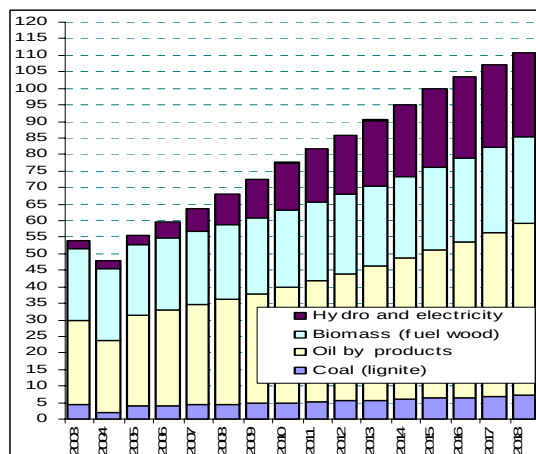


Figure 21: Energy demand forecast for the agricultural sector for the high growth scenario (ktoe)

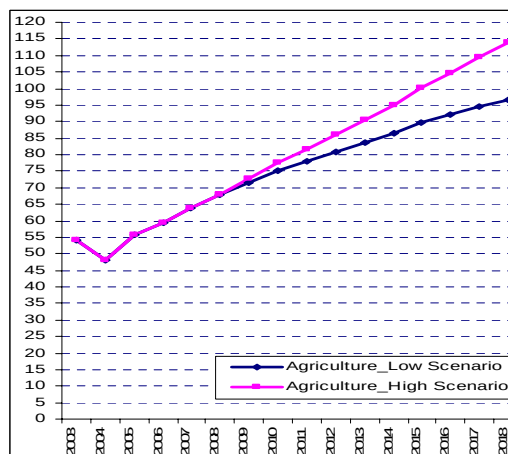


Figure 22: Total energy demand forecast for the agricultural sector for both growth scenarios (ktoe)

¹⁶ Added value from the agricultural sector and energy intensities are used as basic activity for the forecasting of future energy demand in the sector. Intensities are calculated as the ratio between consumption of energy resources and the activity level of the agricultural sub-sector, expressed in million Euros.

As it may be observed in Figure 21, consumption of oil is expected to increase significantly in the future; this is mainly to support the increase of mechanized agriculture production. Oil byproducts and firewood will continue to be dominated fuels in this sub-sector. However, it is projected that relative demand for electricity will increase due to modernization of irrigation systems.

8.2.6 Energy demand forecast for all sectors

Figures 23 and 24 present total energy consumption from 2003 to date and the forecasted total energy demand in Kosovo for the period until 2018.

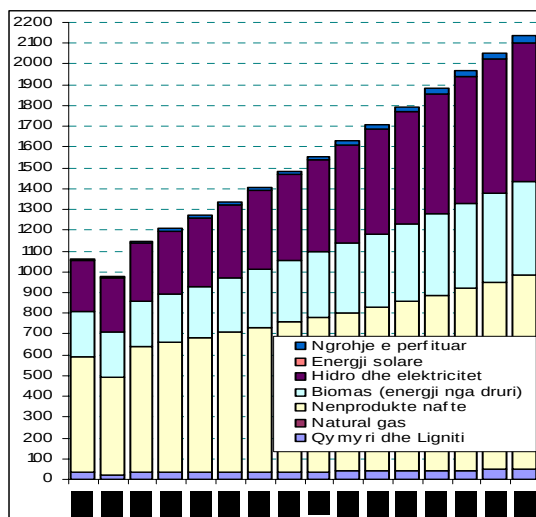


Figure 23: Total energy consumption in the past and demand forecast for the future by all sectors for the high growth scenario (ktOE)

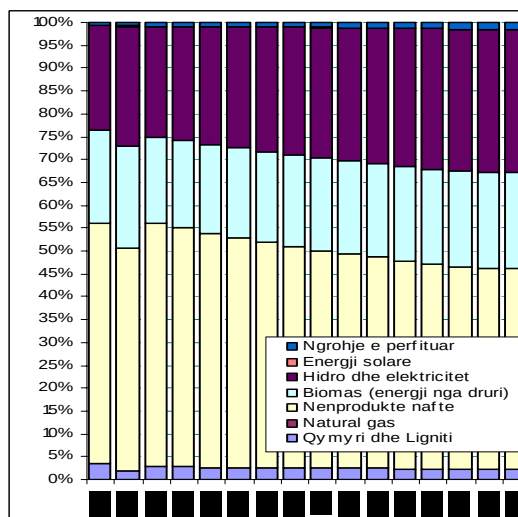


Figure 24: Total energy consumption in the past and demand forecast for the future by all sectors for the high growth scenario (%)

Figures 23 and 24 show that electricity is expected to noticeable increase its relative contribution in the total energy consumption in Kosovo.

Figures 25 and 26 present the demand forecast for each sector and its total. Figure 25 shows that energy demand for each sector will increase.

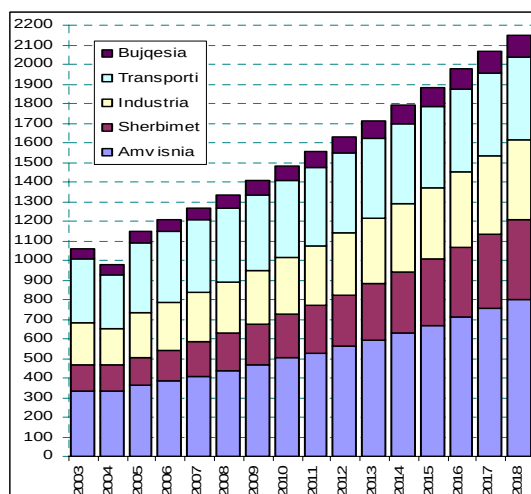


Figure 25: Total energy demand forecast for all economic sectors for the high growth scenario (ktOE)

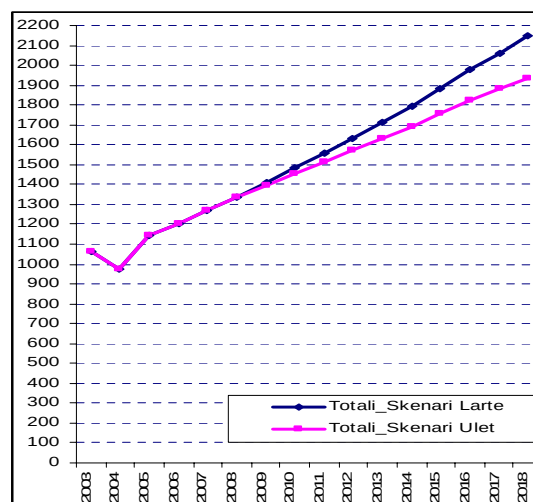


Figure 26: Total energy demand forecast for both growth scenarios (ktOE)

8.3 Analysis of the electricity demand forecast

8.3.1 Forecast of electricity demand and peak loads

The regional study¹⁷ of energy demand forecast, conducted to support development of sufficient new power generation and transmission capacities, has reviewed the forecast from 2007 onwards of energy demand in the regional market level, based on each country demand, including the data for Kosovo as they are presented in the sections above.

The medium demand scenario (MDS) for electricity envisages a modest increase of demand in the household sector, whereas high increase of demand is projected for the services and industrial sectors. Electricity demand in 2018 is projected at 6,939 GWh/year, associated with a peak load of 1,543 MW in the power system. Gradual reduction of commercial losses down to 5% during the period 2009-2011 is assumed in this scenario.

The high demand scenario (HDS) envisages the demand of 7,431 GWh/year in 2018, with a peak load of 1,671 MW. Gradual reduction of commercial losses down to 5% during the period 2009-2015 is assumed in this scenario.

Assessment of electricity demand and peak loads during the period 2009–2018 for the two scenarios depends on the period of eliminating commercial losses. Electricity demand and peak loads for the two scenarios: (a) MDS - medium demand scenario and (b) HDS – high demand scenario, are presented in Table 13.

