

**STATEMENT ON SECURITY OF SUPPLY
BOSNIA AND HERZEGOVINA**

May 2007

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1. ELECTRICITY

1.1 Legal and Institutional Framework

Legal framework for electric power sector in Bosnia and Herzegovina is defined by:

- **Law on transmission, regulator and system operator of electricity in Bosnia and Herzegovina** ("Official Gazette of BiH", number 7/02);
- **Law on electricity in the Federation BiH** ("Official Gazette of BiH Federation", number 41/02, 24/05 and 38/05);
- **Law on electricity in the Republika Srpska** ("Official Gazette of RS" number 66/02, 29/03 and 86/03);
- **Law on establishing Transmission Company in Bosnia and Herzegovina** ("Official Gazette of BiH", number 35/2004) (which established BiH TRANSCO - the single transmission company in BiH - "**Elektroprenos BiH**", with its seat in Banja Luka);
- **Law on establishing Independent System Operator in Bosnia and Herzegovina** ("Official Gazette of BiH", number 35/2004) (which established BiH ISO - Independent System Operator in BiH, with its seat in Sarajevo).

Provisions of the above mentioned laws regulate important issues within the electric power sector, establishment of the Regulatory Commissions at both state and entity levels (independent and non-profit institutions), new organization of the sector, including establishment of the state companies: BiH ISO and TRANSCO.

SERC - State Regulatory Commission - was founded pursuant to the Law on transmission, regulator and system operator of electricity in Bosnia and Herzegovina and it is in charge of transmission of electricity, transmission system operations and international trade of electricity, according to the international norms and European Union standards.

Pursuant to the above mentioned law, one of the basic competences of SERC was establishment, monitoring and implementation of rules related to fair and non-discriminatory access of third parties to the transmission network. SERC initiated, in the second half of 2006, development of and adopted the *Rule on the third party access*, as the key component of the European directives and rules on the internal electricity market.

SERC made it possible for the entity Commissions, by making *Decision on the market opening* in June 2006, to adopt Rules on getting the status of eligible customer; its new *Decision on establishment of the simplified procedure related to issuance of licenses for international trade for the applicant as eligible customer*, acknowledged the right of eligible customers, directly connected to the transmission network, to import electricity for their own needs, independently without intermediary.

Considering the existing situation and needs expressed, SERC initiated development of the *Rule on Connection*, which shall define connection of new beneficiaries to the transmission network in a uniform and simple way. The Rule is currently in the status of draft and shall be followed by activities on the public comments gathering, through the open public hearings.

Last year, SERC also participated, in a legally regulated way, in approval of documents needed for development and planning of the electric power system:

- *Indicative plan of the generation development* which is annually made by the Independent System Operator for the 10-year period; and
- *Long-term development plan of the transmission network* which is also annually made by Elektrorenos BiH for the 10-year period.

ISO - Independent System Operator - in BiH was founded by the Parliamentary Assembly of BiH based on Law on establishment of the Independent System Operator for the transmission system in Bosnia and Herzegovina (Official Gazette of BiH, number 35/04).

ISO activities include the transmission system control in order to ensure reliability, management of the assets and devices in the main control center, balancing market control and insurance of the system services, insurance of the ancillary services, development and application of the reliability standards, development and control of rules regulating the transmission system usage, development and implementation of the market rules managing provisions related to the system and ancillary services over the transmission system.

Competences of the Independent System Operator in BiH are:

- Control of operations of all high-voltage transmission facilities in Bosnia and Herzegovina of 110 kV voltage level and more,
- Control of facilities and assets of the main control center and any tools for the remote control,
- Balancing market control,
- Procurement of ancillary services and system services offering,
- Preparation, modification and application of the reliability standards, market rules and grid code,
- Insurance of non-discriminatory behavior for the system beneficiaries or classes of the system beneficiaries,
- Analysis and distribution of invoices as foreseen by the ISO Statute for tariffs which are based on costs of the ISO system operations, and for transactions at the balancing market,
- Coordination and approval of the planned supply interruptions of transmission and generation facilities and coordination and approval of the modifications to the Interruptions' Schedule,
- Review, approval, direct auditing and publishing of the long-term transmission development plan submitted by the Transmission Company,
- Determination of the indicative generation development plan with details submitted by generators, distribution companies and end users directly connected to the transmission system.

ELEKTROPRENOS BIH, company for electricity transmission in BiH, is in charge of transmission, maintenance, construction, expansion and control of the electric transmission network. Establishment of the Company "Elektroprenos BiH", uniform, state-owned company in charge of electricity transmission in Bosnia and Herzegovina followed the effective date of the Law on transmission of electricity in August 2004, which anticipated establishment of a new, uniform state-owned company that would hand over the activities related to transmission of electricity, from three existing power utilities. The seat of "Elektroprenos BiH" is in Banja Luka with its operational centers in Banja Luka, Mostar, Sarajevo and Tuzla. Establishment of BiH ISO and Elektroprenos BiH is one of the significant steps in application of the EU Directive 2003/54/EC on common rules for internal electricity market and it introduces common rules on generation, transmission, distribution and supply of electricity; it also determines rules related to organization and acting of the electric power sector, access to the market, criteria and proceedings of public competition, as well as authorization assignment and system management.

FERC, Regulatory Commission for electricity in the Federation of Bosnia and Herzegovina, was founded pursuant to the Law on electricity ("Official Gazette of FBiH", number 41/02), in order to prevent monopoly in the electric power activity, streamline electricity consumption,

enable third party access to the distribution network, everything for the purposes of the gradual electricity market opening, pursuant to the Law. Pursuant to the Law, it is also in charge of FERC to prescribe methodology for determination of tariffs in generation, distribution and supply of electricity, as well as determination of tariff rates for the distribution system users and tariff rates for non-eligible customers and standards for the tariffs' making.

