

2007 Annual Report

The background of the page is a complex abstract design. It features large, solid-colored geometric shapes in red, white, and blue. Overlaid on these are several thick, black, parallel lines that form a series of sharp, zigzagging angles, creating a sense of movement and depth. The overall composition is modern and dynamic.



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CONTENTS

Introduction 7

Employees 9

Legal and Organizational Structure of Company11

Stock Ownership and Stock Trade11

Shares in Bound Legal Persons11

Company Performance12

Profit and Loss Account12

Balance Sheet12

POWER GENERATION DIVISION

Introduction15

HPP RAMA17

HPP MOSTAR17

HPP PEĆ MLINI18

PSPP ČAPLJINA18

HPP JAJCE I21

HPP JAJCE II21

HPP Mostarsko Blato under Construction22

Development Projects29

POWER DISTRIBUTION DIVISION

Distribution Facilities35

POWER SUPPLY DIVISION

Introduction41

Performance and Activities in 200742

Map of Power System in BiH44



Management of
Company



Supervisory Board of
Company

INTRODUCTION

Elektroprivreda Hrvatske zajednice Herceg Bosne, d.d. Mostar (EPHZHB), a public company for power generation, distribution and supply is one of three power utilities in Bosnia and Herzegovina.

It was established on August 28, 1992 and since it has operated in 36 municipalities in the Federation of Bosnia and Herzegovina.

Since April 28, 2004 it has been a joint stock company and the stock capital of the company includes 10% joint-stock capital and 90% state capital.

Elektroprivreda HZHB has six hydro power plants (HPPs Rama, Mostar, Jajce I, Jajce II, Peć Mlini and PSPP Čapljina) with the total capacity of 792 MW. The total power generation in 2007 was 1124,07 GWh.

The total length of the 10, 20 and 0.4 kV distribution overhead and underground network is 10,848 km and of the 35 kV network is 283.7 km.

On December 31, 2007, EP HZ HB supplied 181,853 customers, including Aluminij d.d. Mostar company as the biggest customer in the area of Bosnia and Herzegovina.

At the end of 2007, EP HZ HB d.d. Mostar had 1615 employees.

Last year, EP HZ Herceg Bosne operated at a loss of KM 59,271,093. The reasons for this loss are the decisions of FERC on tariffs according to which the electricity prices were increased by a lower percentage than the request in the tariff proceedings, and the fact that all hydro power plants generated less power than the plan because of bad hydrology.

Starting from the legal obligation of safe supply of customers with high-quality electricity and on the basis of the available historical and recent research indicating a considerable potential in renewable sources and coal, the "Integral Development Study of JP Elektroprivreda HZ HB d.d. Mostar for the Period of 2006-2010 with Projection to the Year 2020" was prepared. Its complete strategy was included in the BiH development strategy study.

The HPP Mostarsko Blato which construction is in progress will contribute to solving the problem of balancing the generation and increasing demand,

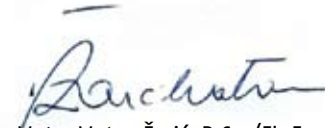


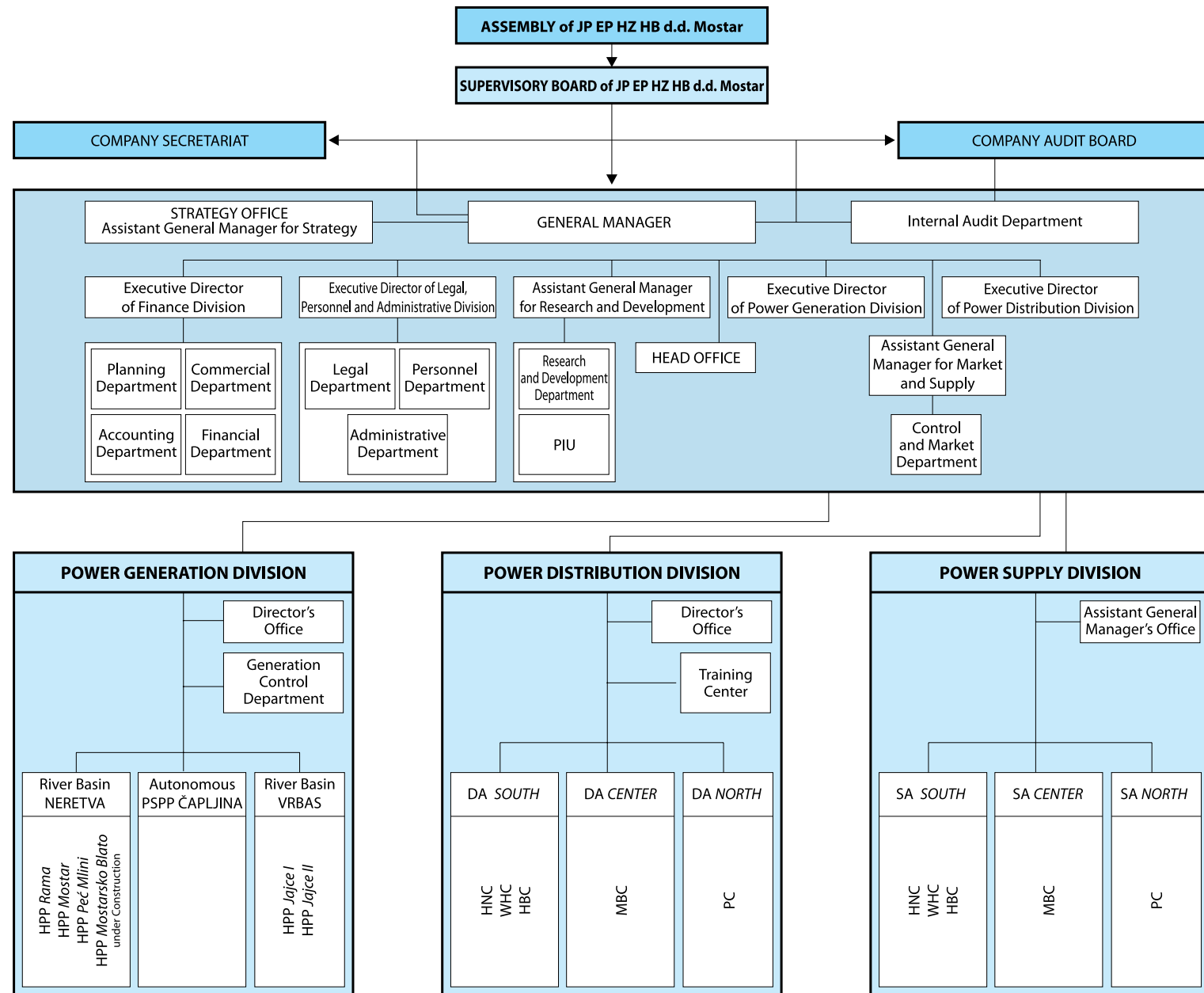
and of electricity import. We expect the beginning of construction of the HPP Vrilo and small hydro power plants in Herceg Bosnia Canton in the Cetina river basin, four small hydro power plants in the Trebižat river basin, two small hydro power plants in the Lištica river basin and three plants in the Vrbas river basin: Ugar, Vrletna Kosa and Han Skela.

In 2007, special consideration was given to the projects for the use of wind energy and to intensive negotiations with the European Bank for Reconstruction and Development and local community about implementation of the project of the wind parks: Borova Glava, Mesihovina and Velika Vlačina with the installed capacity of 128 MWh and annual output of 366 GWh.

We did the necessary additional research and prepared the study on classification, categorization and estimate of the lignite reserves in Kongora Deposit for the future thermal power plant Kongora with the annual output of 3000 GWh.

To adjust the business operation to new challenges of opening the electricity market, a study on optimal control of EP HZ HB hydro power plant generation was prepared. It establishes the complete concept of the generation planning and control.