Table 13: Electricity demand and peak loads for 2009 – 2018

(Pöyry: Market within Kosovo and revised based on forecast needs in an integrated manner for each sector according to the above analysis)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
GWh										
MDS	4994	5226	5418	5621	5834	6059	6295	6500	6715	6939
HDS	5299	5514	5713	5929	6164	6422	6662	6898	7153	7431
MW										
MDS	1130	1174	1212	1251	1297	1343	1403	1449	1506	1543
HDS	1210	1257	1302	1349	1389	1434	1515	1566	1618	1671

The forecast of increased demand according to the high demand scenario (HDS) implies unreasonable and premature investments for the construction of new power generation capacities as well as investment for expanding the capacities of the transmission and distribution networks.

In year 2018, the difference between two scenarios, MDS and HDS, in electricity demand and peak load is respectively about 492 GWh/year 128 MW. It is overwhelmingly evident that elimination of commercial losses and payment of consumed electricity requires a very serious approach and handling.

Adequate reserve capacity in the power system should be considered while planning for the engagement of required overall power generation capacities.

¹⁷ USAID funded Regional study of energy demand forecast

8.3.2 Electricity losses in the power system

The high level of technical losses (17-18%) and commercial losses (31-35%) in the power system, participating with approximately 50% in the gross electricity consumption during the 2000-2007 period, are the main causes for the current operational and financial situation of the KEK JSC.

Separation and border points of all generation, transmission and distribution capital assets between KEK JSC and KOSTT JSC are clearly defined. Apart from losses in the distribution network, KOSTT JSC must further reduce technical losses in its transmission network caused by electricity consumption within Kosovo and the transit of electricity.

Kosovo Government provides institutional support to KEK JSC in eliminating commercial losses, enforcing payment of electricity by customers receiving funding from the Kosovo Budget and initiating electricity payments from the minority enclaves.

8.3.3 Measures for stabilization and control of electricity supply

With the aim of stabilizing supply, controlling and managing of electricity consumption, as well as for properly planning electricity demand, the following effective measures should be undertaken¹⁸ during the 2009-2010 period in order to eliminate illegal use of electricity and to increase payment:

- (i) elimination of illegal electricity connections;
- (ii) contracting all of electricity supply;
- (iii) payment of electricity based on meter reading; and
- (iv) application of policies for gradually achievement of cost-reflective electricity tariffs¹⁹.

8.4 Electricity generation forecast in Kosovo for the 2009-2018 period

During the entire 1999-2008 period, annual power generation from domestic sources has been below the demand level. The current level of annual domestic power generation is around 4,300 – 4,600 GWh.

The forecast of power generation for the period 2009-2018 is based on production of electricity from TPP Kosova B, TPP Kosova A, HPP Ujman, existing and new small HPPs, HPP Zhur and production from TPP Kosova e Re.

Meeting of electricity demand is envisaged 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 2017²⁰.
- (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 2016 – 2017

¹⁸ Many studies have addressed the power system losses, and particularly commercial losses, (ESTAP I, D Module, Reduction in Technical Losses in Transmission and Distribution, 2002; and Pöyry Study, 2007), and measures and deadlines for their reduction have been proposed.

¹⁹ ESTAP III, Electricity Transmission and Retail Tariffs and Subsidy Delivery Mechanism, KEMA, 2007 (World Bank Study)

²⁰ Time of closing down of the unit of the TPP Kosova A before end of 2017 will depend from the time of commissioning of the units of TPP New Kosova.

period, including completion of investments required to meet emission standards required by EU Large Combustion Plants Directive. These units would continue their commercial operation for up to 15 more years after rehabilitation, respectively until 2030.

- (iii) Power generation from Ujmani Hydro Power Plant (HPP), which could, with maintenance and rehabilitation, continue its commercial operations for a long-term period.
- (iv) Power generation from the small HPP (SHPP) Lumbardh.
- (v) Power generation from the Zhur Hydro Power Plant, expected to be constructed by 2015 and begin its commercial operation in 2016.
- (vi) Power generation from the new units of TPP ‘Kosova e Re’. Its first generation unit is expected to enter into commercial operation in 2016.
- (vii) During the 2010-2018 period, more than 16 SHPPs will be developed, entering into operation with a total installed capacity of over 60 MW. Meanwhile, the existing small hydropower plants will be rehabilitated and returned into operation.
- (viii) Until initiation of production in TPP Kosova e Re, coverage of remaining electricity balance will be met through imports.

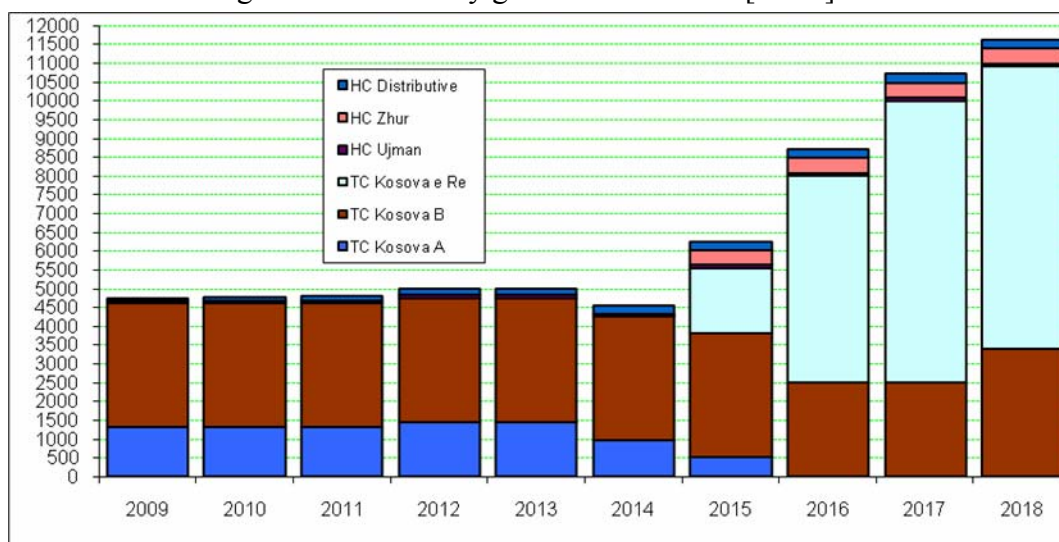
Based on the above assumptions, electricity generation from domestic power generation plants for the period 2009-2018 is shown in Table 14.

Table 14: Electricity generation forecast [GWh]

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TPP Kosovo A	1300	1300	1300	1450	1450	950	500	0	0	0
TPP Kosovo B	3300	3300	3300	3300	3300	3300	3300	2500	2500	3400
TPP Kosova e Re	0	0	0	0	0	0	1750	5500	7500	7500
HPP Ujman	79	79	79	79	79	79	79	79	79	79
HPP Zhur	0	0	0	0	0	0	398	398	398	398
Small HPPs	42	100	125	150	175	200	210	225	240	250
Total	4721	4779	4804	4979	5004	4529	6237	8702	10717	11627

Electricity generation forecast is presented graphically in Figure 27.

Figure 27: Electricity generation forecast [GWh]



8.5 Electricity supply in Kosovo for the period 2009 – 2018

Supply of electricity during the 2009–2018 period will be achieved by domestic generation and imports which will be needed until approximately mid of 2015. In 2016, the first Unit of TPP Kosova e Re is expected to enter into operation and imports will no longer be needed. The amount of imported electricity will depend from consumption control, and primarily from elimination of commercial losses. Forecasted electricity demand, according to the scenarios described earlier, and generation for the period 2009–2018 are summarized, in Table 15.