REERS, Regulatory Commission for electricity of the Republika Srpska, was founded in order to regulate monopolistic behavior and provide transparent and non-discriminatory position of all participants in the electricity market of RS, pursuant to the Law on electricity ("Official Gazette of RS", number 66/02, 29/03 and 86/03). It is a specialized, independent and non-profit organization in carrying out its activities. Its task is to provide conditions for the market opening of free competition, in the activities which are not, by the nature itself, inherently monopolistic, and to provide all parties with equal access, quality of services and fair price accompanied by profitable running a business of participants, while respecting generally accepted international standards.

1.2 The Existing Generation Capacities

Electricity generation in Bosnia and Herzegovina is exclusively related to domestic energy resources - coal (black and lignite) and hydro-power. Total installed capacity of generation facilities in BiH is 3,610 MW, out of which 1,960 MW in the hydropower plants and 1,650 MW in thermal power plants. Apart from major hydropower plants and thermal power plants, the existing generation capacities in Bosnia and Herzegovina include also some small hydropower and industrial plants, which are mostly connected to the distribution network.

Overview of major generation facilities in Bosnia and Herzegovina is presented in Table 1.

Table 1: Major generation facilities in Bosnia and Herzegovina

Hydro power plants	Capacity of power unit (MW)	Total installed capacity (MW)	Thermal power plants	Installed capacity (MW)	Available capacity (MW)
Trebinje I	3x60	180	Tuzla	779	709
Trebinje II	8	8	G1	32	29
Dubrovnik (B&H+Hr.)	2x105	210	G2	32	29
Čapljina	2x210	420	G3	100	91
Rama	2x80	160	G4	200	182
Jablanica	2x25+4x30	170	G5	200	180
Grabovica	2x58,5	117	G6	215	198
Salakovac	3x70	210	Kakanj	578	514
Mostar	3x25	75	G1, G2, G3 & G4	4x32	4x29
Jajce I	2x30	60	G5	110	100
Jajce II	3x10	30	G6	110	90
Bočac	2x55	110	G7	230	208
Višegrad	3x105	315	Gacko	300	276
Peć-Mlini	2x15	30	Ugljevik	300	279

The total power production in 2006 amounts 13,627 GWh, out of which 43% from thermal (coal) power plants and 56% from hydro power plants. 1% is from small hydro power plants. On the consumption side was 11,113 GWh, so the amount of positive power balance in 2006 was 2,181 GWh.

1.3 Generation of Electricity and Peak Load of the System

Generation of electricity at the transmission network of BiH in 2006 amounted to **13,277 GWh**. The engaged capacity of generation capacities at the transmission network, in the period 2001-2005, is given in the Table 2.

Table 2: Engaged capacity of resources at the transmission network 2001-2005

Year	2001	2002	2003	2004	2005
Engaged capacity of resources at the transmission network (MW)	1972	2141	2074	2598	2446

Consumption of electricity at the transmission network of BiH, in 2006, amounted to **10,796 GWh**, i.e. 10,818 including the pumping operation of the hydro-power pumping plant, while transmission losses were 290 GWh or 1,78 % in relation to the available electricity at the transmission network. Peak capacity of the consumed amount at the BiH transmission network in the period 2001-2006 is given in Table 3. Table 4 shows forecasts of the peak capacity in the period 2007-2010.

Table 3: Peak capacity of the consume at the BiH transmission network 2001-2006

Year	2001	2002	2003	2004	2005	2006
Peak power of the consume at the transmission network (MW)	1794	1741	1854	1879	2005	2019

Table 4: Peak capacity forecasts of the consume at the BiH transmission network 2007-2010

Year	2007	2008	2009	2010
Peak power of the consume at the transmission network (MW)	2062	2108	2154	2201

1.4 Power balance of BiH at the transmission network

Figure 1 shows realization of the power balance in the period 2001-2005 at the transmission network and forecasts for the period 2006-2016.

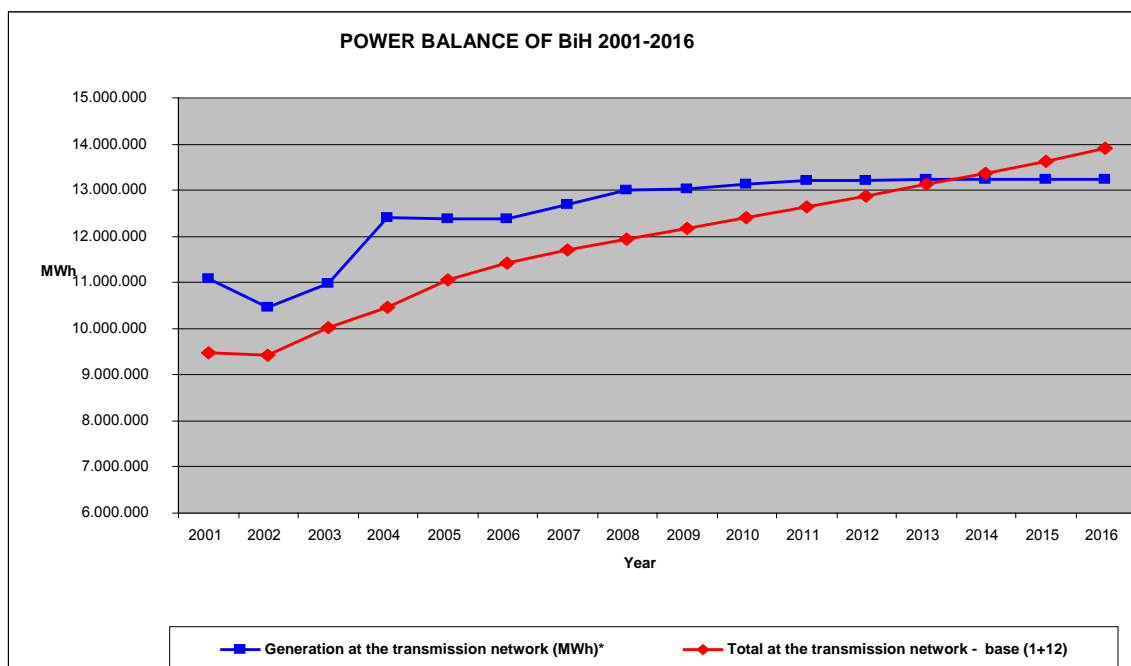


Figure 1. Power balance of BiH 2001-2016 (blue – generation, red – consumption)

