Statement of Security of Supply for Kosovo

(Electricity and Gas)

June 2010
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Abbreviations

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

Following the recommendations of the Energy Community Secretariat ECS, the Ministry of Energy and Mining (MEM) has developed the first Statement of Security of Supply of Kosovo (SoSSoK) in May 2007. MEM has updated this SoSSoK in May 2009 and May 2010. 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 called 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 very satisfactory. Low payment collection rates and 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 best as possible, and customers are cut-off in load-shedding regime as necessary. To increase the payment discipline, areas with good collection rate A continue to be supplied with preference, whereas those with unsatisfactory collection rate in C areas are the first to be cut-off from supply when supply falls short. KEK sh.a., with support by the Government, is implementing a comprehensive campaign to increase billing and collection. Results are 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 to fulfill current Kosovo’s demand for electricity if they were totally available. But, 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 during 2010 - 2012 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 about 1,000 MW in the first phase;
- Construction of HPP Zhur;
• Construction of small HPPs by private investors; and
• Development of other renewables including wind farms.

The lignite resources in the two existing lignite mines (Bardh and Mirash) feeding Kosovo A and B will be depleted by end of 2010 or during 2011. In order to maintain the lignite production at required level, 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 is bridging the gap until a new lignite mining exploitation in Sibovc Southwest starts exploitation in 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 2010. This project comprises full development of the new mine in Sibovc and construction of new generation capacities of about 1,000 MW in the first phase, 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. MEM updated this report in May 2009 and in May 2010. 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.

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

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.

\(^1\) Draft Structure for the Statements on Monitoring of Security of Supply, ECS, 09.10.2006
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. 2010-2012)
   - 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:
   - Authorization 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. 2010-2012)
   - Currently available production and import capacity (bcm)
   - Forthcoming production and import investment for the next three years: (i) authorized, and (ii) 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/outages 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><strong>Fuel</strong></td>
</tr>
<tr>
<td>Diversity</td>
</tr>
<tr>
<td>Security</td>
</tr>
</tbody>
</table>
In the case of Kosovo, for the period 2010-2012, the definition of the SoS (SoSSoK) would focus on performing simultaneously 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 very satisfactory. Low payment collection rates and 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 best as possible, and customers are cut-off in load-shedding regime as necessary. To increase the payment discipline, areas with good collection rate A continue to be supplied with preference, whereas those with unsatisfactory collection rate in C areas are the first to be cut-off from supply when supply falls short. KEK JSC, with support by the Government, is implementing a comprehensive campaign to increase billing and collection. Results are promising.

2.1 Situation until 2009

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 to fulfil current Kosovo’s demand for electricity if they were totally available. But, 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 “Lumbardhi” began its operation. This small HPP is located in the South-Eastern part of Kosovo, around 15 km from the town of Deçan. It is owned by KEK and concessioned to a private investor under a 20 years lease agreement and PPA with KEK. This run-of-river small HPP has an installed capacity of 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 adequate financial means for maintenance, along with the high technical and commercial losses and the low collection rate have brought KEK JSC to a difficult financial situation. Therefore, KEK JSC’s power distribution and supply services are getting prepared for privatisation, hopefully by the end of 2010.
b. Electricity demand

The period 2000-2009 has been characterized 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 5.012 TWh, with the winter peak 967 MW; and for 2009 it was approximately 5.420 TWh, with the winter peak demand reaching 1072 MW. These energy and peak demands have been registered with the load shedding regime.

In the case of Kosovo this average growth of electricity consumption can be attributed to the 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, 26.18% in 2008, and around 20% in 2009. Situation with collections is changing slowly but steadily in the positive direction.

c. Observed trends of electricity supply in energy balances 2003 - 2009

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 2009 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

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Ministry of Energy and Mining
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.

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 and 2009

Following are the data on peak demand for 2008 and 2009.

<table>
<thead>
<tr>
<th>Year</th>
<th>Peak – total [MW]</th>
<th>Peak at 110 kV [MW]</th>
<th>Peak at 220 kV [MW]</th>
<th>Calculated transmission system losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>888.00</td>
<td>848.70</td>
<td>39.30</td>
<td>42</td>
</tr>
<tr>
<td>2009</td>
<td>1024.71</td>
<td>962.91</td>
<td>61.80</td>
<td>38</td>
</tr>
</tbody>
</table>

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 2010-2018 as shown in Table 1.