Table 15: Forecasted demand and generation of electricity

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Demand [GWh]										
MDS	4994	5226	5418	5621	5834	6059	6295	6500	6715	6939
HDS	5299	5514	5713	5929	6164	6422	6662	6898	7153	7431
Generation	4721	4779	4804	4979	5004	4529	6237	8702	10717	11627
Balance [GWh]										
For MDS	-273	-447	-614	-642	-830	-1530	-58	2202	4902	4688
For HDS	-578	-735	-909	-950	-1160	-1893	-425	1804	4464	4196

Note: (-) values with the minus sign prefix in the balance section show the annual import needed

8.6 Lignite supply for power generation during the period 2009-2018

Demand for lignite to supply the existing power plants and the TPP Kosova e Re (with a capacity of up to 1000 MW in the first phase) are shown in Table 16.

Table 16: Demand for Lignite

In '000 ton					
Year	TPP A	TPP B	TPP Kosova e Re	Market	Total
2009	2405	4785	0	50	7,240
2010	2405	4785	0	70	7,260
2011	2405	4785	0	100	7,290
2012	2683	4785	0	110	7,578
2013	2683	4785	0	120	7,588
2014	1758	4785	0	130	6,673
2015	925	4785	1925	150	7,785
2016	0	3625	6050	160	9,835
2017	0	3625	8250	170	12,046
2018	0	4585	8250	180	13,015

9. Mission and Vision of the Energy Strategy

Energy is a key sector of the Kosovo economy, notably because of Kosovo's large lignite mining and electric power generation potential. Supply of reliable and high quality electricity is a critical element for further economic development and in attracting private sector interest for investment in Kosovo. Lignite mining and power generation sector also has the potential to become a substantial long-term source of income for the country, boosting electricity trade with Southeast Europe and contributing to closer integration with

the rest of Europe. Kosovo is committed to achieving this goal while also complying with all relevant EU energy and environment directives, norms and standards and with the provisions of the Energy Community Treaty.

Mission

The Mission of this Strategy is to contribute to Kosovo's development by enabling rapid and sustainable development of the energy sector, in line with European approach and standards, primarily based on rational and effective utilization of domestic natural energy resources, in order to achieve stable and qualitative supply of energy to consumers and efficient utilization of energy while at the same time protecting the environment.

Vision

The above Mission of the Strategy will be fulfilled by achieving the financial viability of the energy sector; its full restructuring in line with the European approach; completion of the legal and regulatory framework for attracting necessary private investments through open and competitive processes; establishment of free, open, and competitive energy market, integrated with the regional and European energy markets, which will provide all consumers, with minimal possible costs, energy services offered by environmentally friendly technologies.

10. Strategic Objectives

Accelerated and sustainable economic development of Kosovo will substantially depend on implementation of adequate economic and structural policies and reforms which will ensure rational utilization of natural and human resources in Kosovo. Government of Kosovo (GoK) has designated the energy sector as one of the key standing pillars of sustainable economic and social development of the country. Restructuring of the energy sector to attract private investment and developing new power generation capacities - based on rational utilization of abundant lignite resources - to cover increasing domestic demand for electricity and also to export, which are two priority goals of the GoK. These goals are also the cornerstones of this Strategy.

Security of supply, promotion of investments in the sector, preserving of environment and further development of the energy market are the main strategic goals of the new European strategy for the EU energy sector. A number of important objectives derive from these goals, including the so-called 20% - 20% - 20%.

Kosovo aims for EU integration as early as possible. This will require also implementation of the objectives of the EU plan 20-20-20 for the energy sector requiring member countries that by 2020:

- Reduce green gas emissions by 20%,
- Increase renewable energy share of final energy consumption to 20, and
- Improve energy efficiency by 20%.

The review of strategic objectives is based on comprehensive analysis of the: (i) situation in the energy sector, (ii) Energy Strategy 2005-2015, (iii) Program of the Government, as well as (iv) Kosovo commitment for integration in the EU as early as possible.

Identified strategic objectives of this Revised Energy Strategy are:

1. Secure reliable energy supply: All categories of energy consumers must be able to enjoy efficient and uninterrupted energy supply of an adequate quality.
2. Restructure and develop the energy sector in compliance with the Energy Community Treaty (EnCT): The energy legislation in Kosovo must be in line with the European Union *Acquis Communautaire* on Energy, and the timetable set by the EnCT. Kosovo has to continue reforming its energy industry in order to ensure competition in the energy market under the general principles of open competition, non-discrimination, transparency, equality, respect for consumer protection and society's sustainable development.
3. Develop and rehabilitate lignite-fired power generation capacities: Development and rehabilitation of power generation capacities with private sector investment is of high priority for the Government of Kosovo (GoK). Sufficient power generation for domestic consumption, ensuring of reserve capacity, and export of electricity will promote sustainable development of the country and ensure important revenues to the national economy.
4. Develop energy transmission infrastructure: Kosovo has unbundled the transmission function (KOSTT JSC is already incorporated) and is working to enhance its transmission and transformers capacities for domestic supply and connections with the systems of neighboring countries, through rehabilitation, reinforcement and expansion of its transmission infrastructure.
5. Develop energy distribution infrastructure: It is imperative for Kosovo to drastically reduce energy losses, both commercial and technical, in the power distribution system. Extension and reinforcement of the district heating distribution network also is necessary.
6. Promote foreign investments in the energy sector: Kosovo aims to cover the majority of its capital requirements for energy sector investments through private sector investment. To attract private capital Kosovo has to complete restructuring of the energy sector and offer a stable regulatory environment within a competitive market context, and also use a set of appropriate institutional tools. Unbundling of lignite mining, power generation, and power distribution functions as part of already started restructuring process are prerequisites before attraction of private capital in line with the EU *Acquis* for the energy sector.
7. Optimize exploitation of all available energy resources, including both indigenous and imported resources: Kosovo has to take advantage of its indigenous abundant lignite resources and plan for their rational utilization for electricity generation, exploiting the cost-competitive advantage of Kosovo's power industry supply chain in the Energy Community. Moreover, it also needs to utilize rationally all other available energy resources, including hydropower and other renewable energy resources.
8. Promote environmental protection awareness in energy activities: In accordance with the EnCT, Kosovo is committed to implement the *Acquis Communautaire* on Environment with regard to energy resources exploitation and power infrastructure construction and operation.
9. Ensure efficient use of energy and promote use of renewable energy resources: Kosovo plans to promote both Energy Efficiency and the Use of Renewable Energy as two

interrelated sustainable development options that contribute to the overall security of supply and environmental protection.

10. Develop gas network infrastructure: It is important for Kosovo to connect to the regional gas networks in the medium term with private sector investments. This will enhance energy source diversification and contribute substantially to the reduction of electricity consumption in households and service sector.

11. Priority policies and measures for the accomplishment of strategic objectives

A number of important sector reforms, policies and strategies will be advanced. These include:

- (i) development of new power generation capacities;
- (ii) undertaking complete unbundling of KEK JSC to meet Kosovo's obligations under the Energy Community Treaty and facilitate private sector participation;
- (iii) developing a sound and comprehensive legal and institutional framework for concessions and/or privatization to strategic investors;
- (iv) concessioning or privatization of power distribution and supply, as well as engaging private sector in existing power generation industry;
- (v) furthering development of the power transmission and interconnection system;
- (vi) promoting energy efficiency and private sector investment in developing renewable energy sources; and
- (vii) developing and implementing sound policy for connecting to the regional gas networks and diversify sources of energy supply.

11.1 Lignite mining

Considering exhaustion of lignite reserves in the Bardh and Mirash mines in 2010-11, opening of the new lignite mine to secure continuous supply for the existing generation plants TPP Kosova A and Kosova B is an urgent matter since it has a direct impact on the security of power supply.

Future development of lignite mines is planned to take place in the northern part of the "Kosova" lignite basin. This part is also known as the "Sibovc Field", but at the request of the residents of that area during public consultations, this field is now called "the New Mine".

To secure uninterrupted lignite supply to the existing generation facilities and in order to avoid costly power cutoffs, it is required that the new mine in the southwest of the "New Mine" enters into operation from 2010; as it is envisaged in the EAR²¹ funded projects in 2005/06.

