Statement of Security of Supply for Kosovo
(Electricity and Gas - Updated)

May 2009
# Statement of Security of Supply for Kosovo (Electricity and Gas - Updated)

## Table of Contents

**Executive Summary**

1. Introduction to Statement of Security of Supply (SoSSoK)
   1.1 Legal Background
   1.2 Experience in the European Union
   1.3 Structure of the SoSSoK Statement for Kosovo
   1.4 Defining Security of Supply

2. Situation of supply and demand balance in the electricity sector in Kosovo
   2.1 Situation until 2008
   2.2 Current levels of electricity peak demand and expectations for the medium term period
   2.3 Currently available generation capacity and generation forecast
   2.4 Forthcoming generation investment for the next three years
   2.5 Current generation fuel mix and expected developments
   2.6 Actual investments commissioned or retired during 2008
   2.7 Description of the role of regulatory or other authorities
   2.8 Authorisation criteria for new generation investments and the role of long term planning
   2.9 Implicit and explicit incentives to build capacity
   2.10 Progress in major infrastructure projects
   2.11 Interconnection Infrastructure

3. Gas
   3.1 General description
   3.2 Current levels of gas consumption and expectations for the next three years
   3.3 Currently available production and import capacity
   3.4 Forthcoming production and import investment for the next three years
   3.5 Description of the role of regulatory or other authorities
   3.6 Progress in major infrastructure projects
Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DH</td>
<td>District Heating</td>
</tr>
<tr>
<td>ECS</td>
<td>Energy Community Secretariat</td>
</tr>
<tr>
<td>EnC Treaty</td>
<td>Energy Community Treaty</td>
</tr>
<tr>
<td>ERGEG</td>
<td>European Regulators Group for Electricity &amp; Gas</td>
</tr>
<tr>
<td>ERO</td>
<td>Energy Regulatory Office</td>
</tr>
<tr>
<td>ESTAP</td>
<td>Energy Sector Technical Assistance Project</td>
</tr>
<tr>
<td>HPP</td>
<td>Hydro power plant</td>
</tr>
<tr>
<td>KfW</td>
<td>Kreditanstalt für Wiederaufbau</td>
</tr>
<tr>
<td>IPCC</td>
<td>Inter-governmental Panel for Climate Change</td>
</tr>
<tr>
<td>GIS</td>
<td>Generation Investment Study</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>ICMM</td>
<td>Independent Commission of Mines and Minerals</td>
</tr>
<tr>
<td>KEK sh.a. (JSC)</td>
<td>Korporata Energjetike e Kosovës (Kosovo Electro-Energy Corporation)</td>
</tr>
<tr>
<td>KOSTT sh.a. (JSC)</td>
<td>Kosovo Transmission and Market System Operator</td>
</tr>
<tr>
<td>LPG</td>
<td>Liquefied petroleum gas</td>
</tr>
<tr>
<td>MEM</td>
<td>Ministry of Energy and Mining</td>
</tr>
<tr>
<td>MTI</td>
<td>Ministry of Trade and Industry</td>
</tr>
<tr>
<td>PHGLG</td>
<td>Permanent High Level Group of the Energy Community</td>
</tr>
<tr>
<td>SoSSoK</td>
<td>Security of Supply Statement of Kosovo</td>
</tr>
<tr>
<td>TPP</td>
<td>Thermal Power Plant</td>
</tr>
</tbody>
</table>
Executive Summary

The Ministry of Energy and Mining (MEM) has developed this Statement of Security of Supply of Kosovo (SoSSoK) in May 2007, following the recommendations of the Energy Community Secretariat ECS. MEM updated this SoSSoK in May 2009. It is designed to help with the monitoring of the security of electricity and gas supply. This has been done to satisfy both EC relevant Directives and EnC Treaty requirements, as well as to enable Kosovo to track these crucial areas, which are key to its future economic development.

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

Furthermore, article 4 of the Directive 2003/54/EC and article 5 of the Directive 2003/55/EC require statements on monitoring of Security of Supply in the electricity and gas markets, in particular of:

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

The current situation of electricity supply in Kosovo is not satisfactory. Low payment collection rates as a consequence of illegal use of electricity leads to its extensive use for heating, and limited availability of power generation capacities do not allow providing a steady electricity supply to all consumers. Therefore, the available power is distributed as actually possible, and customers are cut-off in load-shedding regime as necessary. To increase the payment discipline, areas with good collection rate A are supplied with preference, whereas those with unsatisfactory collection rate in C areas are subject to cut-offs from supply many hours daily. The application of restricted supply regime is bringing about only around 8% of electricity saving. KEK sh.a., with strong support by the Government, is implementing a comprehensive campaign to increase billing and collection since August 2008. Results are very promising.

More than 95% of power generation in Kosovo is based in two lignite fired power plants of KEK sh.a.: Kosovo A (5 units) and Kosovo B (2 units). Total installed capacity of both plants is 1,478 MW, which could have been sufficient for fulfillment of current Kosovo’s demand for electricity. However, due to age, improper maintenance and operation during the years before and after the war and due to war damages, the reliability and net generation capacity of these plants have been seriously compromised.

Power generation in the near future 2009 - 2011 will focus on meeting as best as possible the demand of consumers in Kosovo with stable, uninterrupted...
electricity supply with competitive prices. Imports will be required during this period. In order to meet the local growing demand and potentially export electricity surpluses, investments in the following projects are planned:

- Development of new units in a new TPP “New Kosova” with installed capacity of up to 2,000 MW;
- Construction of HPP Zhur; and
- Construction of small HPPs by private investors.

The lignite resources in the two existing lignite mines (Bardh and Mirash) feeding Kosovo A and B will be depleted by 2010/2011. In order to maintain the lignite production at required levels Government provided KEK sh.a. with more than €6 million to deviate the Sitnica riverbed, so facilitating exploitation of lignite from the Sitnica area. This measure will bridge the reducing of lignite production from Bardh and Mirash and meet the gap until a new lignite mining exploitation in Sibovc Southwest starts by mid-2010.

The full development of the new lignite mine in Sibovc will go in parallel with the Project for the TPP New Kosova. The Southwest Sibovc mine and that of the Sibovc as a whole will have enough reserves to accommodate the present generating capacity of TTPs Kosovo A and B, and the 2,000 MW additional capacity of TPP New Kosova for a period of 40 years.