Mato-Matan Žarić, B.Sc. (El. Eng.)
General Manager



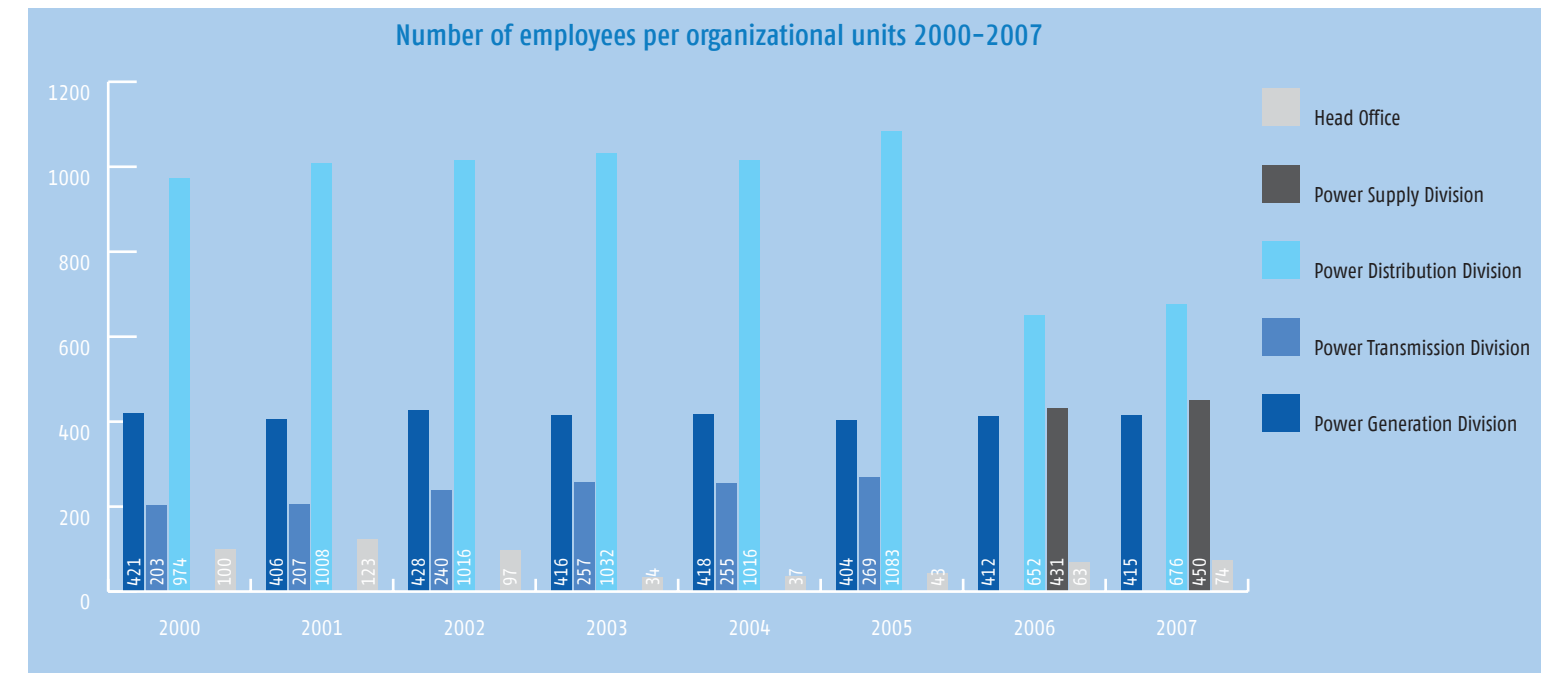
EMPLOYEES

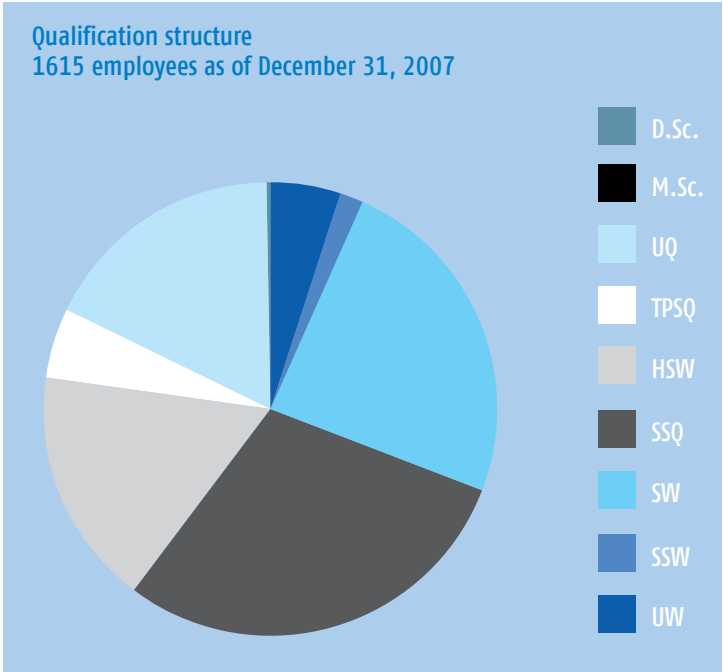
On December 31, 2007 JP "Elektroprivreda HZ Herceg-Bosne" d.d. Mostar had 1615 employees. In comparison with the end of 2006, the number of employees was increased by 3.7% or 57 employees.

Comparing the qualification structure of the employees at the end of 2007 and at the end of 2006, the number of the highly qualified employees (UQ – university qualifications and TPSQ – two-year post-secondary school qualifications) was increased. This will undoubtedly have a positive effect on successful carrying out of the given tasks.

During 2007, the company continued sending its employees to workshops, courses and other types of professional training and employed a number of trainees and awarded scholarships to the students to have jobs in high demand.

JP "Elektroprivreda HZ Herceg-Bosne" d.d. Mostar has good age distribution. About 38% of the employees are under 40 and this enables comparatively easy adaptation to new working and operating conditions.





Key: UQ (University qualifications); TPSQ (Two-year post-secondary school qualifications); HSW (Highly skilled worker); SSQ (Secondary school qualifications); SW (Skilled worker); SSW (Semi-skilled worker); UW (Unskilled worker)

Qualification	Power Generation Division		Power Distribution Division		Power Supply Division		Head Office		TOTAL		Index 11/10	Structure in %
	Dec. 31, 2006	Dec. 31, 2007	Dec. 31, 2006	Dec. 31, 2007	Dec. 31, 2006	Dec. 31, 2007	Dec. 31, 2006	Dec. 31, 2007	Dec. 31, 2006	Dec. 31, 2007		
1	2	3	4	5	6	7	8	9	10	11	12	13
UW	46	42	31	33	5	5	2	2	84	82	97.6	5
SSW	2	2	18	19	6	5	0	0	26	26	100.0	2
SW	80	73	160	182	140	134	1	1	381	390	102.4	24
SSQ	117	113	164	162	173	189	12	13	466	477	102.4	30
HSW	76	82	173	152	41	39	0	0	290	273	94.1	17
TPSQ	19	21	38	40	17	18	2	2	76	81	106.6	5
UQ	70	80	68	88	48	59	45	55	231	282	122.1	17
M.Sc.	1	1	0	0	1	1	1	1	3	3	100.0	0
D.Sc.	1	1	0	0	0	0	0	0	1	1	100.0	0
TOTAL	412	415	652	676	431	450	63	74	1558	1615	103.7	100

LEGAL AND ORGANIZATIONAL STRUCTURE OF COMPANY

JP “Elektroprivreda Hrvatske zajednice Herceg Bosne”, a joint stock company, with the headquarters in Mostar, 106 A Mile Budaka (hereinafter called: Company) has had the legal continuity since November 17, 1992 when the public company “Elektroprivreda Hrvatske zajednice Herceg Bosne” Inc. was registered in the register of companies of the Higher Court in Mostar under No. 1-3177. In July 1996, the company was transformed into a limited liability company with the name Javno poduzeće “Elektroprivreda Hrvatske zajednice Herceg Bosne” d.o.o. Mostar.

According to the valid Decision on Approval of Registration of Privatization in the Register of Companies of the Agency for Privatization in BH Federation No: 03-19-185/04 of January 15, 2004, 10% state capital of the Company was privatized.

Pursuant to the provisions of the stated Decision of the Agency for Privatization in BH Federation and provisions of Article 76 of the Law on Amendments of the Law on Economic Subjects (Official Gazette of BiH Federation No.29/03), the first meeting of the Assembly of the joint stock company JP “Elektroprivreda Hrvatske zajednice Herceg Bosne d.d. Mostar was held on March 8, 2003.

STOCK OWNERSHIP AND STOCK TRADE

According to the Decision of the Agency for Privatization in BH Federation on Approval of Privatization Programme and Company Initial Balance Sheet, in 2002, the public subscription for stocks in the second round was carried out and 10% stock capital amounting to BAM 73,616,600 was sold.

The largest share among residents-legal persons is owned by the Government of BH Federation (6,626,306 stocks or 90%) and the rest (735,354 stocks or 10%) is owned by investment funds, residents and non-residents – legal and natural persons.