1.4.1 Power balance in power utilities

Three power utilities, mostly state-owned, carry out generation of electricity: Public company Elektroprivreda BiH, public-parent, state-owned company of Elektroprivreda RS and public company Elektroprivreda HZ HB. As far as distribution of electricity is concerned, apart from these three power utilities, there is Elektrodistribucija of Brcko District.

Power balances in power utilities are given in Figures 2, 3 and 4 - source of information is ISO BiH.

Taking into account the power balance in the power utilities, it can be noticed that public company "Elektroprivreda" HZ HB joint-stock company Mostar, from its own generation facilities, cannot meet consumption of its tariff customers. That is why it is forced to procure electricity for the needs of its tariff customers, applying the Law on public procurement. Electric power supply is uncertain and jeopardized in the area covered by this power utility due to such way of closure of the power balance.

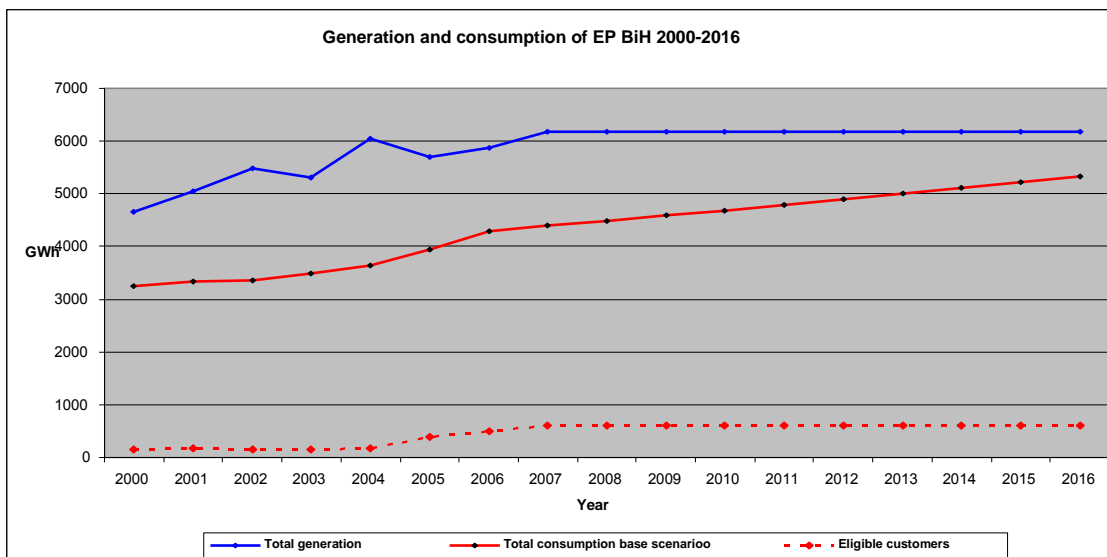


Figure 2. Power balance of the public company of EP BiH 2000-2016

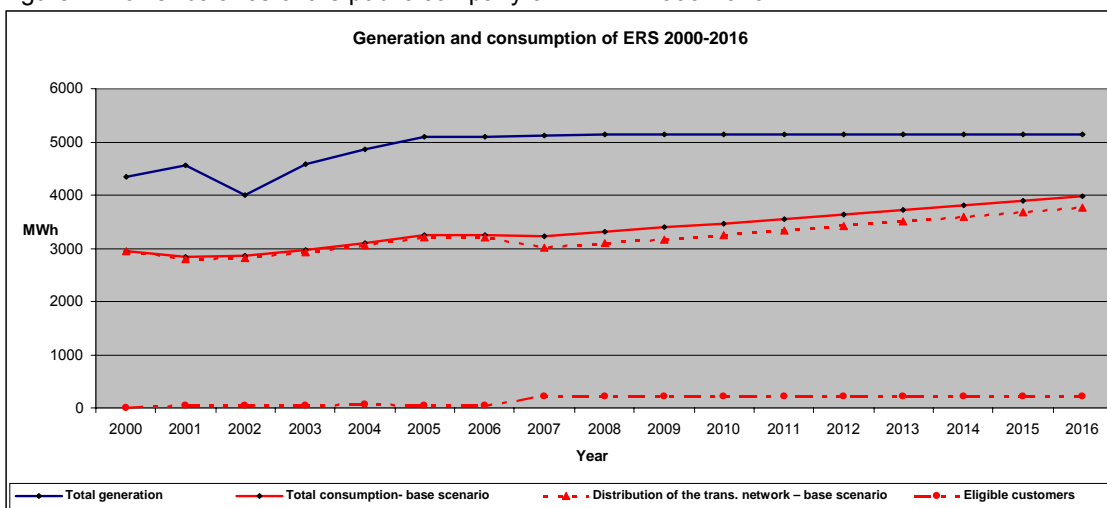


Figure 3. Power balance of the public, parent and state-owned company of EP RS 2000-2016