Regarding development of New Kosova Project, it is expected that a private investor will be selected by end of 2009. This project comprises full development of the new mine in Sibovc and construction of new generation capacities of up to 2,000 MW, including transmission connection line.
1. Introduction to Statement of Security of Supply (SoSSoK)

Following the recommendations of the ECS\(^1\), the Ministry of Energy and Mining (MEM) developed this Statement of Security of Supply of Kosovo (SoSSoK) in May 2007. Following the conclusions of the PHLG meeting held on 17 March 2009, MEM updated this report in May 2009. It is designed to help with the monitoring of the security of electricity and gas supply. This has been done to satisfy both EC relevant Directives and Treaty requirements, as well as to enable Kosovo to track these crucial areas, which are key to its future economic development. Statistical data are based on the year 2008.

1.1 Legal Background

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

Furthermore, article 4 of the Directive 2003/54/EC and article 5 of the Directive 2003/55/EC require statements on monitoring of Security of Supply in the electricity and gas markets, in particular of:

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

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

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

1.2 Experience in the European Union

In 2005, under the reporting requirement in Directives 2003/54/EC and 2003/55/EC, the European Commission assisted by the European Regulators Group for electricity and gas (ERGEG), developed the structure of the so-called “National reports”. The purpose of these is to gather from each EU member country the necessary information to prepare reports that are the responsibility of the European Commission under the Directives.

1.3 Structure of the SoSSoK Statement for Kosovo

---

\(^1\) Draft Structure for the Statements on Monitoring of Security of Supply, ECS, 09.10.2006
This updated SoSSoK follows the structure proposed by the ECS in its communication of 09.10.2006, which limits the scope to electricity and gas sectors only, as per the relevant directives 2003/54/EC and 2003/55/EC.

**Electricity Directive 2003/54/EC, Article 4, requires:**

a) A general description of the ongoing supply-demand situation with the following indicators included, reference should be made to the Transmission System Operator (TSO) projections where available:
   - Current levels of electricity peak demand (MW) and expectations for the next three years (i.e. 2009-2011)
   - Currently available generation capacity
   - Forthcoming generation investment for the next three years:
     - authorised
     - actually in process of construction
   - Current generation fuel mix and expected developments
   - Actual investments commissioned or retired during 2008 including:
     - net new coal/oil capacity (GW)
     - net new gas capacity (GW)
     - net new renewables capacity (GW)
     - net new cogeneration (CHP) capacity (GW)
     - net new other capacity (GW)

b) A description of the role of regulatory or other authorities should also be included, specifically:
   - Authorisation criteria for new generation investments and the role of long term planning, and
   - Implicit and explicit incentives to build capacity (e.g. explicit payments, capacity options, design of balancing mechanism).

c) Finally the regulator should report on any progress in major infrastructure projects and in particular important interconnection projects between or within Member States, including the regulatory framework under which they will operate.

d) The TSO processes for planning new network build should be described, and how they are integrated with congestion management and the functioning of wholesale markets.

**Gas Directive 2003/55/EC, Article 5, requires:**

a) A general description of the ongoing supply-demand situation with the following indicators included, reference should be made to TSO projections where available:
   - Current levels of gas consumption (bcm) and expectations for the next three years (i.e. 2009-2011)
   - Currently available production and import capacity (bcm)
• Forthcoming production and import investment for the next three years:
  – authorised
  – actually in process of construction

b) A description of the role of regulatory or other authorities should also be included as described in Directive 2004/67 specifically:
• requirements relating to supplier of last resort
• incentives to increase production/import capacity or any type
• requirements relating to the availability of storage for public service reasons.

c) Finally the regulator should report on any progress in major infrastructure projects and in particular important interconnection projects between or within Member States, including the regulatory framework under which they will operate.

1.4 Defining Security of Supply

Despite the widespread use and discussion of Security of Supply (SoS) there is no agreed definition of this important parameter. However, there are a number of perspectives from which the subject can be viewed. Because of the large number of related issues encompassed by the term, and the lack of a single analytical framework, SoS has tended to be an overused and misunderstood term. However, this has not limited its use or focus in energy policy.

Based on international experience to date, a country’s energy security policy generally comprises measures taken to reduce the risks of supply disruptions below a certain tolerable level. Such measures should be balanced to ensure that a supply of affordable energy is available to meet demand. Security of energy supply encompasses both issues of quantity and price. However, time is also a key parameter, as a sudden price hike will have very different effects on both society and the economy compared to those of a long-term price increase. Insecurity in energy supply originates in the risks related to the scarcity and uneven geographical distribution of primary fuels and to the operational reliability of energy systems that ensure services are delivered to end users.

Kosovo’s Law on Energy states that ‘Security of Supply means technical safety as well as assurance of an adequate amount of energy to serve the needs of the people of Kosovo’. It is almost impossible to capture fully the essence of security of supply in a single sentence, as particular areas like electricity system security may have specific definitions.

For example, the Commission for Energy Regulation (CER) in Ireland in a recent publication states that it “…refers to the ability of the electricity system to provide end-users with a sustained standard of electricity supply. This relates to the reliability of the electricity system (in terms of its tolerance for shocks/outrages in maintaining electricity supplies and the management of the system in overcoming difficulties/issues) and in terms of the adequacy of infrastructure (generation capacity, transmission capacity)”. Yet even this...
definition requires a number of varied metrics ranging from issues of engineering to investment to emergency management.

Referring to the difficulty with SoS definition, Jacques de Jung noted that in the EU, "...on the key issue of security of supply, little had been done to date and nothing comprehensive [in terms of policy, data analysis, etc.]. The resulting imbalance [compared to environmental and competitiveness] in policy [has] left the EU without any guarantees in its system, and exposed [it] to a long-term supply risk.

One consideration in security of supply is that the reliability and adequacy measures are sufficient such that it is agreed that it is not feasible (either physically or economically) to provide a 100% secure electricity system to the nation and rather, a specific level of security is provided so that what is deemed to be a reasonable standard of supply is provided to end-users.

In terms of delivery of electricity supplies, the following are the key input components:

<table>
<thead>
<tr>
<th>Electricity Security of Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
</tr>
<tr>
<td>Diversity</td>
</tr>
<tr>
<td>Security</td>
</tr>
</tbody>
</table>

In the case of Kosovo, for the period 2009-2011, the definition of the SoS (SoSSoS)K would focus on simultaneously performing the following activities:

- Maintaining and potentially increasing the generation (including development of small hydropower generation) and network capacities so they meet the electricity demand,
- Controlling fully the use of electricity by increasing billing and the collection rate above 90% of billed amount of electricity, which will cause substantial saving of electricity, and
- Establishing gradually a liquid electricity market where prices reflect real costs, provide economic signals to efficient use of electricity, enhance security of supply, and finally eliminate load shedding.