On September 15, 2004, JP “Elektroprivreda Hrvatske zajednice Herceg Bosne d.d. Mostar was included in SASE- the Sarajevo Stock Exchange under the issuer symbol JPEMR and the starting stock value was BAM 50. During the period of 2.5 years, the JPEMR stock value was increased more than 3 times and on December 31, 2006, the stock exchange quotation was BAM 155. At the beginning of 2007, the stock value was BAM 154.1 and JPEMR was included in the MFTS trading plan. This is a permanent trading plan and it is characteristic of the stocks with a certain level of liquidity, frequency and intensity of trading in the stock exchange.

JPEMR was included in the SAX-10 group i.e. in the group of 10 issuers with the highest market capitalization value. At the beginning of July, 2007, the third regular audit of the SAX-10 stock exchange index was done. After the audit, JPEMR was in the third place of issuers with a share of 14.34%. At the end of June, 2007, the stock value was considerably increased (BAM 235) but at the end of the year it was reduced. At the end of December, its market value was BAM 177.38.

SHARES IN BOUND LEGAL PERSONS

JP “Elektroprivreda Hrvatske zajednice Herceg Bosne d.d. Mostar has a share in the stock capital of the company “Konstruktor-Neretva” d.o.o. Čapljina amounting to BAM 859,665. During 2006, the company stock capital was increased by investment of the member Konstruktor-inženjering d.d. Split. This resulted in the decrease of our company share to 14%. In the period January-December, 2007, the company “Konstruktor-Neretva” d.o.o. Čapljina operated at a gross profit of BAM 53,937.

Elektrokontrol HZ Herceg Bosne Čapljina, in which stock capital of BAM 432,500.00 JP “Elektroprivreda Hrvatske zajednice Herceg Bosne d.d. Mostar has a share of BAM 247,139 or 57.14%, operated at a gross profit of BAM 114,842.

COMPANY PERFORMANCE

In the period January – December, 2007, JP “Elektroprivreda HZ Herceg Bosne” d.d. Mostar operated at a loss of BAM 59,271,093.

We must point out that, in spite of special efforts of all employees to achieve as good financial results as possible, it was difficult to achieve them. We expected such a bad situation.

The reason can primarily be found in tariffs.

After the tariff proceedings, the Federal Energy Regulatory Commission – FERC did not approve the necessary requested income. So the approved electricity prices for tariff customers were increased by a lower percentage than the request .

By April 27, 2007, the tariffs from the previous year were applied. According to the decision by FERC, new tariffs increased by a lower percentage than the request have been applied since May 1,2007.

On the basis of the decisions by FERC, our company costs and and expenses to the amount of BAM 48.9 M were not recognized. They considerably affected the necessary income from the regulated activity.

Bad operating results were partially caused by less power generation than the plan because of bad hydrology during all months in 2007.

For all mentioned reasons, the company had the problem of insolvency that had to be solved by short-term credits.

PROFIT AND LOSS ACCOUNT

The total revenue was BAM 345,499,374. It was lower than the plan by 14% and lower than in the previous year by 7%.

The operating revenues (electricity sale revenues and service revenues) were BAM 334,649,501. They were lower than the plan by 3%. The

electricity sale revenues include the revenues on sale to tariff customers on the distribution voltage levels (50.5%), the revenues on sale to tariff customers on the 110 KV and higher levels – Aluminij d.d. Mostar and Railways of FBiH (34.1%) and the revenues on international trade – electricity exports and sale of tertiary reserve power (15.4).

The financing revenues (interest and exchange rate differentials) were BAM 3,226,724. They were 2.58 times higher than the plan.The reason for the increase was collection from Elektrobosna – N Jajce according to the decision on partial settlement as interest on the total debt amounting to BAM 1,572,700.

In other revenues (BAM 7,623,149), the amount of BAM 3,721,168 was the revenue on collection of the debts uncollected in the previous years.

The total expenses were BAM 404,770,467.They were higher than the plan by 1% and higher than in the previous year by 10%.

The operating expenses were BAM 381,730,104, financing expenses (interest and negative rate of exchange differentials) were BAM 1,842,351 and other expenses were BAM 21,198,012.

BALANCE SHEET

On December 31, 2007, the company assets value was BAM 1,152,140,047. It was lower than on December 31, 2006 by 2%.

The value of the fixed assets was increased by 3% and of the current assets reduced by 25% as a result of the decrease in cash and cash equivalents by BAM 40,693,505 and other short-term receivables by BAM 6,753,475 (VAT receivables – input tax).

Because of the declared loss in 2007, the company capital was lower than on December 31, 2006 by 6%. Lower solvency than in 2006 resulted in the increase in long-term (4%) and short-term (64%) liabilities.

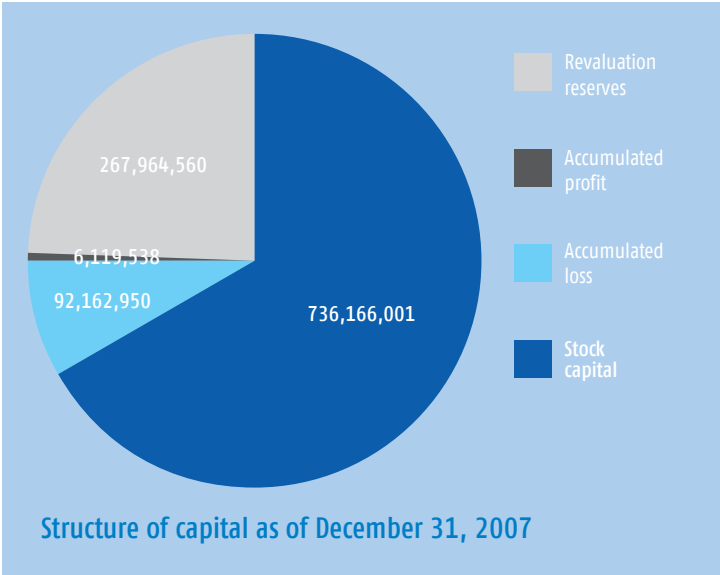
The company had the problem of insolvency that had to be solved by short-term credits.

The vertical (structural) analysis of the assets shows a share of the fixed assets of 88% and current assets of 12%.

In the structure of liabilities, a share of the capital was 80%, long-term liabilities of 12% and current liabilities of 8%.

In the structure of long-term liabilities, a share of the deferred income was 53% and long-term credits 47%.

In the structure of capital, the stock capital was BAM 736,166,001.00, special revaluation reserves were BAM 267,964,560, accumulated profit was BAM 6,119,538 and accumulated loss was BAM 92,162,950.



Balance Sheet	2006	2007	Index
Fixed assets	992,417,426	1,018,122,574	103
Current assets	177,744,369	134,017,473	75
ASSETS	1,170,161,795	1,152,140,047	98
Capital	977,457,334	918,087,149	94
Long terms liabilities	136,338,362	141,718,830	104
Current liabilities	56,366,099	92,334,068	164
LIABILITIES	1,170,161,795	1,152,140,047	98
Operating results			
Core activities revenue	362,209,107	334,649,501	92
financing revenues	1,245,154	3,226,724	259
Other operating revenues	6,803,876	7,623,149	112
REVENUES	370,258,137	345,499,374	93
Operating expenses	338,849,151	381,730,104	113
Financing expenses	1,801,001	1,842,351	102
Other expenses	28,605,766	21,198,012	74
EXPENSES	369,255,918	404,770,467	110
Profit / Loss	1,002,219	-59,271,093	-5914



POWER GENERATION DIVISION

INTRODUCTION

The Power Generation Division is a part of JP "Elektroprivreda HZ Herceg Bosne" d.d. Mostar which core activity is power generation but auxiliary and system services are also provided. The total capacity of six hydro power plants (HPPs Rama, Mostar, Jajce I, Jajce II, Peć Mlini and PSPP Čapljina) is 792 MW. The HPP Mostarsko Blato (2x30 MW) with the planned annual output of 167 GWh is expected to be put into operation in the last quarter of 2009. The operating conditions in all hydro power plants are very good and they are included in the system of generation remote control from the Main Dispatch Centre of EP HZ HB in Mostar. Activities on the projects of power generation from renewable sources are in progress. This would provide additional MWs for the needs of EP HZ HB.



HPP RAMA

The hydro power plant Rama is the largest plant in the system of the hydro power plants on the Neretva river. It is located in Herzegovina– Neretva Canton. The power house is situated by the road Jablanica–Rama and the dam and reservoir in the very vicinity of the town of Prozor–Rama. It was put into operation in 1968.