Preventing a possible energy collapse as a result of delays in the development of the "New Mine" is a top priority for the Government. Initial investments during the 2008-2009 period, amounting to around €150 million, will be covered by the Kosovo Budget. The

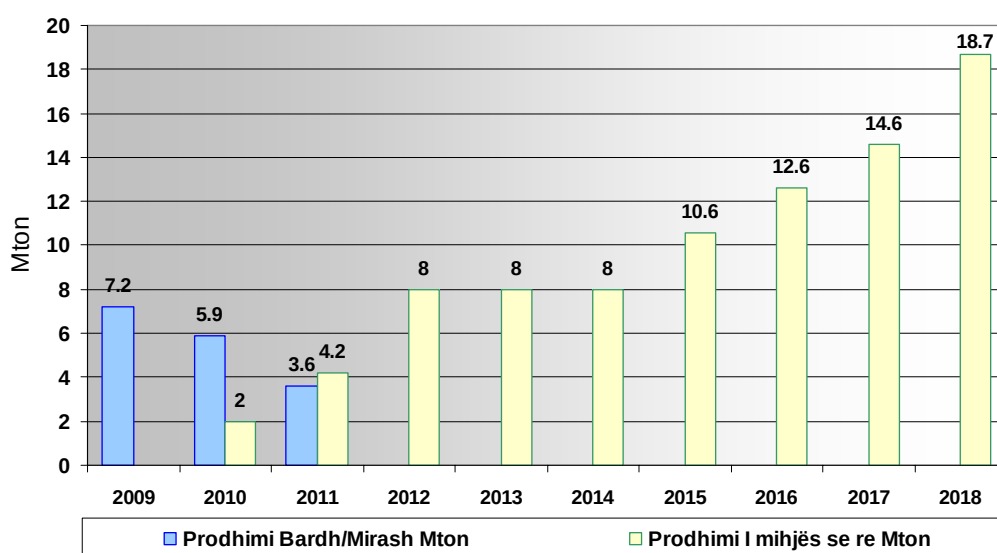
²¹ The European Agency for Reconstruction

Government, within the Medium Term Expenditure Framework (MTEF), has committed a soft credit line of €75 million in 2008 for KEK JSC to finance rehabilitation and/or purchase of the new equipment (bucket-wheel excavators) for the “New Mine”. It has allocated also around €75 million for 2009. The EC and KfW together have offered €25.2 million for the rehabilitation of two bucket-wheel excavators. The Kosovo Budget is co-financing this rehabilitation with €15 million. The Government will continue to support any required measure for ensuring continued and uninterrupted lignite supply to the existing power generation capacities.

Expansion of the mine, as continuation of mining in Southwest of Sibovc, will be required during the period until the start of electricity production from the first phase of 1000MW of TPP Kosova e Re. The total exploitable amount of lignite in the “New Mine” is assessed at 830 Million tons, amount which is sufficient to supply the existing power generation capacities as well as a thermopower generation complex of about 2000MW for 40 years.

Figure 28 shows the anticipated lignite production from open cast mines during the next 10-year period 2009-2018.

Figure 28: Lignite production during 2009-2018



Source: Long-term balance of Electrical Energy in Kosovo, 2009-2018, KOSTT JSC.

Sector Policy

The Government is reviewing possible options for reorganization of the lignite mining sector in order to ensure rationalization of exploitation of lignite from the “New Mine” to the extent possible, while at the same time ensuring maximization of financial, economic, and social benefits, as well as improvements of the environmental situation in that area.

Therefore, the Government shall develop an adequate regime of revenues for electricity generation based on Royalties, reclamation taxes, and Lignite Mining Fees (LMF). This regime shall be based on market terms and conditions, and the offered rate of the sum of these taxes shall be among the major criteria for selection of the strategic investor.

Development of the “New Mine” shall be realized through significant medium to long term investments, mainly from the private sector, with the initial support from the Kosovo Budget in order to avoid delays in its development.

Main measures to be undertaken

a. Interim financial arrangements

To avoid delays in the opening of the “New Mine” in the Southwestern of the Sibovc basin, in order to provide uninterrupted supply to the existing power generation facilities, the Government shall:

1. help to expedite procurement by KEK JSC of the necessary equipment and services needed to open Sibovc SW in time; and
2. provide required funding for this procurement.

b. Sustainable development of the lignite mining sector

The Government shall continue to strengthen its role in enabling private sector investment for mineral development. Thus, the Government shall:

1. Ensure clean coal development by encouraging efficient mining operations, lessening the impact of coal transportation and ash storage, encouraging good global practices on conversion technologies, and setting up the regulatory institutions and frameworks necessary for monitoring, reporting and verification of such practices;
2. Ensure that communities benefit from coal mining and, where possible, link local economic development to the project;
3. Obtain broad support of affected communities through informed consultation and participation at the local level; and
4. Maintain a national minerals development policy that is guided by principles of sustainability.

c. Environmental and social safeguards

The Government is committed to addressing the social issues resulting from mine development in a manner consistent with international best practices. Social policies on community consultation, participation and resettlement of people living in zones anticipated for development will be formulated in line with EU regulations so as to ensure that the impact on people caused by the sector development are adequately addressed. The Government will:

1. develop and adopt a social policy framework governing all aspects of resettlement in the beginning of 2010;
2. commence in 2009 land reclamation efforts by reshaping and re-cultivating sites covered with overburden material from the existing lignite mines;

3. develop suitable policies to ensure transparent and equitable distribution of any reclaimed land, including policies for the resettlement of affected households and communities.

d. Good governance policies

The Government shall:

1. consider recommendations received from the legal and regulatory framework advisors of the “Kosova e Re” Project, including recommendations on the proposed legislation on Strategic Environmental and Social Assessment (SESA) and proposed amendments to the Law on Expropriation; and
2. support independence of the Independent Commission on Mines and Minerals and ensure adequate separation of policy and regulatory functions, in line with the best international practices.

11.2. Electricity

Policies to be implemented

Despite major capital and operating subsidies by the international community and the Kosovo Budget over the past 10 years, operational performance of Kosovo Energy Corporation (KEK JSC) has not improved significantly and the power supply situation remains unsatisfactory.

To address this problem, Kosovo is moving forward with the Kosova e Re TPP Project, which in its first phase will result with development of 1,000 MW of modern, efficient and environmentally compliant power generation capacity, that will support demand in Kosovo for uninterruptable electricity in the medium and longer term period. The Kosova e Re Project will allow Kosovo to become a net exporter from a net importer of electricity.

Until commissioning of the Kosova e Re, satisfying electricity demand will be achieved by operating the existing generation capacities and development of new ones. Until new generation capacities enter into operation, shortages will be covered, as best as possible, by imports and regional exchanges.

Main measures to be undertaking for meeting the electricity demand

a. Maintenance and normal operation of the existing power generation capacities.

1. TPP Kosova A, commercial operation with regular maintenance until the end of 2017 at latest:
 - operation with two or three units, depending on availability of coal supply;
 - operation with three units after the New Mine comes in production;
 - realization of project for hydraulic transportation of ash in mines; and
 - possible improvement of the environmental component.
2. TPP Kosova B, commercial operation with two units:
 - Operation with two units in the long term; and

- Revitalization of the two units in the period 2016-2017.

3. Hydropower Plants, generation from HPP Ujmani and other small existing HPPs.

b. Electricity import and exchanges

c. Development of the new power generation capacities

- Construction of TPP Kosova e Re through an open, transparent and competitive process;
- Construction of HPP Zhur with concession through an open, transparent and competitive process;
- Increase of capacity/converting to reversible HPP Ujman;
- Development through concessions of the new small HPPs through an open, transparent and competitive process;
- Revitalization of the units of TPP Kosova B; and
- Development of new power generation from other renewable resources.