2. Situation of supply and demand balance in the electricity sector in Kosovo

The current situation of electricity supply in Kosovo is not satisfactory. Low payment collection rates as a consequence of illegal use of electricity leads to its extensive use for heating, and limited availability of power generation capacities do not allow providing a steady electricity supply to all consumers. Therefore, the available power is distributed as actually possible, and customers are cut-off in load-shedding regime as necessary. To increase the payment discipline, areas with good collection rate A are supplied with preference, whereas those with unsatisfactory collection rate in C areas are subject to cut-offs from supply many hours daily. In such a situation it remains difficult to determine the "real" balance of supply and demand. The
application of restricted supply regime is bringing about only around 8% of electricity saving.

KEK sh.a., with strong support by the Government, is implementing a comprehensive campaign to increase billing and collection since August 2008. Results are very promising.

2.1 Situation until 2008

a. Electricity generation

More than 95% of power generation in Kosovo is based in two lignite fired power plants of KEK sh.a.: Kosovo A (5 units) and Kosovo B (2 units). Total installed capacity of both plants is 1,478 MW, which could have been sufficient for fulfillment of current Kosovo’s demand for electricity. However, due to age, improper maintenance and operation during the years before and after the war and due to war damages, the reliability and net generation capacity of these plants have been seriously compromised.

The only other important power generation plant outside of KEK is the HPP Gazivoda/Ujmani (2 units of 17.5 MW each), administrated by the water company Hydrosystem Ibër-Lepenc. In November 2005, the new HPP “Lumbardi” began its operation. This plant is located in the South-Eastern part of Kosovo, around 15 km from the town of Deçan. It is owned by KEK and it is operated by Triangle General Contractors Inc. (TGC) under a 20 years lease agreement and PPA with KEK (“feed-in” price). In this project around € 6 million was invested for refurbishment increasing its capacity from 7.35 MW to 8.3 MW. It is worth noticing that this is the first private project in Kosovo’s energy sector financed by the “non recourse” method.

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 needs to continue remain under Government care and support through institutional actions in its effort to overcome the present situation. These are prerequisites not only for the stabilization of the Kosovo electricity system functioning, but also for the KEK JSC’s further unbundling into new separate stable business entities.

b. Electricity demand

The period 2000-2008 has been characterised by substantial growth in electricity demand in Kosovo. Annual average growth is approximately 8%. Total net energy demand imposed to the system for 2008 was approximately 4,802 TWh with the winter peak demand reaching 967 MW, even though this energy and peak demand have been registered with the load shedding regime.

In the case of Kosovo this average growth of electricity consumption can be attributed to the very low payments of the electricity bills and the weak enforcement tools by the KEK sh.a. to collect the payments. Commercial losses remain high with a slow decrease trend over the last year: 29.18% in
2006, 30.31% in 2007, and around 26.18% in 2008. Situation with collections is changing slowly but steadily in the positive direction lately.

Electricity demand growth rate in Kosovo could be much higher, if the potential increase of demand by the industrial sector would be considered, which currently represents only a small percentage of total electricity consumed. However, industrial activities may pick up substantially from 2011, particularly after the global economic crisis will be over.

A load shedding regime was applied during the year 2008. During winter the so called 4:2 regime (4 hours with; 2 without electricity) was applied, whereas there has been even worse applied regimes (3:3) in some cases during very low temperatures and when imports of electricity was not available. During summer the regime was 5:1 and 24:0 when there was low demand, particularly during night.


For adequate understanding of the available statistical data on electricity supply the trends in the total energy supply in Kosovo should be considered. The MEM has compiled energy balances for the years 2003 through 2008 according to the Eurostat format and definitions.

**Electricity production after year 2000**

Based on some important studies conducted after the year 2000 and analyses of energy balances prepared by MEM which consider the characteristics and the structure of Kosovo’s power system, power grid losses and net electricity imported, it has resulted that, for the period 2000-2007, electricity generation from each power plant has been as presented in Figure 1; whereas the percentile contribution of each power plants in covering the total electricity consumption, for the same period, is presented in Figure 2.
* 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

**Electricity supply after year 2000**

During the period 2000-2007, 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 3 and 4) is visibly higher than the demand for electricity predicted in World Bank’s ESTAP I in year 2002, where the relative annual electricity consumption was anticipated at 5% for the Medium Growth Demand Scenario.

![Figure 3: Billing, direct consumption and system losses (GWh)](image1)

![Figure 4: Billing, direct consumption and system losses (%)](image2)

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 plant units;
- Revitalization of TPP Kosovo A units was not conducted as planned according to the 2005 study, consequently making their revitalization in the future unreasonable;
- There have been limitations caused by insufficient power transmission and distribution capacities during peak loads (especially during winters);
- There has been implemented no proper demand side management of electricity consumption;
- Collection of billed 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 the recent years covers 5-10 percent of the consumption in the recent years.

The key problems identified and the potential trends for future energy supplies in Kosovo are:

- Electricity consumption growth in the transition period lead to an increase in non-technical losses (illegal use) and a reduction in security of supply.
- Lack of alternative energy sources (e.g. natural gas) and low electricity prices (for many consumers the price was zero, since electricity consumed by them has not been paid for years) has resulted in significant usage of electricity by the residential sector (households/apartments) and the service sector (communications and space heating).
- Relatively high prices of other energy sources (e.g. fuel oil), which have to be paid for at delivery, are pushing consumers to focus largely on using electricity.
- The increase of petrol and diesel consumption in transport has contributed to the growth of the overall energy imports into Kosovo.

2.2 Current levels of electricity peak demand and expectations for the medium term period

a. Peak demand in 2008

Adding the peak load observed in the substations in all regions of Kosovo, the total peak demand in 2008 was 967 MW. Large industries (eligible customers) accounted for 88 MW, and transmission losses for 42 MW.

b. Development of the peak demand for the period 2009-2018

In developing its energy demand forecasts MEM has considered two possible scenarios of the Gross Domestic Production (GDP) growth rate for the period 2009-2018 as shown in Table 1.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>2009-2010</th>
<th>2011-2014</th>
<th>2015-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>3.20</td>
<td>3.10</td>
<td>3.00</td>
</tr>
<tr>
<td>High</td>
<td>6.20</td>
<td>5.29</td>
<td>5.00</td>
</tr>
</tbody>
</table>

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 this 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 2.