Table 1: Two scenarios of GDP growth rate in [%] for the period 2009-2018

<table>
<thead>
<tr>
<th>Scenario</th>
<th>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.
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>Year of commissioning (age)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Installed</td>
<td>Net</td>
</tr>
<tr>
<td><strong>TPP Kosova A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit A1</td>
<td>65</td>
<td>58</td>
</tr>
<tr>
<td>Unit A2</td>
<td>125</td>
<td>113</td>
</tr>
<tr>
<td>Unit A3</td>
<td>200</td>
<td>182</td>
</tr>
<tr>
<td>Unit A4</td>
<td>200</td>
<td>182</td>
</tr>
<tr>
<td>Unit A5</td>
<td>210</td>
<td>187</td>
</tr>
<tr>
<td><strong>TPP Kosova B</strong></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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</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 Lombardh HPP with installed capacity of 8.3 MW.

Thus, the overall available power generation capacities are about 900 MW.

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

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 form TPP New Kosova.

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 end of 2017.

(ii) Power generation from TPP Kosova B, operating with B1 and B2 units. It is anticipated that these two units will be rehabilitated during the period 2016 – 2017, including carryout of investments required to meet emission standards required by EU Directive for Large Combustion Plants. These units would continue their commercial operation for up to 15 more years after revitalization, respectively until 2030.

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

(iv) Power generation from the small HPP (SHPP) of 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 new units of TPP ‘New Kosova’. Its first generation unit is expected to enter into commercial operation in 2016.

(vii) During the period 2010-2018, 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 return into operation.

(viii) Until initiation of production in TPP New Kosova, 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.

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2 Time of decommissioning of the units of the TPP Kosova A before end of 2017 will depend from the time of commissioning of the units of TPP New Kosova.
Table 4: Electricity generation forecast [GWh]

<table>
<thead>
<tr>
<th></th>
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<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>1450</td>
<td>1450</td>
<td>950</td>
<td>500</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TPP Kosovo B</td>
<td>3300</td>
<td>3300</td>
<td>3300</td>
<td>3300</td>
<td>3300</td>
<td>2500</td>
<td>2500</td>
<td>3400</td>
<td></td>
</tr>
<tr>
<td>TPP New Kosova</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1750</td>
<td>5500</td>
<td>7500</td>
<td>7500</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></td>
</tr>
<tr>
<td>HPP Zhur</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></td>
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<tr>
<td>Small HPPs</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>4779</td>
<td>4804</td>
<td>4979</td>
<td>5004</td>
<td>4529</td>
<td>6237</td>
<td>8702</td>
<td>10717</td>
<td>11627</td>
</tr>
</tbody>
</table>

Electricity generation forecast is also presented graphically in Figure 5.

![Electricity generation forecast](image)

2.4 Forthcoming generation investment for the next three years

The power generation in the near future 2010 - 2012 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 New Kosova with installed capacity of about 1,000 MW in the first phase;
- Rehabilitation of both units of TPP Kosova B by 2016/2017;
- Construction of HPP Zhur; and
- Promotion of development of small HPPs and other renewables (including wind farms) by private investors.

a. Preparations for development of TPP ‘New Kosova’

The TPP New Kosova is in advanced preparation stage. The expected capacity of about 1,000 MW will be developed in the first phase. Development of the TPP New Kosova is part of a comprehensive Project including (i) the parallel development of the new lignite mine in Sibovc to ensure sufficient fuel supply of all TPP Kosovo A and B and TPP New Kosova generation capacities, and (ii) rehabilitation of TPP Kosova B after the first unit of TPP New Kosova comes on line.

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 winning bidder for this Project is expected to be selected by end of 2010.

c. Development of new hydro power plants

Kosovo is preparing to develop its hydropower potentials through concessioning arrangements for private developers. HPP of Zhur (with about 300MW of installed capacity) and a number of small HPPs (with total installed capacity of about 50 MW) are being prepared for tendering during 2010. It is expected that development of all small HPPs starts by 2012.

d. Authorised investment projects

Reconfiguration of the ‘New Kosova’ Project\(^3\) includes: (i) development of the TPP New Kosova, (ii) development of a new lignite mine in Sibovc, and (iii) rehabilitation of TPP Kosova B after the first unit of TPP New Kosova comes on line. Four international, highly reputable, consortia are prequalified/shortlisted in early 2010. It is expected that one of these four consortiums is selected by end of 2010 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 their contribution to total power supply and the related fuel mix.

b. Lignite fuel stocks

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 lignite reserves were:

- 222,836 t for Kosovo A and 208,005 t for Kosovo B on 31 Dec 2008, and
- 269,518 t for Kosovo A and 283,002 t for Kosovo B on 31 Dec 2009.