MAIN DATA	Number of generating sets	2	
	Installed capacity	160	MW
	Plant type	Derivation storage	
GENERATORS	Type	3-phase synchronous	S-4758-16
	Manufacturer	Končar	
	Put into operation	1968	
	Nominal power	90	MVA
TURBINES	Type	Francis	
	Manufacturer	Litostroj	
	Installed capacity	80	MW
DAM and RESERVOIR	Dam construction height	103	m
	Dam height	96	m
	Hydraulic height	89	m
	Crest length	230	m

HPP MOSTAR

The hydro power plant Mostar is the last plant in the range of the plants constructed on the Neretva river and is located 3.73 km upstream of the city of Mostar in Herzegovina– Neretva Canton. It was put into operation in 1987 and again in 1997 after rehabilitation of the war damages.

MAIN DATA	Number of generating sets	3	
	Installed capacity	72	MW
	Plant type	Dam storage	
GENERATORS	Type	3-phase synchronous	S-6546-40
	Manufacturer	Končar	
	Put into operation	1987/1988	
	Nominal power	30	MVA
TURBINES	Type	Kaplan	K – 5
	Manufacturer	Litostroj	
	Installed capacity	23.6	MW
DAM and RESERVOIR	Dam construction height	44	m
	Dam height	28	m
	Crest length	255.6	m
	Crest elevation	81	m a.s.l.

HPP PEĆ MLINI

The hydro power plant Peć Mlini is located in the municipality of Grude in West Herzegovina Canton. It collects the Tihaljina water at the height difference of 107 m between the Imotski-Grude field – Nuga and power house in the Petnik hill foot in Peć Mlini. It was put into operation in 2004.

MAIN DATA	Number of generating sets	2	
	Installed capacity	15	MW
	Plant type	Derivation run of river	
GENERATORS	Type	3-phase synchronous	
	Manufacturer	Končar	
	Put into operation	2004	
	Nominal power	18	MVA
TURBINES	Type	Francis	K – 5
	Manufacturer	Litostroj	
	Installed capacity	15.88	MW

PSPP ČAPLJINA

The pumped storage power plant is located on the lower Trebišnjica river in Herzegovina- Neretva Canton. It collects its catchment inflow water and the Trebišnjica water through the Popovo field. It was put into operation in 1979.

MAIN DATA	Number of generating sets	2	
	Installed capacity	420	MW
	Plant type	Pumped storage	
GENERATORS	Type	3-phase synchronous	
	Manufacturer	AEG	
	Put into operation	1979	
	Nominal power	240	MVA
TURBINES	Type	Francis	
	Manufacturer	Riva – Calconi	
	Installed capacity	210	MW
DAM and RESERVOIR	Upper reservoir level – maximum	231.5	m a.s.l.
	Upper reservoir level – minimum	224	m a.s.l.
	Nominal discharge – turbine operation	112	m³/sec
	Nominal discharge – pump operation	85	m³/sec





HPP JAJCE I

The hydro power plant Jajce I is located on the left bank of the Vrbas river by the road Jajce- Banjaluka in Middle Bosnia Canton. It is 7 km far from the town of Jajce. It collects the water of the Big Pliva lake which is situated at the height of 428 m asl. It was put into operation in 1957.

MAIN DATA	Number of generating sets	2	
	Installed capacity	60	MW
	Plant type	Derivation run of river	
GENERATORS	Type	3-phase synchronous	
	Manufacturer	Končar	
	Put into operation	1957	
	Nominal power	36	MVA
TURBINES	Type	Francis	
	Manufacturer	KMW	
	Installed capacity	30	MW
DAM and RESERVOIR	Minimum operating reservoir level	425.8	m a.s.l.
	Maximum operating reservoir level	427.1	m a.s.l.
	Headrace tunnel length	5700	m
	Headrace tunnel diameter	5.4	m

HPP JAJCE II

The hydro power plant Jajce II was constructed on the Vrbas river 17 km downstream of the town of Jajce in Middle Bosnia Canton. It was put into operation in 1954.

MAIN DATA	Number of generating sets	3	
	Installed capacity	30	MW
	Plant type	Derivation run of river	
GENERATORS	Type	3-phase synchronous	
	Manufacturer	Končar	
	Put into operation	1954	
	Nominal power	12.5	MVA
TURBINES	Type	Francis	
	Manufacturer	Voith + Litostroj	
	Installed capacity	10	MW
DAM and RESERVOIR	Minimum operating reservoir level	326.5	m a.s.l.
	Maximum operating reservoir level	328.5	m a.s.l.
	Headrace tunnel length	2880	m a.s.l.
	Headrace tunnel diameter	5.5	m

HPP MOSTARSKO BLATO UNDER CONSTRUCTION

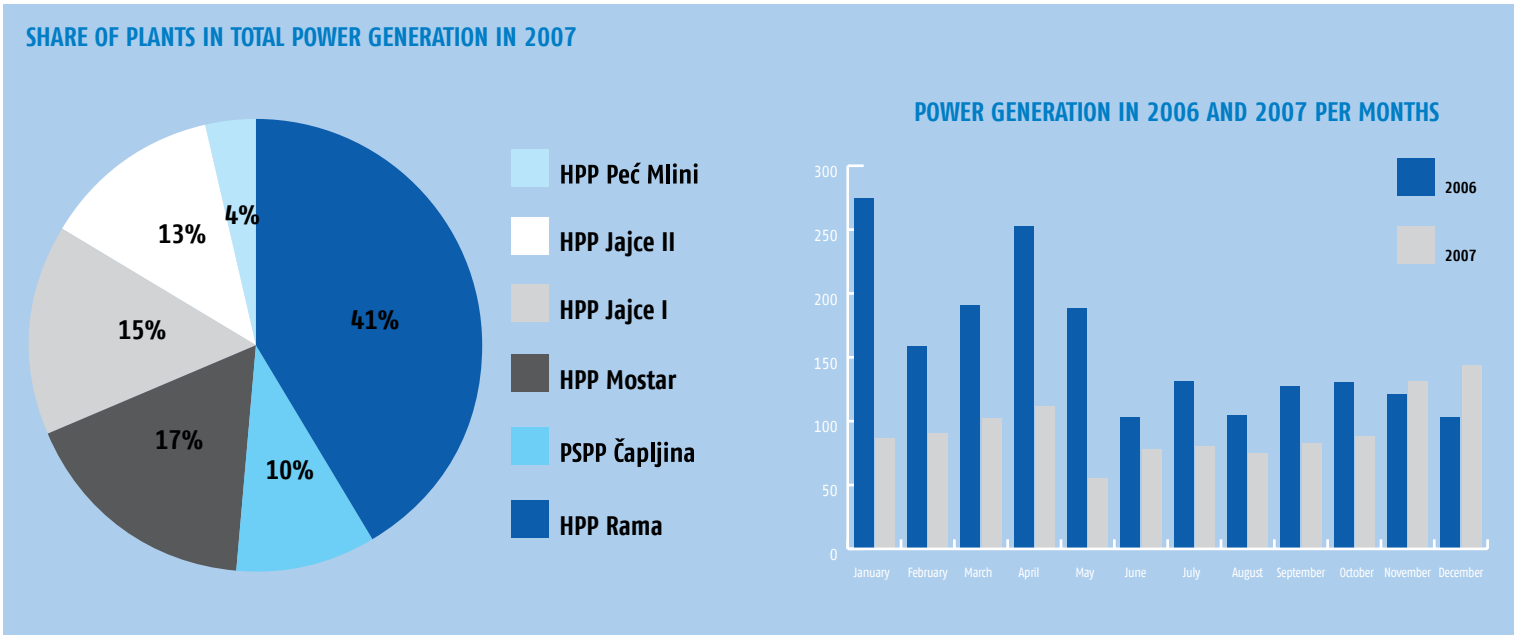
1. Preparation and Delivery of General and Final Designs for HPP Mostarsko Blato
The design team of Elektroprojekt prepared most of the building designs for the facilities of the HPP Mostarsko Blato. Preparation of the building designs for the tailrace basin and flood channel is at the final stage.
2. Mechanical and Electrical Equipment
The intake gate and draft tube elbows for both generating sets were installed.The generator housings and supports were assembled and ready for completion of the stator. Other mechanical and electrical equipment for the plant is being manufactured.
3. Construction of Intake Structure, Headrace Tunnel, Surge Chamber and Valve Chamber
The intake structure was constructed. The intake gate was installed and other mechanical and electrical equipment is expected to be installed. Excavation for the headrace tunnel is at the final stage.
4. Construction of Penstock, Power House, Tailrace Basin and Flood Channel
Excavation for the power house and a section of the penstock is completed and the concrete reinforcement work started. The draft tube elbows were installed in the power house.
Due to some geological changes noticed after excavation, there are some problems in the penstock being solved during construction. Excavation of the upper elbow and construction of the access roads for other supports are in progress.
5. In 2007, the following activities were carried out:
 - The Federation Ministry of Regional Planning issued the necessary permits for the headrace tunnel, intake structure, surge chamber, valve chamber, power house and penstock
 - Preparation of the necessary documents for obtaining the building permit for the tailrace basin, flood channel and reservoir
 - Construction of the access roads/completion of the access road toward the power house
 - Construction of the intake structure – 80%
 - Construction of the headrace tunnel