Table 3: Electricity demand and peak loads for the period 2009 - 2018

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MDS</td>
<td>4994</td>
<td>5226</td>
<td>5418</td>
<td>5621</td>
<td>5834</td>
<td>6059</td>
<td>6295</td>
<td>6500</td>
<td>6715</td>
<td>6939</td>
</tr>
<tr>
<td>HDS</td>
<td>5299</td>
<td>5514</td>
<td>5713</td>
<td>5929</td>
<td>6164</td>
<td>6422</td>
<td>6662</td>
<td>6898</td>
<td>7153</td>
<td>7431</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MDS</td>
<td>1130</td>
<td>1174</td>
<td>1212</td>
<td>1251</td>
<td>1297</td>
<td>1343</td>
<td>1403</td>
<td>1449</td>
<td>1506</td>
<td>1543</td>
</tr>
<tr>
<td>HDS</td>
<td>1210</td>
<td>1257</td>
<td>1302</td>
<td>1349</td>
<td>1389</td>
<td>1434</td>
<td>1515</td>
<td>1566</td>
<td>1618</td>
<td>1671</td>
</tr>
</tbody>
</table>

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 and 128 MW. It is overwhelmingly evident that elimination of commercial losses and payment of consumed electricity requires a very serious approach and handling.

2.3 Currently available generation capacity and generation forecast

a. Available generation capacities

Table 3 below shows a summary of data on power generation capacities in Kosovo.

Table 3: Existing thermopower generation capacities in Kosovo

<table>
<thead>
<tr>
<th>Power plant unit</th>
<th>Power plant unit capacity (MW)</th>
<th>Fuel type</th>
<th>Year of commissioning (age)</th>
</tr>
</thead>
</table>

Ministry of Energy and Mining
## Installed Net Net available

<table>
<thead>
<tr>
<th></th>
<th>Installed</th>
<th>Net</th>
<th>Net available</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TPP Kosova A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit A1</td>
<td>65</td>
<td>58</td>
<td>0</td>
<td>Lignite/Oil 1962 (46)</td>
</tr>
<tr>
<td>Unit A2</td>
<td>125</td>
<td>113</td>
<td>0</td>
<td>Lignite/Oil 1964 (44)</td>
</tr>
<tr>
<td>Unit A3</td>
<td>200</td>
<td>182</td>
<td>110-120</td>
<td>Lignite/Oil 1970 (38)</td>
</tr>
<tr>
<td>Unit A4</td>
<td>200</td>
<td>182</td>
<td>110-120</td>
<td>Lignite/Oil 1971 (37)</td>
</tr>
<tr>
<td>Unit A5</td>
<td>210</td>
<td>187</td>
<td>125-130</td>
<td>Lignite/Oil 1975 (33)</td>
</tr>
<tr>
<td><strong>TPP Kosova B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit B1</td>
<td>339</td>
<td>309</td>
<td>240-260</td>
<td>Lignite/Residual fuel oil 1983 (25)</td>
</tr>
</tbody>
</table>

Source: KEK JSC (October 2008)

Units A₁ and A₂, are out of operation with an undefined status yet; whereas urgent 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; but they still remain unreliable, regardless of the capital repairs. In TPP Kosova B, production capacities are: unit B₁ - 240 MW and unit B₂ - 270 MW. 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.

Further, HPP Gazivoda/Ujmani (2 units of 17.5 MW each), and the small run-of-river HPP “Lumbardhi” with 8.3 MW of installed capacity will continue their operations in the foreseeable future.

### b. Electricity generation forecast in Kosovo for the period 2009-2018

Power generation forecast for the period 2009-2018 is prepared based on expected power generation from the existing power plants, including continued operation of several units of TPP-Kosova A until 2017, existing hydropower plants and new ones planned to be built, as well as production from the TPP New Kosova.

Meeting of electricity demand is envisaged as follows:
Statement of Security of Supply for Kosovo (Electricity and Gas - Updated)

(i) Power generation from TPP Kosova A, operating with A3, A4 and A5 units. This requires investments for maintenance and overhauls, thus enabling these units to operate until end of 2017, when they will be decommissioned in line with the European Directive for Large Combustion Plants.

(ii) Power generation from TPP Kosova B, operating with B1 and B2 units. It is anticipated that these two units will be rehabilitated during the period 2013 - 2014, including carryout of investments required to meet emission standards required by EU Directive for Large Combustion Plants. These units will continue their commercial operation until 2027 - 2030.

(iii) Power generation from Ujmani Hydro Power Plant, which with maintenance and rehabilitation could continue its commercial operations for a long-term period.

(iv) Power generation from the small Lumbardhi Hydro Power Plant.

(v) Power generation from the Zhur Hydro Power Plant, projected to be constructed by 2014 and begin its commercial operation by 2015.

(vi) Power generation from new units of TPP ‘New Kosova’. Its first generation unit is expected to enter into operation in 2016.

(vii) During the period 2010-2018, over 16 small Hydro Power Plants will be constructed and commissioned, entering into operation with a total installed capacity of over 60 MW. Meanwhile, the existing small hydropower plants will be rehabilitated and enter into operation.

(viii) Depending on availability of financial resources, particularly during the next 2-3 years, 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 4.

Table 4: Electricity generation forecast [GWh]

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TPP Kosovo A</td>
<td>1300</td>
<td>1300</td>
<td>1300</td>
<td>1450</td>
<td>1450</td>
<td>1450</td>
<td>1450</td>
<td>1450</td>
<td>1450</td>
<td>0</td>
</tr>
<tr>
<td>TPP Kosovo B</td>
<td>3300</td>
<td>3300</td>
<td>3300</td>
<td>3300</td>
<td>2500</td>
<td>3400</td>
<td>3400</td>
<td>3400</td>
<td>3400</td>
<td>3400</td>
</tr>
<tr>
<td>TPP New Kosova</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3750</td>
<td>7500</td>
<td>11250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPP Ujman</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td>79</td>
</tr>
<tr>
<td>HPP Zhur</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>398</td>
<td>398</td>
<td>398</td>
<td>398</td>
<td>398</td>
</tr>
<tr>
<td>Small HPPs</td>
<td>42</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
<td>200</td>
<td>210</td>
<td>225</td>
<td>240</td>
<td>250</td>
</tr>
<tr>
<td>Total</td>
<td>4721</td>
<td>4779</td>
<td>4804</td>
<td>4979</td>
<td>4204</td>
<td>4229</td>
<td>5537</td>
<td>9302</td>
<td>13067</td>
<td>15377</td>
</tr>
</tbody>
</table>
2.4 Forthcoming generation investment for the next three years