Based on data provided by KOSTT JSC in the electricity balance for 2009, the specific lignite consumption at TPP Kosova A is 1.93 ton/MWh, and at TPP Kosova B is 1.6 t/MWh.

The lignite reserve at TPP Kosova B is 10.84 days. It is 22 days at TPP Kosova A, if an average annual capacity of 167 MW is assumed.

\(^3\) In December 2009, Government of Kosova reconfigured the ‘New Kosova’ Project. Now, rehabilitation and operation of TPP Kosova B will be part of this Project.
Anticipated lignite demand for supplying the existing power plants and the TPP New Kosova (with a capacity of up to 1000 MW) is shown in Table 5.

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>2010</td>
<td>2405</td>
<td>4785</td>
<td>0</td>
<td>70</td>
<td>7,260</td>
</tr>
<tr>
<td>2011</td>
<td>2405</td>
<td>4785</td>
<td>0</td>
<td>100</td>
<td>7,290</td>
</tr>
<tr>
<td>2012</td>
<td>2683</td>
<td>4785</td>
<td>0</td>
<td>110</td>
<td>7,578</td>
</tr>
<tr>
<td>2013</td>
<td>2683</td>
<td>4785</td>
<td>0</td>
<td>120</td>
<td>7,588</td>
</tr>
<tr>
<td>2014</td>
<td>1758</td>
<td>4785</td>
<td>0</td>
<td>130</td>
<td>6,673</td>
</tr>
<tr>
<td>2015</td>
<td>925</td>
<td>4785</td>
<td>1925</td>
<td>150</td>
<td>7,785</td>
</tr>
<tr>
<td>2016</td>
<td>0</td>
<td>3625</td>
<td>6050</td>
<td>160</td>
<td>9,835</td>
</tr>
<tr>
<td>2017</td>
<td>0</td>
<td>3625</td>
<td>8250</td>
<td>170</td>
<td>12,046</td>
</tr>
<tr>
<td>2018</td>
<td>0</td>
<td>4585</td>
<td>8250</td>
<td>180</td>
<td>13,015</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 during the period 2008-09, amounting to €145 million, have been 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 1,000 MW in the first phase, expansion of the mine in its southwest may be necessary. The total exploitable amount of lignite in the “New Mine” is assessed at 830 Million tons, which will suffice to supply lignite to TPP Kosova A, TPP Kosova B, and TPP New Kosova with up to 2,000MW capacity during the next 40 years.

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.

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4 These coal demands do not include market demand for unprocessed and dry coal.
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 12.5 billion tons (including all categories of reserves). Table 6 presents a summary on lignite reserves by location.

Table 6: 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>$t_{ce}$</td>
</tr>
<tr>
<td>Kosova</td>
<td>274</td>
<td>10,091</td>
<td>2,957</td>
<td>8,772</td>
</tr>
<tr>
<td>Dukagjini</td>
<td>49</td>
<td>2,244.8</td>
<td>782</td>
<td>2,047.7</td>
</tr>
<tr>
<td>Other</td>
<td>5.1</td>
<td>106.6</td>
<td>22</td>
<td>73.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>12,442.4</td>
<td>3,761</td>
<td>10,892.9</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 this 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 end of 2010 or during 2011. In order to maintain the lignite production at required level, Government provided KEK sh.a. with more than €6 million to deviate the Sitnica riverbed, so facilitating exploitation of lignite from the Sitnica basin. This measure is bridging the gap until a new lignite mining exploitation in Sibovc Southwest starts exploitation in mid-2010.

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 2009.

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 favorable 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 – representing the “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 2010;

• **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 Authorization 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.

#### 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 developed by KOSTT JSC in late 2008.

The annual and long term energy forecast for the whole energy sector in Kosovo are prepared by MEM for the year 2010 and for the period 2009–2018.

2.9 Implicit and explicit incentives to build capacity

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.

Regarding promotion for developing renewables, MEM has adopted annual and long-term indicative targets, ERO has approved feed-in tariffs, and Government has mandated KEK JSC to enter in 5-year PPAs with power producers from renewable resources.