11.2.1 Further unbundling of KEK JSC

Unbundling of the KEK JSC is required by the existing energy legislation in Kosovo, obligations under the EnCT, and the Energy Strategy of Kosovo. Unbundling of the KEK JSC started with creation of KOSTT JSC in 2006. Further unbundling is in process. It will be completed before the Government of Kosovo proceeds with eventual privatization/concessioning of TPP Kosova B and the power Distribution and Supply businesses.

The Government will ensure that steps are taken to improve the governance of KEK JSC before privatization or concession. Through the KEK Board of Directors it will demand, inter alia, a general upgrading of KEK JSC's management and management systems and timely submission of annual external audit reports with decreasing number of qualifications.

Anticipated stages for the complete unbundling of KEK JSC are:

Stage one: During 2009 unbundling of KEK JSC divisions has been carried out as it was provided for in the 2008²² Decision of the Kosovo Government. This decision envisages organizational and financial unbundling of the KEK JSC into five business units including: Lignite Mines, TPP Kosova A, TPP Kosova B, Power Distribution, and Public Power Supply. Complete unbundling of accounts and management between KEK divisions is also required by the EnCT.

Second Phase: During the second half of 2009, following financial/management unbundling, Distribution and Supply businesses will be legally separated from KEK JSC into an enterprise, to be privatized in 2010, as decided by Kosovo Government in 2008.

²² Government Decisions on the incorporation of the Power Distribution and Supply Company, No 03/38, 2008; and its privatisation through a public tendering No 03/38, 2008 and No 08/39.

During the 2009-2010 period, Government will also define ownership status of KEK JSC's secondary activities, such as social transportation and food services.

11.2.2 Billing and collection, financial recovery of KEK JSC

Policies to be implemented

Some technical improvements in the distribution network can improve billing of electricity. KEK JSC has already implemented a detailed energy balance reporting system to quantify lost energy for each path. Further progress requires expansion of secured metering, both at the distribution transformers and end-user levels, with meters being in accessible locations and secured in order to prevent tampering. 'Smart' metering is introduced as a pilot project in a zone of Prishtina.

KEK will be supported by vigorous parallel actions by the Government and the judiciary. Strong penalties shall be instituted for electricity theft and for corruption by KEK JSC staff. KEK JSC must dismiss dishonest and ineffective employees, without the latter having undue recourse. The police should assist KEK JSC systematically in identifying cases of theft and, where necessary, make arrests. The courts should be provided with resources and empowered to deal expeditiously with a large backlog of electricity theft and non-payment cases as well as the new cases. KEK JSC should be given full ownership of all end-user meters and be solely in charge of meter purchasing and installation.

Improving billing and collections and reduction of non-payment of electricity²³ requires strong political will and implementation of rule of law. A comprehensive and integral Action Plan (AP) backed by the GoK, which includes, *inter alia*, a media campaign to educate consumers and punitive actions through the courts for those defaulting on payments will be developed and implemented. The AP should be supported by critical investment such as procurement of meters for power distribution transformers that would improve the accounting of energy at a lower, more manageable level. The MEM/GoK position is to provide extensive support to KEK JSC's effort for implementation of such AP. The GoK is also committed to adoption of legislation that will designate theft of electricity as a felony.

Priority measures for reducing commercial losses

Theft and non-payment of electricity bills account for about 44% of electricity demand in almost equal amounts, representing a revenue loss of almost €100 million per year. This prevents KEK JSC from covering its operating expenses; making investments and doing proper maintenance; financing of electricity import contracts and hinders prospects of attracting private investments into the sector on favorable terms. To address this issue the Government will:

1. Request KEK JSC to prepare a 2-year detailed action plan (AP) for increasing billing and collections to acceptable rates during 2009-2010, including setting of targets for each quarter;
2. Support KEK JSC to implement the Action Plan mentioned above;
3. Enable KEK JSC to take appropriate measures for corrupt and ineffective employees;

²³ In 2007 technical losses constituted 16.2% of demand; theft 22.4%; and other commercial losses 21.4%. In short, 60% of demand was not paid for. Only 77% of the electricity billed was collected.

4. Amend the Criminal Code, if necessary, to ensure strong and effective penalties for electricity theft by consumers and for corruption on the part of KEK JSC employees;
5. Provide resources and authorize the police to assist KEK in systematic identification and recording of all cases of theft including making arrests where necessary;
6. Provide resources and empower the courts to deal expeditiously with the large backlog of electricity theft and non-payment cases and similarly deal with new cases; and
7. Provide further support to KEK JSC through sustained media and public education campaigns.

11.2.3 Legal and regulatory environment

With regard to the legal and regulatory frameworks for the energy and lignite mining sectors, Kosovo will consider recommendations of the LPTAP Legal and Regulatory Advisors, including recommendations regarding the proposed Strategic Environmental and Social Assessment (SESA) legislation and the proposed revisions of the Law on Expropriation. Government is also committed to support strengthening of the independence and the competence of its energy and mining regulatory authorities, and to ensuring the proper separation of policy and regulatory functions in accordance with Energy Community Treaty requirements and applicable EU Directives.

The Government will continue to support the ERO's autonomy and independence, because it is needed not only to ensure KEK's JSC and KOSTT's JSC self-sustainability, but also to shore up prospective investors' confidence. Hence the Government will support and respect the ERO's decisions.

The Independent Commission for Mines and Minerals (ICMM) is in charge of licensing of coal mining and ensuring health and safety compliance. The Government recognizes the importance of ICMM's autonomy and independence.

11.2.4 Thermal Power Plant 'Kosova e Re'

The Government is committed to development of the new Sibovc mine and associated Kosova e Re power plant by private strategic investors (hereinafter called Kosova e Re Project). To that end it has engaged transaction, legal and environmental advisors through financing from the World Bank's Lignite Power Technical Assistance Project (LPTAP). These advisors are assisting the Government, respectively the Project Steering Committee (PSC), in preparing an open, transparent and competitive bidding process for the Kosova e Re Project.

Apart from the new power plant and sufficient lignite resource to operate it, the final bid package of the Kosova e Re Project may, or may not, include all or a certain part of the reserves of the New Mine. During 2009, the Government will define the contents of this bid package so that the Project is successfully implemented, while satisfying to the maximum extent expectations of the Kosovo institutions. After the Government defines the content of the bid package, the Transaction Advisors will finalize the Request for Proposal (RfP). Bids are expected to be submitted during the fourth quarter of 2009, evaluated in the first quarter of 2010, and financial closing is expected in the second half of 2010.

Government of Kosovo, inter alia, shall;

1. Be advised by the Transaction and Legal Advisors through the selection of the preferred bidder;
2. Take timely decisions on policy matters;
3. Finalize the “Development plan of the New Mining area”, including the spatial plan of the special zone and the development of all related activities of the Kosova e Re Project;
4. Define water policies, based on water usage priorities;
5. Complete construction of the new 400 kV transmission line with the Republic of Albania; and
6. Initiate activities for development of documentation required for construction of the second 400 kV interconnections line with the Republic of Macedonia.

11.2.5 Revitalization of TPP Kosova B with private sector participation

Rehabilitation of TPP Kosova B is a technical necessity. It will not only enhance the reliability of this power plant and somewhat increase its generation capacity, but it will also enable compliance with environmental standards currently required by Kosovo laws.

Timing of the rehabilitation will be linked with the commissioning of TPP Kosova e Re. The Government will engage the private sector in implementation of this rehabilitation. The form of engaging the private sector will be carefully assessed and selected. A public private partnership (PPP) is preferred. The Government will engage donor support in preparation of all necessary studies for facilitating the rehabilitation of TPP Kosova B with private sector investment.

11.2.6 Modernization of the transmission system and its international integration

Policies to be implemented

The main objective of this strategy, as far as the transmission system is concerned, is to establish a sustainable infrastructure able to handle the increased domestic demand for electricity and enhance Kosovo’s power exchange capability in the regional market.