The power generation in the near future 2009 - 2011 will focus on meeting as best as possible the demand of consumers in Kosovo with stable, uninterrupted electricity supply and competitive prices. In order to meet the local growing demand for electricity in the longer term, investments in the following projects are needed:

- Development of new units in a new TPP Kosovo C with installed capacity of up to 2,000 MW;
- Rehabilitation of both unist of TPP Kosova B by 2013/2014,
- Construction of HPP Zhur; and
- Stimulation of construction of small HPPs by private investors.

a. Preparations for development of the TPP New Kosova

The TPP New Kosova is in the preparation phase. The expected capacity is up to 2,000 MW which will be developed in two phases. First phase of about 1,000 MW will be implemented until 2016, and second phase until 2018-2020. The development of the TPP New Kosova is part of a comprehensive project including the parallel development of a new lignite coal mine in Sbovc to ensure sufficient fuel supply of all TPP Kosovo A and B and TPP New Kosova.

A Project Steering Committee comprising MEM, ERO, Ministry of Economy and Finance, Ministry of Environment and Spatial Planning, and the Independent Commission of Mines and Minerals (Regulator for Mines) is managing the process. The tasks of this Steering Committee are to prepare the necessary legal basis, to prepare and implement the tendering procedure, and to select a winning bidder for project implementation by end of 2009.

c. Development of new hydro power plants

Kosovo is planning to develop its hydro resources through a concessioning arrangement for private developers. HPP of Zhur (with about 300MW of installed capacity) and a number of small HPPs (with total installed capacity of about 60 MW) are being prepared for tendering. It is expected that development of all this generation capacities starts by 2001.

d. Authorised investment projects
Regarding the Project TPP New Kosova - which will include:
(i) development of the TPP New Kosova, and
(ii) development of a new lignite mine in Sibovc.

Four international, highly reputable, consortia are prequalified/shortlisted until now. It is expected that one of these four consortia is selected by end of 2009 to develop the Project.

e. Actually in process of construction

Actually there are no projects of capacity investments in process of construction.

2.5 Current generation fuel mix and expected developments

a. Fuel diversity and geographic origin

It is expected that the domestic abundant lignite will remain the predominant source of fuel for large-scale power generation in Kosovo.

For medium or small scale power production by private auto-producers (which have generation units for back-up in periods of power cuts) petrol and diesel are the dominant fuels. Since there are no data available on the volume of power generation by auto-producers, it remains difficult to estimate the contribution to total power supply and the related fuel mix.

b. Lignite fuel stocks

The data on the energy sources’ stock were collected in cooperation with KEK, ICMM (on coal), and the MTI (on oil derivates).

The maximum reserve capacity for Kosovo A is 630,000 t, while the maximum reserve capacity for Kosovo B is 560,000 t. The actual level of reserve varies considerably, being at its highest at the beginning of winter and lowest in the springtime. For example, the reserve level measured on 5th March 2007 showed reserves as 74,645 t for Kosovo A and 204,510 t for Kosovo B.

Assuming the average output load from Kosovo A is 110 MW and that it takes 2.0 t of lignite to export 1 MWh of electricity then this implies a usage of 5,280 t per day. Therefore the actual reserve of 74,645 t implies sufficient reserves for 14 days.

Assuming the average output load from Kosovo B is 500 MW and that it takes 1.5 t of lignite to export 1 MWh of electricity then this implies a usage of 18,000 t per day. Therefore the actual reserve of 204,510 tonnes implies reserves for 11 days.

Based on the same output assumptions as above, if the full reserve level was achieved then there would be sufficient coal for 119 days of operation at this level. Of course, if the plant and coal availability increased the same reserve level would be sufficient for a considerably smaller number of days.
For Kosovo B, again assuming the same output as above, if the full reserve level was achieved then there would be sufficient coal for 31 days of operation at this level.

Anticipated demand for lignite to supply the existing power plants and the TPP New Kosova (with a capacity of up to 2000 MW) are shown in Table 5².

Table 5: Demand for Lignite

<table>
<thead>
<tr>
<th>Year</th>
<th>TPP A</th>
<th>TPP B</th>
<th>TPP New Kosova</th>
<th>Market</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2405</td>
<td>4785</td>
<td>0</td>
<td>50</td>
<td>7240</td>
</tr>
<tr>
<td>2010</td>
<td>2405</td>
<td>4785</td>
<td>0</td>
<td>70</td>
<td>7260</td>
</tr>
<tr>
<td>2011</td>
<td>2405</td>
<td>4785</td>
<td>0</td>
<td>100</td>
<td>7290</td>
</tr>
<tr>
<td>2012</td>
<td>2683</td>
<td>4785</td>
<td>0</td>
<td>110</td>
<td>7578</td>
</tr>
<tr>
<td>2013</td>
<td>2683</td>
<td>3500</td>
<td>0</td>
<td>120</td>
<td>6303</td>
</tr>
<tr>
<td>2014</td>
<td>2683</td>
<td>3500</td>
<td>0</td>
<td>130</td>
<td>6313</td>
</tr>
<tr>
<td>2015</td>
<td>2683</td>
<td>4760</td>
<td>0</td>
<td>150</td>
<td>7593</td>
</tr>
<tr>
<td>2016</td>
<td>2683</td>
<td>4760</td>
<td>4125</td>
<td>160</td>
<td>11728</td>
</tr>
<tr>
<td>2017</td>
<td>2683</td>
<td>4760</td>
<td>8250</td>
<td>170</td>
<td>15863</td>
</tr>
<tr>
<td>2018</td>
<td>0</td>
<td>4760</td>
<td>12375</td>
<td>180</td>
<td>17315</td>
</tr>
</tbody>
</table>

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 in the period 2008-09, amounting to €145 million, are being covered by the Kosovo Budget. The Government, within the Mid-Term Expenditure Framework (MTEF), has allocated a credit of €75 million soft loan in 2008 and has allocated €70 for 2009 for KEK JSC to fund the rehabilitation and/or purchase of new equipment (bucket-wheel excavators and related conveyors) for the “New Mine”. EC and KfW together have funded €26.2 million for the rehabilitation of two bucket-wheel excavators for overburden removal. BKK has participated in this project with €15 million.