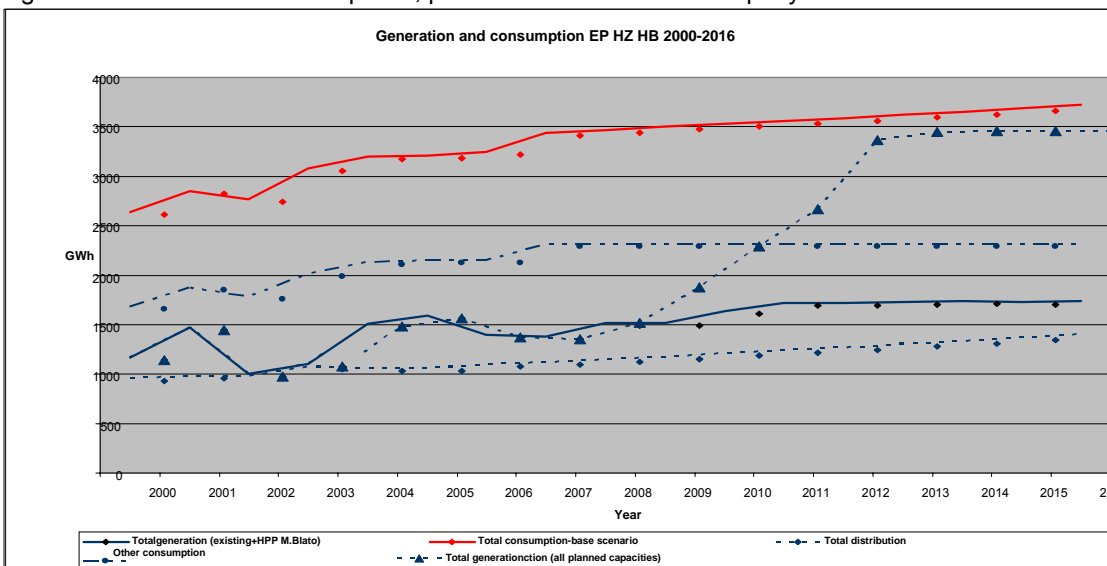


Figure 4. Power balance of the public company EP HZ HB 2000-2016

1.5 Map of the electric power system of BiH

Map of the electric power system of BiH - October 2006 is presented in Figure 5.

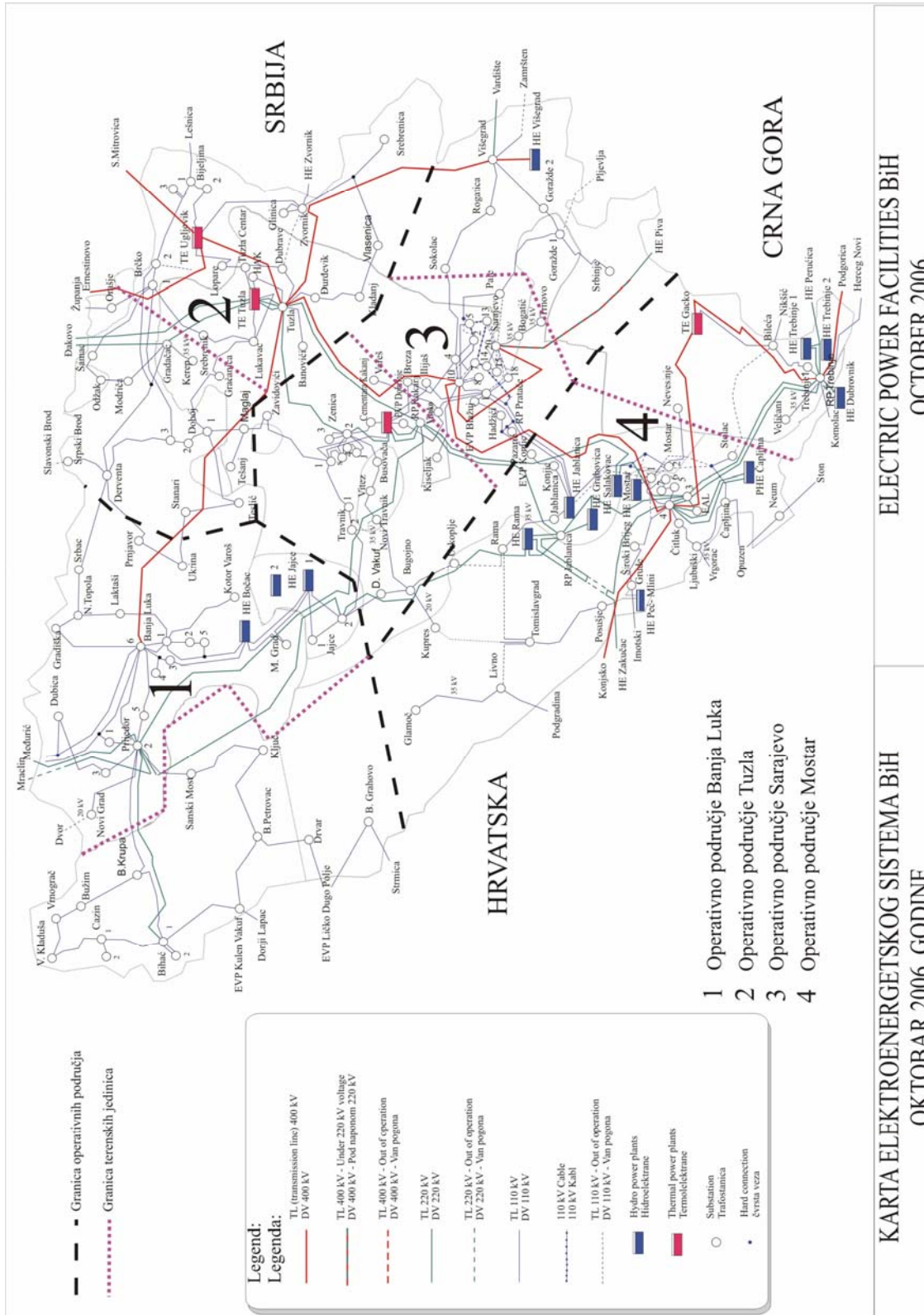


Figure 5. Map of the electric power system of Bosnia and Herzegovina – October 2006

1.6 Basic information about the transmission network

Basic information about the transmission lines and interconnected connections of 400 kV, 220 kV and 110 kV are given in the Table 5

Table 5: Basic information on the transmission lines and the interconnections

<i>transmission lines</i>			<i>interconnections</i>		
No	Nominal voltage of transmission lines	Length (km)	No	Nominal voltage of transmission lines	No. of interconnections
1	400 kV	992	1	400 kV	4
2	220 kV	1691	2	220 kV	8
3	110 kV	3649	3	110 kV	17
4	110 kV – cable line	31			

Basic information about the transformer stations 400/x, 220/x and 110/x and the transformers themselves are presented in Table 6.