- Earth work – 90%
- Concrete work i.e. concreting the tunnel lining started from the downstream side
- Construction of the surge chamber – excavation
- Construction of the valve chamber – excavation
- Construction of the power house– the earth work completed, foundation pad constructed, concreting the walls started
- Construction of the penstock – earth work

Osnovni tehnički podaci

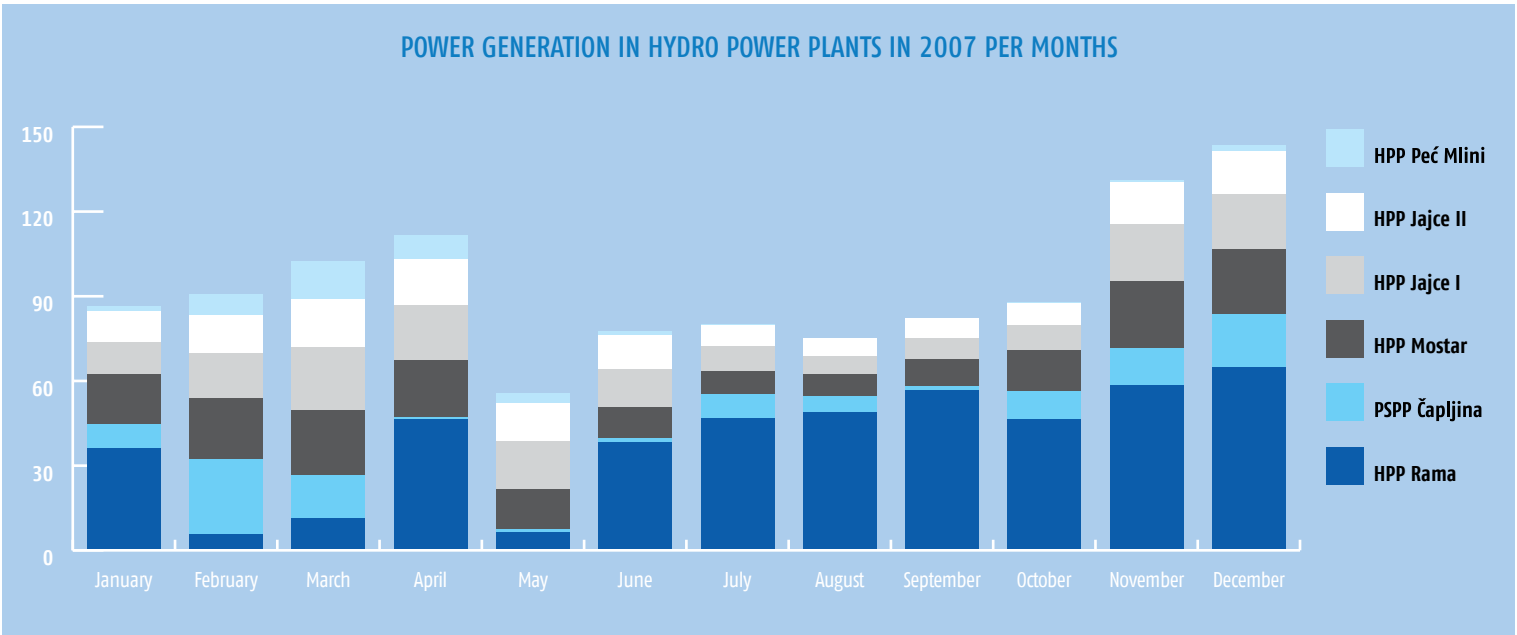
Plant type	Derivation storage
Number of generating sets	2
Turbine type	Francis,vertical
Rated discharge (m3/s)	2x18; max. 2x20
Maximum gross head(m)	182
Gross head for normal operating reservoir level 223.50 (m); tail water level 48.00	176.50
Gross head for minimum operating reservoir level 221.50 (m); tail water level 47.00	174.50
Gross head for maximum operating reservoir level 229.00 (m); tail water level 48.00; Q=18m3/s	181
Maximum head for maximum operating reservoir level 229.00 (m); tail water level 48.00; Q=7.2m3/s	180.55
Net head for normal operating reservoir level 223.50 (m); tail water level 48.00; Q=18m3/s	172.70
Minimum head for minimum operating reservoir level 221.50 (m); tail water level (m) 49.00	163.32
Rated speed of rotation (o/min)	500
Nominal power(MVA)	2x35.300
Generator rated voltage (V)	10 500 V± 5%
Generator rated power factor	0.85
Rated capacity at sill (MW)	2x29.880
Maximum and minimum capacity (MW)	2x32.650 i 9.851
Mean annual output(GWh)	167 GWh
Block transformer rated power (MVA);	35.3
Transmission ratio(kV/kV); tapping range	10.5/115; ±2x2.5%
Tapping	Longitudinal; Under zero voltage



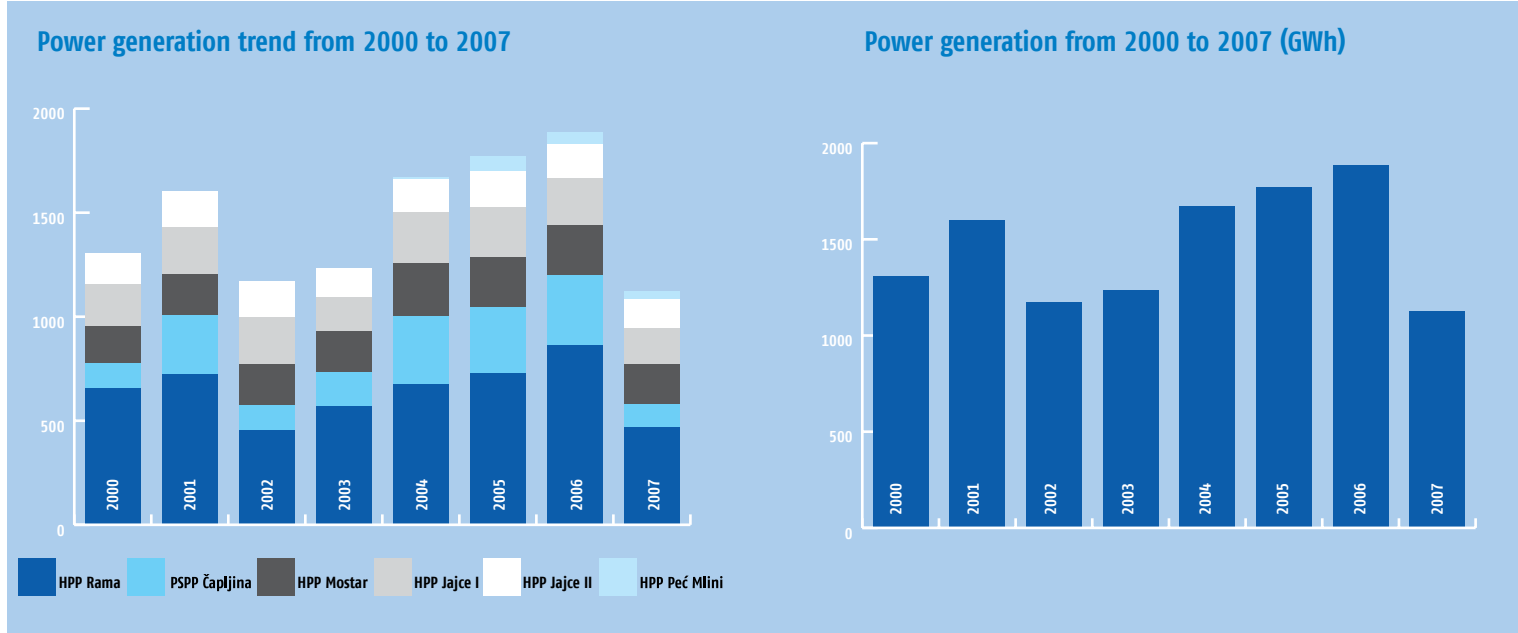


	2006	2007
HPP Rama	864.64	467.03
PSPP Čapljina	331.68	111.24
HPP Mostar	242.47	193.33
HPP Jajce I	229.07	170.90
HPP Jajce II	161.70	141.79
HPP Peć Mlini	55.22	39.79
TOTAL	1884.79	1124.07