By the time when TPP “New Kosova” enters into operation with a capacity of approximately 2,000 MW, expansion of the mine in its southwest will be necessary. The total exploitable amount of lignite in the “New Mine” is assessed at 830 Million tons, which will suffice to supply lignite in the next 40 years.

Figure 6 shows the lignite production from open cast mines during the next 10-year period 2009-2018.

Figure 6: Lignite production during 2009-2018

² These coal demands do not include market demand for unprocessed and dry coal.
c. Contingency plan for fuel stocks

Under Article 6 of the Generation Licenses KEK Generation has prepared a contingency plan for fuel stocks for Kosovo A and B. This plan requires that stocks of lignite, equivalent to 10 days running at full output, are maintained as a contingency stock.

A generation license condition is requiring the Generator to co-operate with the MEM/ERO in all of its strategic contingency planning with respect to fuel stocks and procedures with respect to security of supply. Article 6 describes the Security Arrangements of Kosovo Generation Licenses for Kosovo A and B thermal power plants.

The Generation Licenses states: The Licensee shall comply with any provision setting up the type and extent of the minimum fuel stocks or the specific reserve capacity and any relevant secondary legislation of the Minister of Energy and Mining and relevant Codes.

d. Lignite resources in Kosovo mines

Lignite reserves in Kosovo are located in two large basins called ‘Kosova’ and ‘Dukagjini’. Geological lignite reserves are assessed to amount to 14 billion tons (including all categories of reserves). Table 6 presents a summary on lignite reserves by location.

<table>
<thead>
<tr>
<th>Basin</th>
<th>Surface [km²]</th>
<th>Reserves [Million Ton]</th>
<th>Explored</th>
<th>Exploitable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>t</td>
<td>t_e</td>
</tr>
<tr>
<td>Kosova</td>
<td>264</td>
<td>11500</td>
<td>2957</td>
<td>9804</td>
</tr>
<tr>
<td>Dukagjini</td>
<td>95</td>
<td>2737</td>
<td>782</td>
<td>1625</td>
</tr>
<tr>
<td>Other</td>
<td>87</td>
<td>87</td>
<td>22</td>
<td>74</td>
</tr>
<tr>
<td>Total</td>
<td>14324</td>
<td>3761</td>
<td>11503</td>
<td>3004</td>
</tr>
</tbody>
</table>
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 that makes economically attractive the open cast mining of lignite.

The lignite resources in the two existing lignite mines (Bardh and Mirash) feeding Kosovo A and B will be depleted by 2010/2011. In order to maintain the lignite production at required levels Government provided KEK sh.a. with more than €6 million to deviate the Sitnica riverbed, so facilitating exploitation of lignite from the Sitnica area. This measure will bridge the reducing of lignite production from Bardh and Mirash and meet the gap until a new lignite mining exploitation in Sibovc Southwest starts by mid-2010.

The full development of the new lignite mine in Sibovc will go in parallel with the Project for the TPP New Kosova. The Southwest Sibovc mine and that of the Sibovc as a whole will have enough reserves to accommodate the present generating capacity of TTPs Kosovo A and B, and the 2,000 MW additional capacity of TPP New Kosova for a period of 40 years.

Regarding development of New Kosova Project, it is expected that a private investor will be selected by end of 2009. This project comprises full development of the new mine in Sibovc and construction of new generation capacities of up to 2,000 MW, including transmission connection line.

2.6 Actual investments commissioned or retired during 2008

a. Net new coal/oil capacity (GW)

There were no commissioned new coal or oil fuelled power generation stations, nor retirements in 2008.

b. Net new gas capacity (GW)

No natural gas supply is available, so there are no such power generation plants in Kosovo.

c. Net new renewables capacity (GW)

In November 2005, the new HPP “Lumbardhi” began its operation. This plant is located in the South-Eastern part of Kosovo, around 15 km from the town of Deçan. It is owned by KEK and it is operated by Triangle General Contractors Inc. (TGC) under a 20 years lease agreement and PPA with KEK (“feed-in” price). In this project around €6 million was invested for refurbishment increasing its capacity from 7.35 MW to 8.3 MW. It is worth noticing that this is the first private project in Kosovo’s energy sector financed by the “non recourse” method.

d. Net new CHP capacity (GW)

No new CHP plants were commissioned.

e. Net new other capacity (GW)
No new other power generation plants were commissioned.

2.7 **Description of the role of regulatory or other authorities**

The Law 2004/9 “on Energy Regulator” established a strong, fully-independent Regulator (Energy Regulatory Office - ERO) in Kosovo, which is completely autonomous from any Governmental Department to exercise economic regulation in the energy sector (Electricity, District Heating and Natural Gas), and defined its executive powers, duties and functions, primarily amongst which are:

- the conditions and criteria for issuing licenses to carry out energy activities,
- the procedures for granting permits for the construction of new generating and transmission capacity,
- the criteria for regulating network and public supply prices and approving tariffs,
- the conditions of energy supply,
- monitoring the effective unbundling and development of competition in the energy sector, and
- customer protection, etc.

The establishment of ERO falls within the wider framework of energy policy harmonization in South Eastern Europe. On behalf of Kosovo, UNMIK signed Energy Community of South East Europe (ECSEE). By doing that, Kosovo became an equal partner and player in establishing ECSEE, which is of prime importance for its economic development, because of favourable lignite reserves and the ideal position of Kosovo for power exchanges in the SEE region.

On an annual basis ERO reports to the Assembly of Kosovo. Its reports are being made public.

In general principles ERO is responsible for the establishment and enforcement of a regulatory framework for the energy sector in Kosovo, in order to achieve compliance with the obligations under the Treaty establishing Energy Community and harmonization to the Acquis Communautaire on energy, to ensure non-discriminatory access of all users to the energy networks at prices reflecting true economic costs, to ensure the effective unbundling of the vertically integrated utilities and the non cross-subsidization of prices, to promote competition and the efficient functioning of the energy market, and to promote economic efficiency by providing the appropriate long and short term pricing signals.