Table 6: Basic information on the transmission substations and transformers

<i>transmission sub-stations</i>				<i>transmission transformers</i>			
No	Type of sub-station	No. of sub-stations	Installed capacity (MVA)	No	Transmission ratio of transformers	No. of transformers	Installed capacity (MVA)
1	TS 400/x kV	8	5861,5	1	TR 400/x kV	14	4900
2	TS 220/x kV	7	1277,0	2	TR 220/x kV	12	1800
3	TS 110/x kV	119	4873,5	3	TR 110/x kV	205	5196

Since 1 February 2006, the commencement date of operation of the single BiH transmission company, there have been some interruptions, in relation to the plants, in realization of reconstruction and construction of major infrastructures. Last year, there was reconstructed (in the range from small repairs to complete reconstruction) 87 km of the transmission lines and 18 substations with increase of total installed capacity of 80 MVA. There was put into operation 40 km of the newly-built 400 kV interconnection transmission line Ugljevik - Sremska Mitrovica (BiH - Serbia). The fiber-optical protection rope, total length of 879 km, was inserted in the transmission network.

1.7 Procedural steps related to planning and development of the transmission system

- 1 Complete set of technical data of all elements of the transmission network which are necessary for the reliable system control shall be made available by the Transmission Company to the BiH ISO. Transmission Company shall inform BiH ISO in writing on all estimates of technical data or facilities.
- 2 Data necessary to plan development of the transmission network and data related to the transmission system operation shall be made available to the Transmission Company by the BiH ISO.

- 3 BiH ISO shall publish every year "Development plan of the transmission system" for the next 10 years, indicating the structural changes for each year, in order to help users and possible users estimate the possibilities of connection and usage of the transmission system.
- 4 Planning data shall be ensured by the users while filing for a new or modified contract on connection to the transmission system, i.e. for each significant modification at its network i.e. regime of operation.
- 5 When there are not any changes of data for years, instead of submitting data again, the user may send written statement expressing that there are not any changes of data in relation to the previous period.
- 6 In coordination with the BiH ISO, the Transmission Company shall prepare the Plan using the data which the users submitted to the BiH ISO. The proposal of the plan shall be annually submitted to the BiH ISO until the end of July.
- 7 The Transmission Company shall submit the Development Plan of the transmission system to the BiH ISO for review, approval, direct auditing and publishing. When the BiH ISO finds it necessary to make certain modifications, it may ask the Transmission Company to amend certain elements of the Development Plan of the transmission system.
- 8 The BiH ISO shall inform the Transmission Company about any material changes of the data submitted by the user which might cause additional estimate before being included in the Development Plan of the transmission system.
- 9 Development Plan of the transmission system with included both, temporary and anticipated data, contain:
 - a) inspection of the transmission lines and cables with technical details,
 - b) maximum and minimum capacity of generation units including the planned overhauls,
 - c) maximum and minimum active and reactive capacity of the consumption nodes and time of their achievement,
 - d) estimate of load of the transmission network elements based on the estimate and coincident maximum and minimum load of the transmission network beneficiary using the (n-1) reliability criteria,
 - e) losses in the transmission network,
 - f) estimate of the short-circuit currents for each network node,
 - g) estimate of the static and transient stability,
 - h) necessary system reinforcements and/or changes in the topological structure of the transmission network,
 - i) transmission capacity which might be available for third parties,
 - j) statistics of damages and period of interruptions due to damages and maintenance of the transmission lines and network transformers in the last five years,
 - k) necessary reconstruction and replacement of the transmission network elements and facility equipment (reconstruction, replacement of the primary and secondary equipment, expansion of the substation capacities, etc),
 - l) estimates of the necessary investments for realization of the proposed plans.
- 10 Before submitting it to SERC for approval, the BiH ISO shall organize direct audit of the Development Plan of the transmission system. The expert council for audit of the

Development Plan, established by the BiH ISO, consists of representatives of the BiH ISO, the Transmission Company and transmission network users.

1.8 ISO BiH procedures for provision of security

Having adopted the Law on transmission, regulator and system operator of electricity in BiH, the Law establishing the Transmission Company for electricity in BiH and the Law establishing the Independent System Operator in BiH, preconditions were created for realization of the BiH ISO's commitments within the scope of safety of operation of the BiH electric power system.

Pursuant to the Law, the BiH ISO shall ensure development and publishing of technical rules, which shall further on ensure minimum technical and operation requests for connection to the uniform electric power system of directly connected generation units, directly connected costumers to the transmission network and distribution systems within BiH.

The BiH ISO was defined as the responsible subject in development of the Indicative Plan for generation development for the next 10 years by these Laws and accompanying documents, Grid Code, in particular. The Indicative Plan shall serve as a basis for development of the Long-term Development Plan of the transmission network.

Drafting of the overall Energy Sector Study of BiH is currently ongoing – it is the basic document which shall define key development commitments at the state level of BiH from the point of view of development of consumption and its characteristics based on the sector analysis and resources building, i.e. usage of primary energy sources for generation of electricity, as well as the commitments from the standpoint of import, i.e. export of electricity.