Further upgrading and new investment are needed in the transmission network. Targeted investments will improve the reliability of the transmission system, eliminate power transfer constraints, facilitate regional power exchanges, and help reduce technical losses. Reinforcement of Kosovo’s interconnections to the regional electricity market is essential for ensuring the security of Kosovo’s electricity supply. Rehabilitation of several substations is necessary to decrease technical losses and improve service and reliability.

It is essential to develop the transmission infrastructure in line with the criteria that provide for operational reliability according to European standards. Above all, it is important to overcome power exchange constraints with neighboring countries, particularly with Albania through the construction of the new 400 kV line. The need for intensified exchange with Albania is related with the possible optimization of the two compatible systems in commercial bases.

Quality supply of electricity from the units of the Kosova e Re TPP requires strengthening of the transmission network and construction of new substations.

Important issues that will be carefully considered include:

- development of sufficient transformation capacities 400 kV to 110 kV and eventual maintenance and expansion of the existing transformation stations 220 kV to 110 kV;
- development of sufficient capacities of the 110 kV transmission grid; and
- provision of secure data collection and control systems for operation of the transmission system.

Development of the transmission network will aim at increasing transmission capacities so to meet the forecasted increasing demand for electricity. The plan for development of transmission capacities will take into consideration the needs of the new generation capacities for connection to the grid, although investments for connection to the grid should be borne by the new power generators themselves.

Main measures to be undertaken

Main measures for development of the transmission grid include:

- Construction of the 400 kV interconnection line with Albania, 400/110 kV substation in Peja, Prizren and that of Ferizaj with Gjilan, installation of the SCADA/EMS²⁴, as well as the necessary reinforcements of the 110 kV lines;
- Preparation of necessary rules and infrastructure for operation of the electricity market;
- Load and frequency control (LFC) in the Kosovo power system and purchases from neighboring countries that would enable independence in regulating and control of transactions in borders with the neighboring systems; and
- Definition of the status of existing 220 kV lines No. 212 and No. 215 with Macedonia, as well as initiation of activities for the construction of the second 400 kV interconnection lines with the Republic of Macedonia.

Government of Kosovo will define clearly the electricity market model so that potential power generation developers know the ‘rules of the game’ beforehand.

11.2.7 Engagement of private sector in power distribution and supply

Policies to be implemented

Creation of conditions for a power market free of monopoly in Kosovo, also in line with the obligations stemming from the Energy Community Treaty (EnCT), is part of the Government approach to attract investments for ensuring, as affordable as possible, energy prices for consumers.

²⁴ Supervisory Control and Data Acquisition (SCADA) system and Energy Management System (EMS)

Further upgrading and new investment are needed in the distribution network to reduce losses, while demand side investments in energy efficiency should be undertaken to help curb demand. Targeted investments will improve reliability of the distribution system and help reduce technical losses. Rehabilitation of several substations is necessary to decrease technical losses and improve service and reliability. The most urgent investments in the distribution network concern metering assets at the sub-station level and secure metering at the end-user level.

Because of the continuing poor billing and collection performance and the dire need for capital investments the Government has decided that KEK Distribution should be privatized. The Government has selected Transaction Advisors who will support the preparatory process and selection of a strategic private investor that will take over the electricity distribution and supply functions, which are lately incorporated in a new corporation separate of KEK JSC.

The Government is keenly aware that actions required to improve KEK JSC's performance before private sector investors will commit themselves to taking over the new corporation of distribution and supply of electricity. If not, the Government would have to formally agree to an unacceptably high level of contingent liabilities vis-à-vis the private investors.

The Government is committed to privatizing KEK Distribution, if possible through a sale of shares, to a private strategic investor under an international competitive bidding procedure. Privatization to a strong investor with financial backing would not only help improve customer service and reduce the burden on the Kosovo Budget, but would also provide for substantial capital investments required in the Kosovo' power distribution network.

The Government recognizes that successful privatizations on this scale needs to be well prepared in order to maximize the benefits for Kosovo. It is well aware of the fact that the speed of the process depends critically on its own decision-making regarding strategic sector options, on its institutional capacity, and on prevailing market conditions.

Engagement of the private sector could require Kosovo to take on significant contingent liabilities, either directly or indirectly through KEK JSC and KOSTT JSC. All contingent liabilities will be stated in accordance with IMF guidelines or other best practices. Appropriate caution will be exercised when negotiating such clauses, with due attention to fiscal limits and to ensuring a reasonable distribution of the risks between the state and private sector.

Measures to be undertaken

After privatization of KEK Distribution, the private investor should increase the number of supply points, as well as to reinforce 110/35 kV and 35/10 kV substations along with interconnection lines. In addition, the investor should enhance the network configuration, distribution lines and transformation stations.

Anticipated measures and actions related to the distribution network during the period 2009-2018 are:

- Realization of necessary rehabilitations, strengthening and modernization of the network so as to eliminate congestions, reduce technical losses and improve security of electricity supply for end-use consumers;
- Construction of required substations at all levels;
- Definition of required new substations in the future and for the shifting to different tension levels; and
- Creation of conditions for connection of renewable power generation capacities in the distribution system.

11.2.8 Development of the electricity market and competition

Policies to be implemented

The Government is committed to implementing all of the Energy Community Treaty (EnCT) obligations, including establishment of an open and competitive energy market, as one of the most important requirements. Establishment of the energy market is also a legal requirement in Kosovo.

Considering insufficient power generation capacities, transmission grid constraints, technical condition of the distribution network as well as difficulties in sufficient energy exchanges with other countries and high import prices, it seems obvious that development of a competitive domestic electricity market is practically impossible in the short term period.

Main measures to be undertaken

With the aim of meeting the EnCT obligations, electricity market could be promptly opened for all non-household consumers. However, this does not mean its opening in practice mainly because the distribution network is not technically capable of providing Third Party Access without problems, and because prices in foreign markets of electricity are significantly higher than those in Kosovo.

The Government will make all efforts and will support preparation of necessary regulatory framework so that the local energy market is developed as an integral part of the regional energy market within the EnCT. This means that the Kosovo energy market model and rules will be in compliance with the EU *acquis* and EnCT requirements.

EnCT requires Kosovo to adhere to provisions of competitiveness in line with EU *acquis*. Energy Community Secretariat has asserted that the existing Kosovo Law on Competition is not fully compliant with the EU *acquis*. Therefore, MEM will urge MTI and MEF to revise and amend this Law, so that it can be fully implemented through mechanisms provided in it and also properly addressing the electricity market.

11.2.9 Electricity tariffs and social safeguards

Policy to be implemented

It is the policy of the Government to support the gradual increase of energy tariffs so that they reflect costs of generation, transmission, distribution and imports. The increase will be

gradual and well studied so that every increase is affordable for incomes of the vast majority of households in Kosovo. To achieve this, MEM will coordinate development of an affordability study on capability of the consumers to pay for energy consumed.

Measures to be undertaken

The burden that tariff increases and collection enforcement will impose on poorer households is a legitimate concern of the Government. This concern will be addressed through targeted support programs for needy households. Existing subsidy program is not sufficient in terms of funding nor is it effective in identifying recipients of the subsidy.

In 2007 MEM has proposed the concept of a better-targeted support program for low-income households. In the near future and in collaboration with the MEF and the ERO, MEM will advise and support Ministry of Labor and Social Welfare (MLSW) to develop and put forward a well-targeted comprehensive support program for needy households.

11.2.10 Demand Side Management' Program

In order to contain unsustainable increase of energy demand and promote energy efficiency and saving, MEM will coordinate development of a National Demand Side Management (DSM) Program. This program will include a set of relevant measures to discourage inefficient use of energy and to promote energy efficiency and load shifting.

Objectives of this Program will include among other: (i) load reduction, (ii) load shifting, and (iii) peak-clipping (reducing peak demand levels) and valley-filling (increasing base demand levels, usually by shifting peak demand to periods of low demand), and (iv) controlling load growth.