	2006	2007
January	274.41	86.54
February	158.63	90.59
March	190.98	102.37
April	252.48	111.67
May	188.51	55.56
June	102.61	77.68
July	131.48	79.91
August	104.36	75.06
September	127.17	82.23
October	130.35	87.72
November	120.96	131.14
December	102.86	143.60
TOTAL	1884.79	1124.07



	HPP Rama	PSPP Čapljina	HPP Mostar	HPP Jajce I	HPP Jajce II	HPP Peć Mlini	TOTAL
January	36.03	8.69	17.64	11.40	10.72	2.05	86.54
February	5.72	26.69	21.43	16.04	13.42	7.29	90.59
March	11.57	15.20	22.71	22.40	17.07	13.43	102.37
April	46.62	0.43	20.42	19.32	16.39	8.51	111.67
May	6.48	1.07	13.89	17.19	13.66	3.28	55.56
June	38.35	1.33	10.92	13.76	11.69	1.64	77.68
July	46.74	8.53	8.18	8.68	7.61	0.18	79.91
August	49.08	5.64	7.79	6.33	6.03	0.19	75.06
September	56.72	1.33	9.60	7.50	6.98	0.09	82.23
October	46.57	9.86	14.29	8.87	8.05	0.06	87.72
November	58.36	13.39	23.62	19.91	15.17	0.69	131.14
December	64.79	19.07	22.85	19.49	15.01	2.39	143.60
TOTAL	467.03	111.24	193.33	170.90	141.79	39.79	1124.07



	2000	2001	2002	2003	2004	2005	2006	2007
HPP Rama	653.80	722.90	455.00	570.00	674.98	729.26	864.64	467.03
PSPP Čapljina	121.65	283.18	117.00	162.00	327.20	317.59	331.68	111.24
HPP Mostar	181.13	197.34	199.00	200.00	257.10	239.02	242.47	193.33
HPP Jajce I	197.95	226.81	229.00	163.00	241.48	240.63	229.07	170.90
HPP Jajce II	152.63	170.31	173.00	137.00	161.00	173.65	161.70	141.79
HPP Peć Mlini					6.89	68.53	55.22	39.79
TOTAL	1307.17	1600.54	1173.00	1232.00	1668.65	1768.69	1884.79	1124.07





DEVELOPMENT PROJECTS

The mission and vision of the Development Department of EP HZ HB including: availability of energy sources that God has given to this area for human needs, sustainable answers to global challenges, ensuring the stable energy sources and our own prosperity and the benefit for this area with environmental protection were proved to be right by adopting the “Integral Development Study of JP Elektroprivreda HZ HB d.d. Mostar for the Period of 2006–2010 with Projection to the Year 2020” and the “Study on Power Sector in BiH” that is at the final stage of preparation.

In line with these studies, we keep on working on development projects such as: Use of Wind Energy, Use of Hydro Energy, Kongora Lignite Mine and Thermal Power Plant shown in Fig.1. In addition, preparations for the project of use of solar energy are being made and we have to consider the place and role of EP HZ HB in the projects of gasification in this area.



Figure 1 Map of existing and planned generating facilities of JP EPHZHB

The project activities of the Development Department include the following:

1. Use of Wind Energy
2. Use of Hydro Energy
3. Kongora Lignite Mine and Thermal Power Plant – research continued
4. GIS Project

1. USE OF WIND ENERGY

After the activities on research and development that started in 2004, three wind farm projects are ready for implementation. They are Borova Glava – Livno (26 wind turbines x 2 MW), Mesihovina – Tomislavgrad (22 x 2 MW) and Velika Vljajna – Mostar (16 x 2 MW). The foreseen annual output in these wind farms is 370 MWh. There was the bidding procedure for preparation of the general design for all three wind farms and the commission gave its recommendation for selection of the consulting engineer firm. Three following projects are the wind farms Mokronoge, Srdani and Planinica. Besides, wind speed is measured in 15 measuring stations from Ivanjica in the south-east to Livno in the north-west. The measuring data are regularly processed and analyzed and we will implement the next projects as much as we can.

The necessary permits are being issued by competent authorities and institutions (municipalities, Elektroprijenos BH etc.). KfW Bank finances the Environmental Impact Assessment for the first three wind farms. An agreement between the Federal Republic of Germany and BiH was concluded and KfW Bank will finance the construction of the first wind farm with a possibility of further participation in the project implementation. Similar arrangements are being negotiated with other potential financiers: the European Investment Bank (EIB) taking the first place, EBRD, WB... there are many potential investors interested in implementation of these projects in cooperation with Elektroprivreda HZ HB.

2. USE OF HYDRO ENERGY

We talk about the projects of research and development of small, pumped storage and conventional hydro power plants in the Tihaljina – Mlade – Trebižat, Lištica, Gornja Cetina and Vrbas river basins. The total foreseen installed capacity is 187 MW. The projects are at different stages of development. At the most advanced stage are the projects of the small hydro power plants Klokun and Koćuša in which the Feasibility Studies were prepared. The Studies of Alternatives were prepared for the small hydro power plants Dubrava and Luke. There was the bidding procedure for preparation of the Feasibility Study for the small hydro power plants Kravice and Stubica and the commission gave its recommendation for selection of the consulting engineer firm. In the Vrbas river basin, the pre-feasibility studies were prepared for the hydro power plant Han Skela and the hydro power plants on the Ugar.

The description of the generating facilities with appropriate diagrams and the list of available documents of JP EP HZ HB for the T–M–T and Lištica river basins is given in the document “Water–Management Conditions for Construction of Small Hydro Power Plants: T–M–T and Lištica River Basins – Bases”, The Development Department, January, 2007. The proposal for the water–management conditions for the Upper Cetina river basin is given in the document “Water–Management Conditions for Construction of Hydro Power Plants: Upper Cetina River Basin – Bases”, June, 2007. The stated documents were sent to the relevant ministries and Public Company for “The Adriatic Sea Catchment Area” d.d. Mostar for approval.

In a close cooperation with the representatives of the ministries, energy regulatory commissions, power utilities...,The European Bank for Reconstruction and Development (EBRD) carried out the bidding procedure and signed the contract for preparation of the study “Strategic Environmental Assessment of Trebižat and Cetina River Basins” with the consulting engineer firm SNC–Lavalin International Inc, Montreal, Canada. The study will be prepared in accordance with the EU directives (Directive 2001/42/EC) and appropriate documents. In this bidding procedure, our company gave the technical and administrative support. The study should be prepared by April, 2009. This is a precondition for implementation of the projects for use of hydro energy.

3. KONGORA LIGNITE MINE AND THERMAL POWER PLANT

In the area of Kongora in the Duvno Plain, there are large amounts of coal with a low calorific value. The first research was done in 1956 and 1957, then in the period 1975 – 1978 when most of the research work was carried out and appropriate analyses and studies were prepared. Taking into consideration the results of the research and environmental protection principles, in 1997, Elektroprivreda Hrvatske zajednice Herceg Bosne gave Rheinbraun Engineering und Wasser GmbH Cologne, Germany the charge of preparing the pre-feasibility study – Integrated Lignite Mining and Power Project Kongora. The study was prepared in June, 1998 and proved that it is possible to extract energy coal in the “Kongora” coal deposit. The coal would be used as a fuel for a thermal power plant with the capacity of over 550 MW in the period of 40 years.

JP Elektroprivreda HZ HB provided the necessary funds to keep on the detailed research in this site with the objective of establishing the coal quantity and quality. Other research was also done for the needs of the Kongora lignite mine and thermal power plant. The work was carried out according to the Study on Detailed Additional Geological Research of Kongora Lignite Deposit near Tomislavgrad (the Faculty of Mining Engineering–Geology–Civil Engineering of Tuzla University, 2006) on the basis of the approval given by the Ministry of Economic Affairs of HB Canton. The work includes: research drilling with coring and excavation; laboratory coal testing and preparation of a study on coal quality; laboratory testing of physical–mechanical features of coal and accompanying seams with preparation of a geomechanical study; preparation of a study on the deposit classification and categorization; hydrological, meteorological and hydrological research.