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

- **Ministry of Energy and Mining (MEM)** is, among others, responsible for energy sector strategy and policy (preparation and implementation), development of secondary legislation (including technical standards and norms), energy inspectorate, renewable energy sources and rational use of energy, coordination of donors and attraction of investments (“one-stop-shop”) - representing “State Energy Authority” according to MoU on REM;

• **Korporata Energjetike e Kosovës (KEK sh.a.),** the vertically integrated power utility of Kosovo including coal mining, power generation, distribution and supply, is currently the subject of incorporation and legal and accounting unbundling processes, which will be completed by end of 2009;

• **KOSTT sh.a.** is the Kosovo Transmission System Market Operator (TSMO) playing a key role in the Kosovo electricity market. Appointed by the Ministry of Energy and Mining and licensed by the Energy Regulatory Office, pursuant to the provisions of the primary and secondary legislation, KOSTT became a licensed entity for the Transmission System Operation and for the Market Operation, since October 2006. KOSTT is responsible for planning, developing, maintaining and operating the Kosovo Electricity Transmission System as well as operating the new electricity market.

### 2.8 Authorisation criteria for new generation investments and the role of long term planning

#### a. License Requirements

The ERO is responsible for licensing and authorizing electricity generation investments. It has the power to require measures to provide for the enhancing of security of supply through the imposition of conditions.

Article 6 of the Generation Licenses to Kosovo A and B has the following provisions with regard of security of fuel supply:

- The Licensee shall prepare a contingency plan for fuel stocks under the Article 11 of the Law on Electricity and in accordance to the relevant secondary legislation issued by the Minister of Energy and Mining.
- The Licensee shall comply with any provision setting up the type and extent of the minimum fuel stocks or the specific reserve capacity and any relevant secondary legislation of the Minister of Energy and Mining and relevant Codes.

In accordance with Article 35 of the Rule on Licensing of Energy Activities in Kosovo, ERO may modify the license “… Where required to protect the energy system in Kosovo, in connection with security of supply, national security, security of life and health of citizens or protection of environment”.

#### b. Authorization requirements

In late 2008, ERO has approved the Authorization Criteria and Procedure which are fully in line with the Law on Energy Regulator 2004/9 and the Directive 2003/54.

Regarding the TPP New Kosova Project, through the Executive Decision No.2006/06 of the Special Representative of the Secretary General of the United Nations (SRSG) it is established the Project Steering Committee (PSC)
which is in charge with the process of the preparation and approval of this Project.

c. **Role of long term planning**

The Law No. 2004/8 on Energy entrusts the MEM in Article 6 to adopt long-term and annual energy balances which will forecast energy demand, sources (types) of energy and measures to be implemented for meeting the demand.

The long-term and annual energy balances for electricity shall be proposed to the MEM by KOSTT JSC after consultation with the ERO. The long-term energy balance shall be adopted for a period of ten (10) years. Updates to the long-term energy balance shall be adopted every two years. The mandatory components of the long term energy balance document shall be:

a) a forecast of the demand of individual energy sources by type;

b) a forecast of the supply of individual energy sources by type;

c) the manner in which supply requirements will be met for individual energy sources including primary (renewable and non-renewable energy sources) and final energy;

d) a forecast for the emission of harmful substances from energy sources and the environmental impact resulting from the production and use of energy; and

e) a list of the required stock levels and reserve capacity in order to achieve the planned level of supply reliability.

A second long-term balance of electricity for Kosovo for the period 2009-2018 was drafted by KOSTT JSC in late 2008.

The annual and long term energy forecast for the whole energy sector in Kosovo was prepared by MEM for the year 2008 and for the period 2009–2018.

2.9 **Implicit and explicit incentives to build capacity**

There are no implicit or explicit incentives to build electricity generation capacities in general beside the fact that Kosovo provided the framework for free competition and market rules in the electricity sector.

For the promotion of electricity generation from renewable energy sources the Law No. 2004/8 on Energy requires in Article 11 that participants in the energy sector shall perform the following tasks:

a) when dispatching generation, the transmission system operator shall give priority to generation using renewable energy sources as permitted under the Grid Code and other applicable rules and regulations;

b) system operators shall establish and publish standard rules on who bears the costs of technical adaptations, such as grid connections and grid reinforcements, necessary to integrate new generators feeding
electricity produced from renewable energy sources into the interconnected system. Such rules shall be approved by the Energy Regulatory Office, shall be consistent with the Energy Strategy and shall be based on objective, transparent and non-discriminatory criteria, taking particular account of all the costs and benefits associated with the connection of these producers to the system;

c) system operators shall provide any new generator wishing to be connected with a comprehensive and detailed estimate of the costs associated with the connection; and

d) system operators shall establish and publish standard rules relating to the sharing of costs of system installations, such as grid connections and reinforcements, between all generators benefiting from them. Such rules shall be approved by the Energy Regulatory Office, shall be consistent with the Energy Strategy and any applicable secondary legislation on the tariff methodology.

The development and discussion of secondary legislation, and amendments to laws which may be necessary, are ongoing.

**2.10 Progress in major infrastructure projects**

The following activities were carried out for long term planning and improvement of the balance of electricity supply and demand during 2008:

**a. Improving situation of the electricity supply from KEK JSC**

- During the second half of 2008, there is an obvious increase in revenue collection for electricity invoiced by KEK JSC. It should be mentioned here that, with local personnel managing KEK since November 2006, revenue collection has increased by about slowly but steadily.

- An agreement of co-operation was signed for electricity exchange with Albania, which has improved the amount and regime of exchange between the two countries.

- Also, another agreement of cooperation was signed between the Albanian Government and the Kosovo Government for the construction of a Kosovo-Albanian 400 kV line. This project is supported by KfW and being implemented smoothly. The interconnection line is expected to be commissioned by end of 2011.

**b. Restructuring and preparation of energy sector in order to attract large private investments**

- For the implementation of the Energy Strategy in Kosovo, MEM/Government has taken some important measures for restructuring the Energy Sector. In this regard, during 2008, the Government has approved two important measures:
  
  i. Legal unbundling of distribution and supply businesses from KEK JSC and their incorporation as a new corporate in Kosovo, and

  ii. Preparation for privatisation of this new corporate by end of 2010.
• Work has continued during 2008 in completing the necessary open, transparent and competitive procedures for the selection of a private investor that will be engaged in the combined project of TPP New Kosova, including:
  i. opening of a new mine in Sibovc, and
  ii. construction of new generation capacities (about 1,000 MW in the first stage by 2016 and the second stage by 2018-2020, when the total capacity of the new TP is expected to be around 2000 MW).