The aim of development of this Program is also involvement of utilities, energy suppliers or private companies in offering DSM of value-added services to energy customers so that they receive maximum value from their energy expenditures. DSM services will need to include everything from efficiency-related planning assistance for new construction to sourcing of alternative suppliers to consulting on conservation measures and full management of energy efficiency interventions.

11.2.11 Kosovo Budget support for the energy sector

Considering projected demand growth, high power import prices, and the lead time until the planned Kosova e Re plant is commissioned (around 2015), it can be concluded that, in the interim, KEK JSC needs to finance the following critical investments and expenditures to:

- (i) develop the Sibovc South West mine so as to sustain coal supplies after exhaustion of the remaining coal reserves in the Mirash and Bardh mines;
- (ii) enhance capacity and reliability of the existing generation facilities in TC Kosova A²⁵ and TC Kosova B units as necessary in order to keep them operational;

²⁵ The focus will be on the B units, which consume less fuel and produce fewer emissions than the A units, yet operate below design capacity. With proper investment and maintenance, Kosovo B should be able to operate more reliably and at increased capacity through 2024. Units A3, A4 and A5 will be maintained to provide service until 2017, when Kosovo A is expected to be closed down under the EU's Large Combustion Plant Directive.

- (iii) some environmental upgrades of Kosova A and its ash disposal system and facilities; and
- (iv) electric power imports as necessary at least through mid-2010.

However, KEK JSC's poor financial situation and weak performance mean that it is not capable of arranging financing for more than a small part of these critical expenditures. Hence, the Government will need to step in as appropriate to provide part or all of the resources required for the above.

11.3 District heating

Policy to be implemented

The Law on District Heating sets out the terms and standards for carrying out activities of thermal energy generation, distribution and supply for heating purposes, as well as the terms of operation for district heating companies and other relevant entities. It also enables access to the network and guides organization of the heating market.

Measures to be undertaken

Measures to be undertaken for the development of existing and new district heating systems include:

- Development of favorable business conditions and promotion of implementation of project for heat supply of district heating in Prishtina through cogeneration at TPP Kosova B;
- Guiding municipalities towards engagement of the private sector in developing and operation of district heating companies, including promoting technological upgrade and environmental safeguards;
- Promotion of combined heat and power generation throughout Kosovo;
- Support of initiatives for the construction of new district heating systems in all regional centers of Kosovo.

11.4 Natural gas

Policy to be implemented

The World Bank/KfW *South East Europe Gasification Study* (October 2007) has looked into the economics of bringing gas into Kosovo. It concluded that it may be viable to supply industrial and commercial load and build gas distribution networks in Prishtina and Mitrovica.

Government policy is to promote and support Kosovo's connection in regional gas supply projects, such as the Gas Ring Project for Southeast Europe (see Figure 32), as well as to support private sector investment in construction of local network for gas consumption by households, services, and the industrial sectors.

In this regard, depending on prospects for the development of such regional gas projects in the Southeast Europe in framework of the EnCT, the Government remains committed to introduction of a legal and regulative framework for the development of the natural gas

sector through private sector investments. To this end, the Draft-Law on Natural Gas has been prepared in compliance with respective European directives.

Measures to be undertaken

In this context, in the short term period the Government will:

1. Facilitate adoption of the proposed draft law by the Kosovo Assembly before end of 2009; and
2. Clarify ownership of the existing town gas pipeline and the right of way for that pipeline.

Figure 32: Natural Gas Ring for Western Balkans



Source: Regional Gasification Study, Final Draft report, October 2007, Economic Consulting Associates

ERO, also as gas sector regulatory body, will timely prepare regulatory framework for this sector, which will entirely be in compliance with EU Directives and EnCT requirements.

11.5 Oil and its derivatives

Policy to be implemented

It is necessary to complete and strengthen regulatory framework for transportation, handling of liquid fuels, and operation liquid fuel market in Kosovo. Use of biofuels is an EnCT requirement. Thus, the Government will adopt respective draft decision prepared by MEM.

Parallel to the energy policies on rational use of energy and improvement of energy efficiency in general in Kosovo, measures will be taken in order to stimulate consumers for a rational use of liquid fuels .

Increased use of Liquefied Petroleum Gas (LPG) is a priority as it contributes to diversification of energy sources available to consumers. This would create conditions for substantial reduction of electricity used for heating, cooking and other services.

Establishing compulsory oil stock reserves in the country is one of the goals of this strategy. It aims to secure sufficient and sustainable supply of oil derivatives, without extreme price fluctuations in the local market. Therefore, MEM will propose measures for developing a long term approach for establishing oil stock reserves in compliance with respective EU directives. MEM will also support the Ministry of Trade and Industry (MTI) in preparing a program with mid-term measures for establishing compulsory oil stock reserves in line with the respective EU directive.

Measures to be undertaken

Measures for development of liquid fuel sector will include:

- Regulation, by administrative instructions, of the Liquefied Petroleum Gas (LPG) sector, including development and implementation of a promoting policy for LPG wider market penetration;
- Implementation of general provisions on health, safety and environment, which will be applied by organizations and individuals engaged in oil derivatives business;
- Promotion of railroad transportation for goods and passengers in the entire Kosovo railroad network, as an alternative to the road transportation;
- Promotion of the use of biofuels; and
- Preparation of the plan for achieving the compulsory oil reserves in line with EU directives.

11.6. Energy efficiency and renewable energy sources

Policy for implementation

Under provisions of the Energy Community Treaty, Kosovo is committed to increase the share of renewable energy in its generation portfolio. The Government has set as a target for Kosovo to reach a renewable share of 7% by 2016. Energy efficiency is an important additional tool to achieve that target. It would also reduce greenhouse gas emissions, help consumers reduce their energy bills, and reduce electricity demand at least in relative terms. Increasing the share of renewable energy is clearly important for Kosovo in helping it to diversify away from its excessive reliance on lignite-fired generating capacity.

Meeting forecasts for energy generation from renewable energy sources (RES) is a long-term objective also related to fulfilling EnCT obligations. Increasing energy efficiency (EE) and using RES will contribute in achieving three goals of the country's energy policy: support general economic development; enhance security of energy supply, and protect the environment.

Completion of the legal and regulatory framework as well as enhancement of the institutional capacities in the areas of EE and RES are prerequisites for the development of the EE, following best practices of the countries in the region and beyond. Adoption of the Law on Energy Efficiency, implementation of governmental incentive measures through its fiscal policy as well as promotion of involvement of the public and private sector in the application of energy efficiency measures are very important activities of this process. In order to achieve already set indicative long-term targets on utilization of renewable energy

resources (RES), apart of a package of incentive fiscal measures, ERO will develop and adopt incentive tariffs for utilization of all types of RES and create a system for green certificates.

Completion of legal and regulatory framework for EE and RES will include further transposition of EE and RES European Directives, as well as adoption of the Law on Energy Efficiency. Implementation of this law envisages establishment of Kosovo Agency for Energy Efficiency and establishment of an EE Fund. The Law on Energy Efficiency will provide for functions, roles and responsibilities of the agency. Implementation of concrete projects imposes the need for establishing the Fund, which, according to this Law, will be mainly funded by the Government and various foreign donations.

Concrete incentive fiscal measures for EE and RES, through the fiscal policy, will enable exemptions from customs duties and other charges for efficient technologies. Therefore, MEM and MEF will jointly strive to provide a program of fiscal incentives for supporting EE and RES, aiming at establishing a favorable market to promote energy efficiency and increase use of renewable energy sources.

Preparation of a supporting and incentivizing program for attraction of private sector investments in development of EE and RES projects, in line with the European approaches, is another important measure that will be undertaken. It will aim to enable technical assistance for developing feasibility studies and detailed technical designs for projects on improvements of energy efficiency and development of renewable energy sources (mainly small hydropower plants), as well as to establish a guarantee fund for loans that investors would receive from local banks for implementation of EE and RES projects. The goal is to attract private capital for sustainable development of EE and RES, as a main measure for achieving targets in line with respective European EE and RES directives.