Research drilling with coring and excavation
The research drilling was performed in the period August – November, 2007. The work was carried out by PU Geomarić – Geotehnika 94 Mostar. 49 boreholes were sunk with a total borehole depth of 6,039.50 m (Figure 2). The new borehole network is included in the existing borehole network. 80 research boreholes were sunk with a total borehole depth of 11,519.38 m.



Figure 2 Detail of core and drilling machine



LABORATORY COAL TESTING

The coal quality testing was made in parallel with the research drilling. The analyses were done by INSPEKT RGH Sarajevo. The control analyses of some parameters were also made in the laboratory of TE–TOL Ljubljana. A detailed testing of the following parameters was made: technical (immediate) coal analysis (Table 1), elementary coal composition, coal firing temperature, carbonate contents in coal, petrographical coal testing, coal grindability,

elementary ash composition (Table 2), ash meltability temperature, mineral–petrological testing of accompanying sediments, coal ash radioactivity, paleontological testing, coal volume and specific weight.

The table below gives the results of some analyses for individual coal seams i.e. for the deposit as a whole:

Weighted coal values for balance reserves															
Coal Seam	Share in Deposit (%)	Share Coefficient	Rough Moisture	Hygroscopic Moisture	Total Moisture	Ash	Volatile Matters	Burnable Matters	Coke	Fixed Carbon	Upper Heating Value	Lower Heating Value	Total Sulphure	Sulphure in Ash	Burnable Sulphure
Main Seam	51.77	0.5177	26.01	7.76	35.47	23.12	24.68	39.49	34.45	18.73	9519	8214	0.99	0.50	0.37
Interburden	5.52	0.0552	25.83	5.91	31.75	28.66	20.14	32.46	40.99	12.33	7194	6061	1.00	0.54	0.49
Top Seam	42.71	0.4271	26.13	6.46	33.28	28.20	21.47	33.46	40.29	12.02	7855	6632	1.59	0.62	0.94
Weighted values			26.05	7.10	34.33	25.60	23.06	36.53	37.30	15.51	8680	7420	1.25	0.55	0.62

Weighted values of ash chemical composition for balance reserves

Coal Seam	Share in Deposit (%)	Share Coefficient	SiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %	CaO %	MgO %	SO ₃ %	TiO ₂ %	Na ₂ O %	K ₂ O %	P ₂ O ₅ %	Acidity Coefficient
Main Seam	51.77	0.5177	38.00	9.02	27.76	13.27	1.73	7.19	1.10	0.16	1.27	0.14	2.495
Interburden	5.52	0.0552	48.12	8.04	28.94	5.76	1.97	3.77	1.09	0.18	1.68	0.13	4.207
Top Seam	42.71	0.4271	43.81	9.19	28.53	7.32	2.35	5.67	1.06	0.15	1.35	0.13	3.401
Weighted values			41.04	9.04	28.15	10.31	2.01	6.35	1.08	0.16	1.33	0.14	2.976

ESTIMATE OF RESERVES

On the basis of the research already done, the “Kongora” coal deposit is included in the first group according to geological complexity and in the third subgroup according to changeability of the coal seams. 75% of the

mineability area was researched to the level of balance reserves (A,B and C1) of the category as per the current regulations.

The reserves are given in the table below:

Geological reserves per classes and categories in tons

Class	Balance Reserves A+B+C1					Potential	Geological
Category	A	B	A+B	C1	A+B+C1	C2	
Main Seam	8.584.721	68.244.825	76.829.546	10.701.150	87.530.696	29.530.016	117.060.712
Interburden	756.318	7.120.383	7.876.701	1.457.449	9.334.150	2.151.615	11.485.765
Top Seam	3.864.097	58.437.818	62.301.915	9.905.124	72.207.039	24.624.669	96.831.708
Total	13.205.137	133.803.026	147.008.162	22.063.722	169.071.885	56.306.299	225.378.185

The results of the geomechanical and hydrogeological research show that the deposit is suitable for opencast mining with application of the latest technological solutions. The research recently done considerably supplemented the previous research. The obtained results confirm the assumptions and in some important parameters they are better than the assumption (weighted lower heating value, total sulphure and total balance reserves). This enables continuation of preparation of the design and study documents for the Kongora lignite mine and thermal power plant.

4. GIS PROJECT

The official cadastral plans and maps M 1:2500 and 5000 were vectorized for the projects Kongora Lignite Mine and Thermal Power Plant, Small Hydro Power Plant Kravice and Small Hydro Power Plant Stubica. In addition, the data base was made for usufruct in the research area for the project Kongora Lignite Mine and Thermal Power Plant. As a result, the approvals were obtained from the holders of usufruct of the plots in the research area of the “Kongora” coal deposit. The 3 D model of the deposit (Figure 3) was created for calculation of the mean value of the following: lower heating value, moisture, thickness and absolute depth of the main seam, interburden and top seam.The isolines for the stated parameters were drawn in CAD.

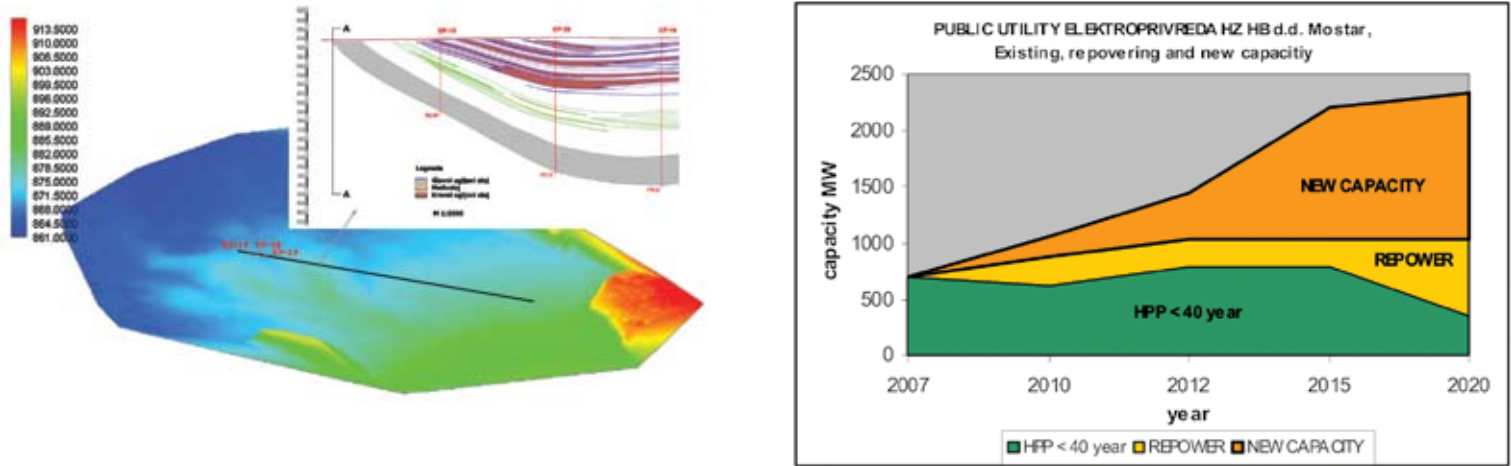
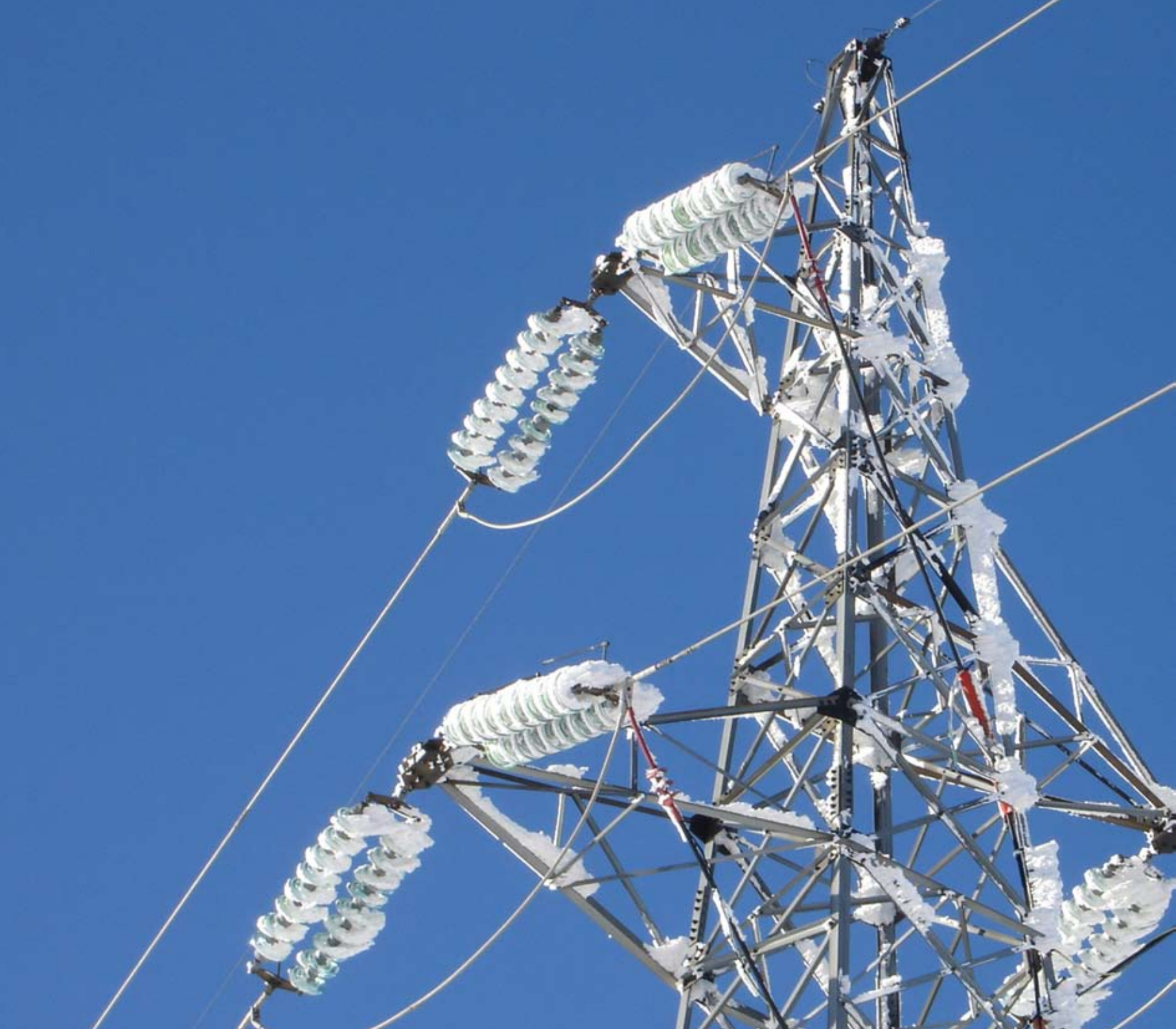