• Improvement and processing of the legal base and regulations needed to attract private investments. In this regard, a number of important amendments to the existing laws for the Energy Sector have been developed and will be submitted to the Kosovo Assembly for approval in the near future.

c. Regional and European Integrations

During 2008, Kosovo has continued the European Integration process. Kosovo is a member, with full rights, of the Energy Community South-East Europe. In this regard, MEM is implementing Kosovo’s Treaty obligations not only with liberalization, integration and development of the Energy Sector, but it is also supporting the efforts for the preparation of an adequate legal, regulatory and institutional framework for environment protection.

2.11 Interconnection infrastructure

a. Actual cross-border capacity

The maximum current cross-border capacity (Net transfer Capacity) on high voltage lines is 1400 MW. On the 400kV line the existing cross-border capacity is about 1200 MW (3x400MW) and on the 220kV it is 200 MW (100 MW line to Albania plus 100 MW Kryshevc-Serbija line). The future plans for the cross-border capacity include the building of a 400 kV line with Albania with a capacity of 600 MW.

A study on construction of a new 400 kV interconnection line to Albania is now prepared with funding of KfW. This line is expected to be commissioned by end of 2011. It will take up also the issues of interconnection capacity requirements in context with the new TPP New Kosova and possible export of electricity produced for the regional market.

b. Electricity import requirements

Since 2000 our country has been transformed from a net exporter to a net importer of electricity. During the recent years, our country has imported 8%-33% of its total electricity consumption, depending on the amount of electricity generated in the country. Considering the ongoing increase of the electricity demand, it is almost obvious that role of electricity imports will be essential for ensuring stable and sustainable electricity supply in the foreseeable near future. Electricity imports are expected to impact the cost of supply, and will subsequently drive the increase of electricity tariffs for all consumer categories.
Statement of Security of Supply for Kosovo (Electricity and Gas - Updated)

It has to be mentioned that current power exchange capacity of the Kosovo power transmission system is about 450 MW. This is not sufficient for Kosovo. This, combined with the other fact that the in-country electricity generation is often at about 10-12 million kWh/day, limits the total possible supply at about 14-16 million kWh/day. Because that electricity demand in a normal winter day reaches 17-18 million kWh, KEK JSC is often obliged to shed loads, thus causing both concerns to and damaging the country’s economy and citizens’ quality of life.

Another keen problem KEK JSC is facing related to electricity imports, especially during the last two years, is constantly increasing electricity import price. This not only places KEK JSC in liquidity difficulties when importing, but also requires further increase of tariffs for tariff clients.

It should also be stressed that import of electricity is become recently 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 period.

Forecast of needs for electricity imports is presented in Table 7.

Table 7: Forecasted of electricity imports in GWh

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>For MDS</td>
<td>273</td>
<td>447</td>
<td>614</td>
<td>642</td>
<td>1630</td>
<td>1830</td>
<td>758</td>
</tr>
<tr>
<td>For HDS</td>
<td>578</td>
<td>735</td>
<td>909</td>
<td>950</td>
<td>1960</td>
<td>2193</td>
<td>1125</td>
</tr>
</tbody>
</table>

C. KOSTT JSC processes for planning new networks

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, whereas some power substations remain in poor technical condition. The Kosovo transmission grid of 400 kV and 220 kV lines is an integral part of the region’s interconnection system.

The Article 13 of the Law on Electricity states that the Transmission Network Operator, that is KOSTT JSC, shall be responsible for:

- Operating, maintaining, and if necessary, developing the transmission network and its inter-connectors with other networks, in order to guarantee security of supply
- Preparing every two years, on the basis of regional needs, a list of the new transmission capacities and interconnection power lines required to meet the needs of Kosovo.

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.
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 support also the needs of new generation capacities for connection to the grid, although investments for connection to the grid should be bared by the new power generators themselves.

Main measures to be undertaken for the development of the transmission grid in the medium term include:

- Construction of the 400 kV interconnection line with Albania, 400/110 kV junctions in Istog (Peja 3 project) and in Ferizaj (Ferizaj 2 project), additional 150MVA transformers at Kosova A, Prishtina 4 and Prizreni 2 substations, installation of the SCADA/EMS3, as well as the necessary reinforcements in 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 line with the Republic of Macedonia.

Upgrading power distribution lines and transformers

In the case of KEK Distribution privatization, 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 2009-2015 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.

---

3 Supervisory Control and Data Acquisition (SCADA) system and Energy Management System (EMS)
3. Gas

3.1 General description

Kosovo is not linked to operational natural gas supply networks. A connection to natural gas supply would be an important option to diversify fuel supply and to increase security of supply, but there are actually no projects planned.

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

3.2 Current levels of gas consumption and expectations for the next three years

In 2008 in Kosovo 66.54 ktoe of LPG were supplied to final consumers. For the coming years, a moderate increase is expected.

3.3 Currently available production and import capacity

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

3.4 Forthcoming production and import investment for the next three years

a. Authorised

There are actually no investment projects, nor expectation of such projects in the next three years.

b. Actually in process of construction

There are no projects in construction.

3.5 Description of the role of regulatory or other authorities

Law 2004/9 "on Energy Regulator” established a strong, fully-independent Regulator (Energy Regulatory Office - ERO), completely autonomous from any Governmental Department to exercise economic regulation in the energy sector (Electricity, District Heating and Natural Gas) and defined its executive powers, duties and functions, primarily amongst which are:

- the conditions and criteria for issuing licenses to carry out energy activities,
- the procedures for granting permits for the construction of new generating and transmission capacity,
- the criteria for regulating network and public supply prices and approving tariffs,
- the conditions of energy supply,
- monitoring the effective unbundling and development of competition in the energy sector, and
- customer protection, etc.
Statement of Security of Supply for Kosovo (Electricity and Gas - Updated)

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

a. Requirements relating to supplier of last resort

There are no special requirements.

b. Incentives to increase production/import capacity or any type

There are no incentives in place.

c. Requirements relating to the availability of storage for public service reasons

There are no such requirements.

3.6 Progress in major infrastructure projects

a. Important interconnection projects between or within Member States

Currently there are no natural gas network interconnection projects for Kosovo in preparation.

b. Regulatory framework under which they will operate

In the framework of requirements of the EnC Treaty, MEM has developed and presented to the Kosovo Assembly for adoption later this year the draft Law on Gas which is in compliance with the Directive 2003/55/EC. After the Law approval, ERO and MEM will draft regulation and secondary legislation as provided by this Law, so that all relevant EU directives and regulations are transposed.