The Indicative Plan for generation development is prepared by the BiH ISO every year for the next 10-year period based on data provided by generators, distribution companies and end users directly connected to the transmission system. It is updated every year and submitted to the BiH Elektroprenos as the basis for the Long-term Development Plan of the transmission network.

The aim of the Indicative Plan for generation development is to inform users (actual and future) on needs and projects related to construction of new generation capacities. The following items shall be taken into account in the process of the generation planning:

- a) necessary generation capacities to meet peak loads,
- b) energy balances at the transmission network,
- c) reserves in the capacity and energy and possible deficits,
- d) compliance with the Development Plan of the transmission system;
- e) fulfillment of the energy requirements from their own sources as the basic criterion for creation of the Indicative Plan of generation development.

While creating the Indicative Plan for generation development, the BiH ISO shall, as much as possible, coordinate and share information with parties responsible for creation of the generation development plans. The BiH ISO shall annually submit the Transmission System Development Plan and the Indicative Plan for generation development to SERC for approval. Upon the approval, the BiH ISO shall publish the Plans and make them available to all stakeholders.

The BiH ISO is also responsible, pursuant to the UCTE Operation Handbook and the Grid Code, for application of the defined technical criteria, while the Market Rules entitle it to apply economic criteria related to provision and engagement of primary, secondary and tertiary reserves of the electric power system.

1.9 Construction of new generation capacities in Bosnia and Herzegovina

1.9.1 Planned construction of new generation capacities in BiH Federation

The increased electricity consumption requirements shall request the construction of new energy capacities. In that sense, the Indicative Plan for construction of new energy sources was made at the BiH level, based on the coal, hydro-power and wind-power sources.

In order to stimulate construction of new capacities, in the absence of the Energy Development Strategy in BiH, for the purpose of construction of new generation facilities for the electricity generation in FBiH, the FBiH Government made, in the period 2005-2006, the appropriate documents on three different occasions intending to initiate the investment process in the FBiH electricity sector, such as:

- **Plan for construction of new generation electric power capacities in Federation of Bosnia and Herzegovina** with appropriate conclusions (January and June 2005);
- **Decision on adoption of modifications of the Plan for construction of new generation electric power capacities** in Federation of Bosnia and Herzegovina, June 2005;
- **FBiH Conclusion**, charging the respective Federal Ministry of Energy, to initiate the activities related to the public invitation to demonstrate the interests in the strategic partnership in the electric power projects' implementation.

As a direct consequence of these initiatives, in July 2006, the public invitation was published for expression of interests for the strategic partnership in implementation of new investment projects within the electric power sector in FBiH.

It is planned to construct the thermal and hydro power plants in approximate capacity of 2,500 MW (TPPs - Tuzla, Kakanj, RiTE Bugojno, Kongora, HPPs - Ustikolina, Vranduk, Vrilo, Rmanj Monastery, Konjic, Glavaticevo, Vrhpolje, Caplje, Mostarsko Blato, etc).

In the region of Herzegovina, possibilities for construction of wind power plants were investigated at 4 sites, in total capacity of approximately 130 MW.

A number of small HPPs was either constructed or is being in the process of construction.

Having constructed these resources, electricity generation (intended for the export as well) would be considerably increased.

The Law on Electricity ("Official Gazette of FBiH" number 41/02, 24/05 and 38/05), by using a new approach in this area, defined new principles in the sphere of the tariff policy and relationships with electricity customers in FBiH; based on it, the Regulatory Commission for electricity in FBiH (FERC), is in charge of:

- supervision and regulation of relationships between generation, distribution and customers of electricity, including electricity traders,
- prescribing methodology and criteria for determination of the supply prices for non-eligible (tariff) customers of electricity,
- determination of tariff rates for distribution system users and tariff rates for non-eligible (tariff) customers,
- issuance or revocation of the licenses for generation, distribution, supply and trade of electricity,
- issuance of the initial licenses for construction of the electric power facilities other than electric energy transmission facilities,
- determination of the General Conditions for delivery of electricity.

Apart from the FBiH Decision on methodology for determination of redemption prices of electricity from the renewable sources of the installed capacity up to 5 MW (2002), there have not yet been developed other documents giving implicit and explicit incentives for construction of energy capacities, except guidelines stipulated by the federal laws; the Law on regional planning and land use, the Law on electricity; the Law on concessions, the Law on water; the Law on environmental protection etc.

1.9.1.1 Investments in future generation in the next three years - FERC report

Until 25 April 2007, the Regulatory Commission for electricity in Federation of Bosnia and Herzegovina filed 5 applications for issuance of the initial licenses for construction of the electricity generation objects.

For the time being, it issued one initial license for construction of a small hydro electric power plant "Dubrava" at Kozicka Rijeka in the municipality of Gornji Vakuf/Uskoplje, to the company Wind Neretva from Konjic. The anticipated annual generation from this small HPP is 8,12 GWh.

The procedure related to issuance of the initial license for construction of the following generation facilities is currently ongoing:

- HPP Mostarsko Blato, on the river Listica-Jasenici, municipality of Mostar, the applicant is Public Company Elektroprivreda HZ HB joint-stock company Mostar; the anticipated annual generation from this hydro power plant is 170 GWh;
- sHPP Lukac T3, on the river of Tresanica, municipality of Konjic, the applicant is Wind Neretva from Konjic; the anticipated annual generation from this small HPP is 8,628 GWh. The procedure was suspended because of revocation of the environmental license by the respective ministry;
- sHPP Tresanica 4, on the river of Tresanica, municipality of Konjic, the applicant is Amitea from Mostar; The anticipated annual generation from this hydro electric power plant is 7,07 GWh;
- sHPP Osanica 4, on the river of Osanica, municipality of Gorazde, the applicant is Eco Energy from Tuzla; the anticipated annual generation from this small HPP is 2,583 GWh.