Measures to be undertaken

To implement the above policy and measures the Government will:

1. In 2009 prepare a National Energy Efficiency Action Plan as scheduled by the EnCT Energy Efficiency Task Force;
2. Transpose the EU's Energy Services Directive into national law and regulations during 2009-2010 period;
3. Complete the existing legal and regulatory framework on energy efficiency and renewables in line with the EnCT requirements, including the Law on Energy Efficiency;
4. Define and adopt a strategy for the heating sector based on the Kosovo Heat Market Study (2007), including the option for connecting Prishtina's district heating system to Kosovo B TPP;
5. Review existing policies and adopt incentive measures that support renewable energy development;
6. Concession development of Zhur hydropower plant, subject to satisfactory feasibility studies, environmental and social safeguards and public consultation;
7. Identify and pre-assess, during 2009-2010 all major small hydropower potentials available in Kosovo;

8. By the end of 2011, concession for development with private sector investment, through transparent and competitive tendering procedure, already identified small hydropower plants, including those which will be identified and pre-assessed during 2009 – 2010;
9. Develop and enforce fiscal incentives to promote energy efficiency and renewable energy technologies by the end of 2009;
10. Develop a comprehensive program to promote private sector investment in energy efficiency and renewable energy projects by the end of 2010; and
11. Ratify the United Nations Framework Climate Change Convention and the Kyoto Protocol, or their successors, as soon as it is feasible.

11.7 Ensuring standards for environment protection and social issues

Kosovo is committed to further develop a complete legal and regulatory framework for protecting the environment, in full compliance with the environment *acquis* and European norms and standards. Enforcement of this legal and regulatory framework is the major challenge for the future, because, on the one hand, environment pollution monitoring systems hardly exist and, on the other hand, capacities of entities tasked with law enforcement are still limited.

Kosovo recognizes and shall respect the EnCT obligations for implementation of the environmental *acquis* as it relates to the energy sector. For this reason, a separate plan of relevant measures and activities is prepared and being implemented. Difficulties are being faced in fundraising for establishing environmental monitoring systems.

Environmental Safeguards

Kosovo is committed to adopting and implementing EU environmental standards for all new investments in the energy sector. The Government will:

1. Complete environmental legislation and enhance institutional capabilities in permitting, monitoring and enforcement;
2. Adopt a Strategic Environmental and Social Assessment (SESA) framework, including conducting public consultation, which will help determine strategic options and inform development plans for future mining and power projects;
3. Strengthen legislation and institutional structures for regulating environmental impacts for future mining and power projects; and
4. Strengthen water resource management in line with the Kosovo Water Law and applicable EU Water Framework Directives in order to ensure reliable water supply to the residential, industrial, energy and agricultural sectors.

Air and Water Pollution Reduction (Kosovo A)

Due to old and poorly functioning equipment, Kosovo A emits high amounts of particles into the air and pollutes surface water. The Government will support KEK JSC to:

1. By 2010 repair and make functional the ash handling and disposal system and the wastewater treatment system for the entire plant, including conversion from dry to hydraulic ash transport and disposal; and
2. Install an environmental monitoring system.

Social Safeguards

The Government is committed to addressing social issues resulting from mine development in a manner consistent with international best practices. Social policies on community consultation, participation and resettlement are being formulated to bring them in line with the EU regulations, and to ensure that impact on people affected by sector development is adequately addressed. The Government will:

1. Develop and adopt a social policy framework governing all aspects of resettlement;
2. Commence in 2009 land reclamation efforts by reshaping and re-cultivating sites covered with overburden material from the existing lignite mines; and
3. Develop suitable policies to ensure transparent and equitable distribution of any reclaimed land, including policies for the resettlement of affected households and communities.

11.8 Introduction of a modern energy statistics system

Data collection and processing system, which currently functions in MEM should be in full compliance with the Eurostat system as far as it concerns well-defined methods for data collection and processing regarding consumption and supply of energy resources.

Such energy statistics system aims to provide a complete overview for the Government, investors and other stakeholders about the country's real energy situation, as it regards consumption/energy market on one hand, and on the other hand energy potentials in order to enable their rational.

In the short-term period, a proper system for collection, processing and verification of complete and reliable data for energy generated and consumed for each sector will be established. Further, a regional energy database system will be established in order to enable assessments of energy situation at the regional level, which will better support the regional development process.

12. European integrations and international cooperation

European integrations, as primary priority of the Kosovo Government also for the energy sector, will continue to be accomplished through:

- EU Stabilization Tracking Mechanism Process (STM),
- Participation in the Energy Community (EnC), and
- Development of bilateral cooperation.

MEM will continue with the coordination of energy sector activities for implementation of the EU Stabilization Tracking Mechanism. EC annual reports on Kosovo also pay special attention to the energy sector. They identify progress and challenges for the future. Energy sector institutions will continuously address identified challenges. MEM will continue taking necessary measures so that concrete action plans are prepared and implemented in order to overcome each and every challenge.

Fulfilling the EnCT obligations will remain a top priority for the Government. MEM will intensify its efforts to fulfill these obligations through timely implementation of all adopted plans and roadmaps for implementation of a number of EU Directives, as envisaged by the EnC.

In coordinating and leading the processes of European Integration and participation in the EnC, MEM will continue cooperation with all the relevant actors of the energy sector members of the Energy Working Sub-Group, including coordination with the Agency for Development Coordination and European Integration.

The Government considers that international bilateral cooperation is of great importance to Kosovo. This cooperation is particularly important for the energy sector, since it aims not only for integration of energy markets, but also for enhancement of mutual understanding and expansion of energy exchanges which are essential for enhancing the security of energy supply, at times when the energy infrastructures in the countries of the region are not sufficiently developed to allow for satisfactory and unrestrained energy exchanges.

Bilateral cooperation will also seek to exchange experiences and streamline approaches on relevant issues. In the medium term period, MEM aims to establish energy sector bilateral cooperation agreements with Macedonia, Montenegro and Bulgaria.

13. Enhancing local institutional capacity

Building of policy-making, regulatory and management capacities is another important challenge for Kosovo, which is also related to and directly affecting implementation of this Revised Energy Strategy. The Government will annually allocate budget funds for development of human resources capacities and will encourage and support the energy and mining regulatory bodies to do the same. However, budgetary support alone is not sufficient. Thus, support is required and expected to be mobilized from international donors as well. This assistance needs to focus on comprehensive capacity building in the areas of policy-making, economic regulation of the energy sector, and management of energy utilities. This assistance has been present until now, but it should be intensified as the current challenges of the energy sector are greater than before.

Also capacity building in the areas of research and application of new technologies require consideration and support. The Government is engaged in addressing this issue and will support research and scientific institutions and universities in order to focus their efforts in developing research capacities and familiarizing with new technologies and applying them in Kosovo.

14. Measures for implementation of the Energy Strategy

For implementing this Strategy, the Energy Strategy Implementation Program (ESIP) for the period 2009-2011 will be developed soon. This program will include:

- Measures and projects (revised as needed) which were not funded and implemented during the period 2006-2008, and are considered as needed and priority in this revised energy strategy;
- Measures and projects identified and included in this revised energy strategy for the short-to-mid-term period;
- Concrete proposals for ways of financing of each measure, program or project included in the ESIP (including funding from MTEF for 2009-2011 or identified donors); and
- A measure for the institutionalization of local inter-institutional cooperation for the implementation of ESIP 2009-2011.

ESIP 2009-2011 also will consider with particular attention projects presented at the Donors' Conference for Kosovo, held in Brussels on 11 July 2008. ESIP will be consulted with MEF main donors in advance so that the best possible funding could be achieved during the 3-year period 2009-2011.

MEM will coordinate the ESIP 2009-2011 development. ESIP 2009-2011 will be submitted to the Kosovo Government.