Market design and the associated market rules that are under development will consider requirement of paragraph a) above in this section.

As required by paragraphs b) c) and d) above in this section, KOSTT j.s.c has developed and ERO has approved the Connection Charging Methodology. This document was developed under fully transparent and non-discriminatory criteria that define obligations for each party. KOSTT j.s.c has sent to ERO for amending the approved Connection Charging Methodology. Amendments requested will detail procedures, costs and obligations.
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 2009:

a. Improving situation of the electricity supply from KEK JSC
   - During 2009, there is an obvious increase in revenue collection for electricity billed by KEK jsc.
   - An agreement of co-operation has been implemented for electricity exchange with Albania, which has improved the amount and regime of exchange between the two countries.
   - An agreement of cooperation was signed between the TSO of Albania and KOSTT jsc for the construction of the Kosovo-Albanian 400 kV interconnection line. This project is supported by KfW and being implemented smoothly. The interconnection line is expected to be commissioned by end of 2012.

b. Restructuring and preparation of energy sector in order to attract large private investments
   - For the implementation of the Kosovo Energy Strategy 2009-2018, 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 is progressing in completing the necessary open, transparent and competitive procedures for the selection of a private investor that will be engaged in developing the ‘New Kosova’ Project, including:
     i. Full development of the new mine in Sibovc,
     ii. Construction of new generation capacities of about 1,000 MW in the first stage, expected by 2016, and
     iii. Rehabilitation of TPP Kosova B after the first unit of TPP New Kosova comes in line.
   - Enhancement of the legal base and regulations needed to attract private investments. In this regard, three new draft laws for the Energy Sector have been developed and submitted to the Kosovo Assembly for approval later in 2010.

c. Regional and European Integrations

During 2009, Kosovo has continued working on the European Integration process. Kosovo is contracting party of the Energy Community (EnC) Treaty South-East Europe. In this regard, MEM is leading implementation of EnC Treaty obligations not only through coordinating the liberalization, integration and development of the Energy Sector, but also by 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 line Krushevc-Serbija). The near future plans for the cross-border capacity include the building of a 400 kV line with Albania with a capacity of 600 MW. This line is expected to be commissioned by end of 2012. It will facilitate any transmission capacity needed to accommodate potential exports from the New Kosova Project.

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, Kosovo 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. Without government subsidy, high price electricity imports will 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 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.

It should also be stressed that import of electricity has become difficult due to increase of energy deficit in Balkans, where most of the countries are net importers of electricity\(^5\). 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>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>For MDS</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>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.

\(^5\) Current world economic downturn has eased somewhat prices of electricity imports.
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.

In compliance with the above provision, KOSTT j.s.c has prepared the List of New Transmission Capacities and Interconnection Lines for the period 2009–2015.

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 connecting to the grid, although investments for these connections should be bared by the new power generators themselves.

To meet the transmission connection requirements, KOSTT j.s.c has developed and ERO has approved the Transmission Network Development Plan (TNDP) 2007–2013. KOSTT j.s.c is preparing a 10-year Transmission Network Development Plan 2010-2019, which will be submitted soon to ERO for approval. As required by the Grid Code, KOSTT j.s.c has also developed the Generation Adequacy Plan for 2009-2015.

Key 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/EMS6, 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 systems7; and
- Definition of the status of existing 220 kV line 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.

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6 Supervisory Control and Data Acquisition (SCADA) system and Energy Management System (EMS)
7 KOSTT j.s.c and KEK j.s.c of Albania have signed the Ancillary Service Agreement, which provides for 1/3 of available capacities for secondary regulation.
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. 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. Authorized

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.

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

The Law on gas has been adopted. It is in compliance with the Directive 2003/55/EC. MEM has developed secondary legislation as requested by this Law.

4. Generally Applicable Standards

Kosovo has submitted to the EnCT Secretariat its Plan for Adoption of Generally Applicable Standards for the power and gas sectors. This Plan includes 186 standards for the power sector and 82 for the gas sector.
For the power sector, a total of 96 standards are adopted until now as Kosovo standards. The remaining 90 are in the process of adoption. By end of 2010, all 186 standards will be adopted as Kosovo standards.

For the gas sector, a total of 75 standards are adopted until now as Kosovo standards. The remaining 7 are in the process of adoption. By end of 2010, all 82 standards will be adopted as Kosovo standards.