Competences of FERC

Pursuant to Article 14 of the Law on electricity of FBiH ("Official Gazette of FBiH" number 41/02), FERC is in charge of issuance of the initial licenses for construction and licenses for use of the electric power objects apart from the electric energy transmission facilities. Article 75 and 76 of the Law on electricity defined the following:

- Construction of objects and facilities for generation and distribution of electricity, other than connections at low voltage, is subject to issuance of the initial license, pursuant to the Law;
- The initial license for construction of the generation facility is issued once the concession is obtained from the competent body, if necessary to obtain the concession right for such a facility, pursuant to the special law provisions;
- Objects and facilities for generation and distribution of electricity may be constructed by domestic and foreign legal persons under the conditions prescribed by these or other laws;
- Before the initial licenses for construction of the electric power structures and facilities for generation and distribution of electric energy are issued, the investor is obliged to get the consent for investment-technical documents pursuant to the law.

The Rule on issuance of licenses of FERC ("Official Gazette of F BiH", number 29/05), defines the criteria for issuance of the initial licenses for construction and reconstruction of the electric power structures:

- a) regular property-legal relationships to be in place for each piece of real property in the proposed construction plan;
- b) the planned facility shall comply with all technical, operational, safety and other conditions during exploitation period;
- c) it shall comply with all established criteria for protection of the environment and ensure the continued control of the impacts on environment;
- d) it shall have financial and technical capability to complete construction pursuant to the license requirements;
- e) the applicant or members of the management are neither punished for the economic offence nor pursuant to the criminal laws for fraud or financial irresponsibility, for significant violation of the license or protection of environment, within the scope of activity of the applicant;
- f) it shall ensure the accounting statements in a form and with details requested by FERC or other competent bodies;
- g) it shall show financial and technical capabilities to remove the waste occurred during the construction, and to dismantle all facilities and structures and to bring back the land to its initial state upon expiry of the license, pursuant to the Law;
- h) to ensure the appropriate financial warranties for construction, in order to ensure that the licensee shall comply with all license requirements;
- i) the applicant is obliged to obtain the concession if it is necessary to obtain the concession for such an object; to obtain the consent for the investment-technical documents.

1.9.2 Planned construction of new generation capacities in the Republika Srpska

The Ministry of Economy, Energy and Development in cooperation with the Regulatory Commission for Electricity of RS conducts the activities related to making the measures which would stimulate generation of electricity, in small hydro power plants (reservoir and run-of-river).

To date, the government of the Republika Srpska has awarded 100 concessions for construction of small hydro power plants with the power up to 5 MW. Out of these concessions three are issued for large hydro power plants on river Bistrica with total capacity of 41 MW. The total estimated capacity of the power plants for which the concessions have been awarded is 240 MW.

The total capacity of the planned large hydro power plants with capacity above 10 MW (system of HPP on river Vrbas, HPP Buk Bijela, Gornji Horizonti) amounts cca 1,400 MW.

Preparatory activities are underway related to construction of the second generator in TPP Gacko II and TPP Ugljevik II with capacity of 600 MW each.

The concession award activities are underway relating to construction of TPP Stanari with the capacity of 410 MW.

The total estimated capacity of the planned thermal power plants in the Republika Srpska amounts 1,610 MW.

1.9.2.1 Investments in future generation in the next three years - REERS report

Until 20 April 2007, the Regulatory Commission for Electricity of the Republika Srpska had not filed any application for construction of new generation capacities. REERS has no official information on the planned beginning of construction of generation capacities which the concessions were approved for.

Role of the Regulatory Commission for Electricity of the Republika Srpska

Based on the Law on electricity, in order to regulate monopolistic behavior and provide all participants in the electric energy market in the Republika Srpska with transparent and non-discriminatory position, the Regulatory Commission for Electricity (hereinafter REERS) has been established.

Competences of REERS are as follows:

- supervision and regulation of relationships between generation, distribution and customers of electricity including traders of electricity,
- prescribing methodology and criteria for determination of the supply price of electricity for non-eligible customers,
- determination of tariff rates for distribution system users and tariff rates for non-eligible customers,
- issuance or revocation of the licenses for generation, distribution and trade of electricity,
- determination of general conditions for delivery of electricity,
- issuance of the construction licenses.

While implementing its authorizations and functions, pursuant to its competences, REERS is obliged to:

- improve efficiency, reliability and cost-effectiveness of the system for generation, distribution and exchange of electricity,
- improve the competitiveness,
- stimulate efficiency, cost-effectiveness and safety in use of electricity,
- regulate the quality of services and tariffs and profitable prices, taking into account interests of customers and needs of the company for delivery of electricity,
- provide fairness in the electric energy supply,
- provide transparent and non-discriminatory behavior in the electric energy market,
- ensure that the electric power activity on the territory of the Republika Srpska does not have negative impact on health, safety and protection of the environment,
- create conditions for development of the electric power system (generation and distribution),
- make measures to prevent misuse of the monopolist behavior of the licensee, which license was issued by REERS.

Within the scope of its activities, REERS is obliged to issue the licenses both for realization of the electric power activities and construction of the electric power objects. While constructing a new electric power object, the investor is obliged to file an application for issuance of the construction license, i.e. to obtain the license for construction from REERS,

as it is defined by the *Rule on issuance of licenses and approvals of REERS* ("Official Gazette of RS", number 52/05).

The application for issuance of the license for construction is filed in a form prescribed by REERS and it contains the following details:

- details on the type of the electric power object,
- general details of the applicant,
- basic technical data for the electric power structure such as:
 - location and type of the generation facility,
 - description of the generation facility,
 - connection of the generation structure to the electric power system, and
 - possibly, data on customers of heat energy or technological vapor,
- as well as the list of appropriate statements and evidences.

The application should be accompanied by statements and evidence among which the most important are:

- Feasibility study;
- Environmental impact assessment study;
- Ecological permit;
- Water use permit;
- Electricity grid connection permit;
- Urbanistic permit.

Criteria for making decision on issuance of the license for construction

The license for construction is issued to each applicant that proves the following:

- to comply with all technical, operational and organization conditions for construction of the electric power structure,
- to comply with all established criteria related to protection of Environment following the standards and their constant supervision,
- to show that the planned object shall be capable to deliver safe and reliable electricity of satisfactory quality to customers,
- to have all technical and staffing possibilities to prepare its financial reports for REERS pursuant to the international accounting standards,
- the applicant confirms to comply with the concession requirements, offer or other requirements related to construction of the structure for generation or distribution of electricity, regarding the obligation to supply tariff customers,
- to comply with safety requirements of the plant and facilities related to health of people and functioning of the equipment and installations,
- all property-legal relationships were regulated regarding use of the land and determination of the site,
- to achieve the energy efficiency of the primary resources use,
- regularity of the electric energy supply was not considerably reduced due to construction or reconstruction of the electric power structures,

- to offer appropriate financial warranty in order to make sure that licensee shall comply with all license requirements,
- financial and technical capability to dismantle and/or remove the waste occurred during the construction, to arrange the land upon expiry of the license pursuant to the law,
- possibility to comply with all other requirements prescribed by the License.

2. NATURAL GAS

2.1 Gas Pipeline System in BiH

Bosnia and Herzegovina does not have its own sources of natural gas so its supplying is exclusively based on import of this energy source. For the time being, it is only from one source and using only one transport direction which is Beregovo - Horgos - Zvornik.

All amounts of the natural gas for Bosnia and Herzegovina are imported from the Russian Federation. They are transported along the transport direction through the transport systems of Ukraine, Hungary and Serbia.

The transport system of natural gas in BiH has the following main characteristics:

Length of the gas pipeline	191 km
Section of the gas pipeline	406,4 mm
Projected pressure	50 bars
Projected capacity	1 billion m3/annually

The actual rented transport capacity to Bosnia and Herzegovina is 750 million m3/annually, while the pressure of hand over of the natural gas in the handover station in Zvornik is 26 bars.

The gas pipeline was projected and constructed pursuant to the regulation ANSI B31.8; steel pipes were factory-insulated with poly-ethylene, and the whole system is covered with cathode protection.

There are 7 metering stations, 12 block stations and 4 cleaning stations at the transport system (Figure 6).



Figure 6. Scheme of the gas transport system of Bosnia and Herzegovina

2.2 Current Levels of the Peak Consumption of Gas and Expectations for the next Three Years

Natural gas is currently used only for the needs of the industrial and residential (commercial and households) sector, while the electricity sector has not yet been a customer of natural gas.

In 2006, total consumption of gas amounted to 0,363 billion m³. Forecasts of the gas needs in the period 2007-2010 are given in Table 7 below, according to the category of consumptions.

Table 7: Forecasted gas needs in the period 2007-2010

Gas Demand (bcm / year)	2007	2008	2009	2010
Industrial sector	0,143	0,290	0,290	0,310
Residential sector	0,166	0,178	0,178	0,190
Total	0,309	0,468	0,468	0,500

Bosnia and Herzegovina has a contract on delivery of gas with Gasexport, but it is not of long-term nature exclusively due to unsettled war debt with this Russian partner.

2.3 Current Available Import Capacity

Bosnia and Herzegovina has long-term contracts for transport of natural gas settled with foreign partners, as follows:

- With Mol for transport of natural gas through Hungary for the amounts of 0,6 bcm until 2018; and
- With Srbijagas for transport of natural gas through Serbia for the amounts of 0,6 bcm until 2017.

2.4 Investment in Future Import for the next Three Years

In the natural gas sector of BiH there is the plan of investments into the project of construction of the transport gas pipeline from the existing system in Zenica to Bosanski Brod, in approximate length of 120 km. This project shall provide a new transport direction with new input of natural gas to BiH and, on the long-term basis, a possibility for diversification of sources of supply with natural gas, having in mind that realization of this project would connect the transport system of Bosnia and Herzegovina to Croatian transport system. This project would create possibilities for more reliable supply of customers in BiH with natural gas, which puts this project in the priority level for the natural gas sector and it is required to make final decision for realization of this investment at the state level accompanied by the consent of the entity authorities having in mind previously established competences in the energy field at the level of entity.

In the Republika Srpska, based on the signed contract of concession on gasification of the north-eastern part of BiH, it is planned, in the forthcoming period the construction of the gas network as well as expansion of the existing gas network into the region of municipalities of Zvornik and Sarajevo. Having in mind a favorable layout of some major populated places in Republic of Srpska, and subsequently, potential customers of natural gas as well, the transport system is planned to be constructed through Semberija, Posavina and Krajina. This gas pipeline shall be connecting the towns of Bijeljina-Brcko-Modrica-Derventa-Prnjavor-Laktasi-Banja Luka-Prijedor-Novigrad, with their spreading towards the towns of Ugljevik,

Samac, Bosanski Brod, Doboj, Gradiska; it means that all major economic and urban centers shall be connected. The mentioned project shall also provide expansion of the gas network towards the territory of BiH Federation, i.e. construction of main line from Doboj to Zenica and Tuzla, which shall enable gasification of BiH.

Technical characteristics of the mentioned gas pipeline are as follows: capacity of 1,200 bcm/year, length of the main gas pipeline 300 km, length of shanks of all sections 156 km and total length of the gas pipeline 456 km.

The gas pipeline would be connected to the transport system of Republic of Serbia near Zvornik or Bijeljina, and later to the transport system of Republic of Croatia, shall provide diversification of directions of supply BiH with natural gas.