Figure 3 – 3D model and section of estimate profile in Kongora deposit

Table – Installed capacity and annual output in existing and new generating facilities

Item.	Name	Capacity	Year			
		Annual output	2005	2010	2015	2020
1.	Wind farms	MW	0	128	338	466
		GW	0	368	886	1254
2.	Hydro power plants	MW	792	837	990	1078
		GW	1860	2078	2420	2704
	out of which					
2. 1.	Pumped storage power plant	MW	440	440	544	544
		GW	600	600	766	766
2. 2.	Small hydro power plants	MW	0	15.28	37.62	47.62
		GW	0	49	123	159
3.	Thermal power plants	MW			550	550
		GW			3000	3000
4.	Renewable energy sources	MW	792	965	1328	1544
		GW	1860	2494	3429	4117
5.	Fossil fuels	MW	0	0	550	550
		GW	0	0	3000	3000
7	TOTAL	MW	792	965	1878	2094
		GW	1860	2494	6429	7117



POWER DISTRIBUTION DIVISION

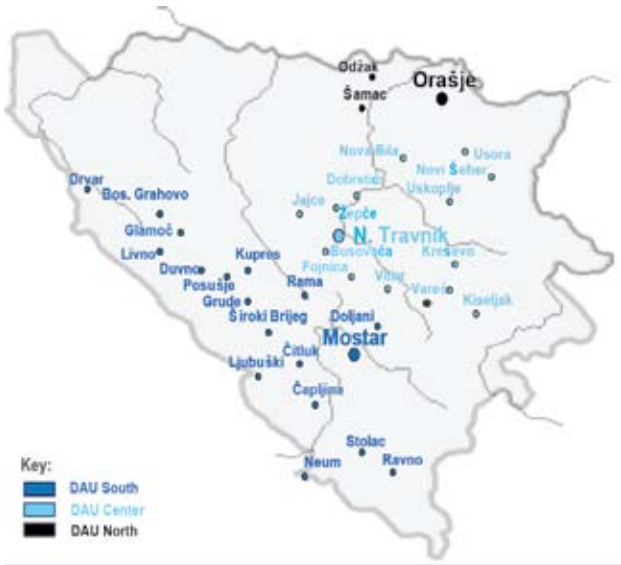
DISTRIBUTION FACILITIES

In 2007, only 44.4% investment out of our own funds was realized. The reason can be found in the following:

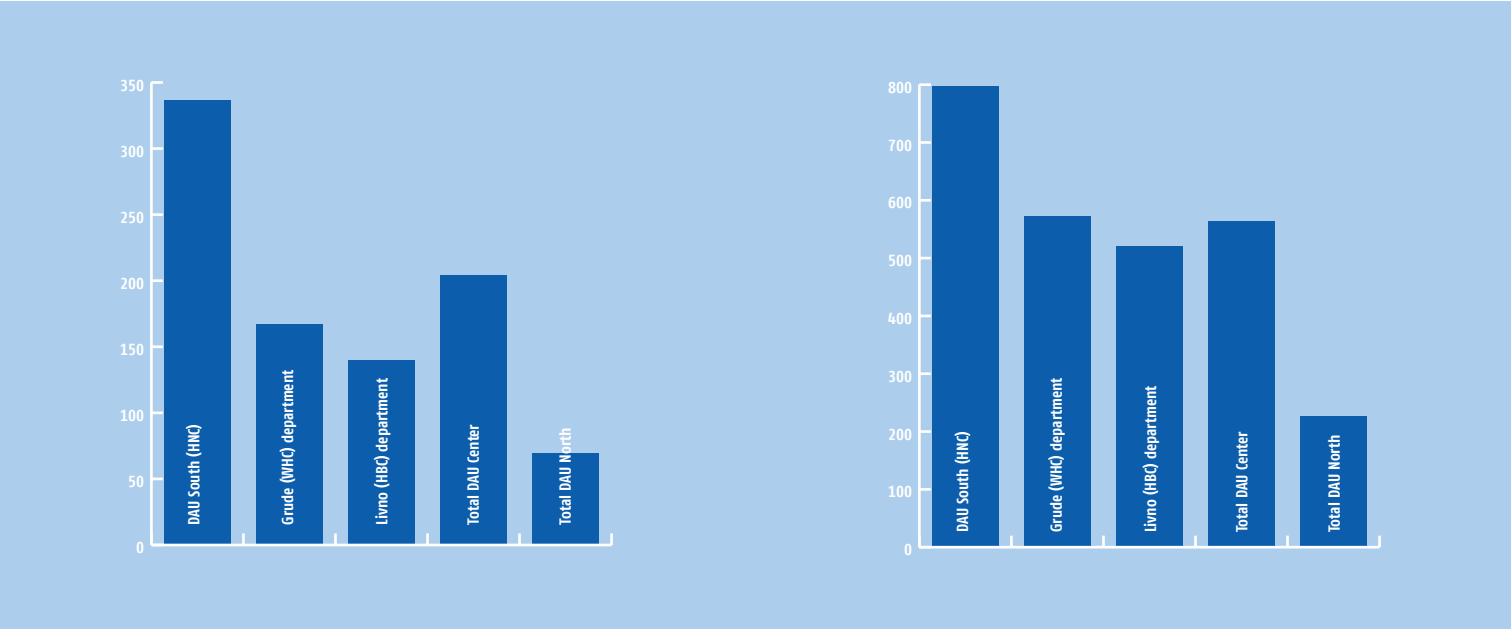
- Bad financial situation in the company because of which the management had to make a decision on investment only in the facilities which construction already started and in the facilities necessary for the power system operation
- Difficulties in investment realization
- Problems in property-rights relations for 35/10 kV SS Blidinje – BAM 1,300,000
- Impossibility of purchase of the business premises at Rudnik site– BAM 1,000,000

For a portion of investment out of our own funds, only the tender documents were prepared and investment in the material procurement amounted to BAM 4,000,000

The rest of investment was included in the 2008 plan.



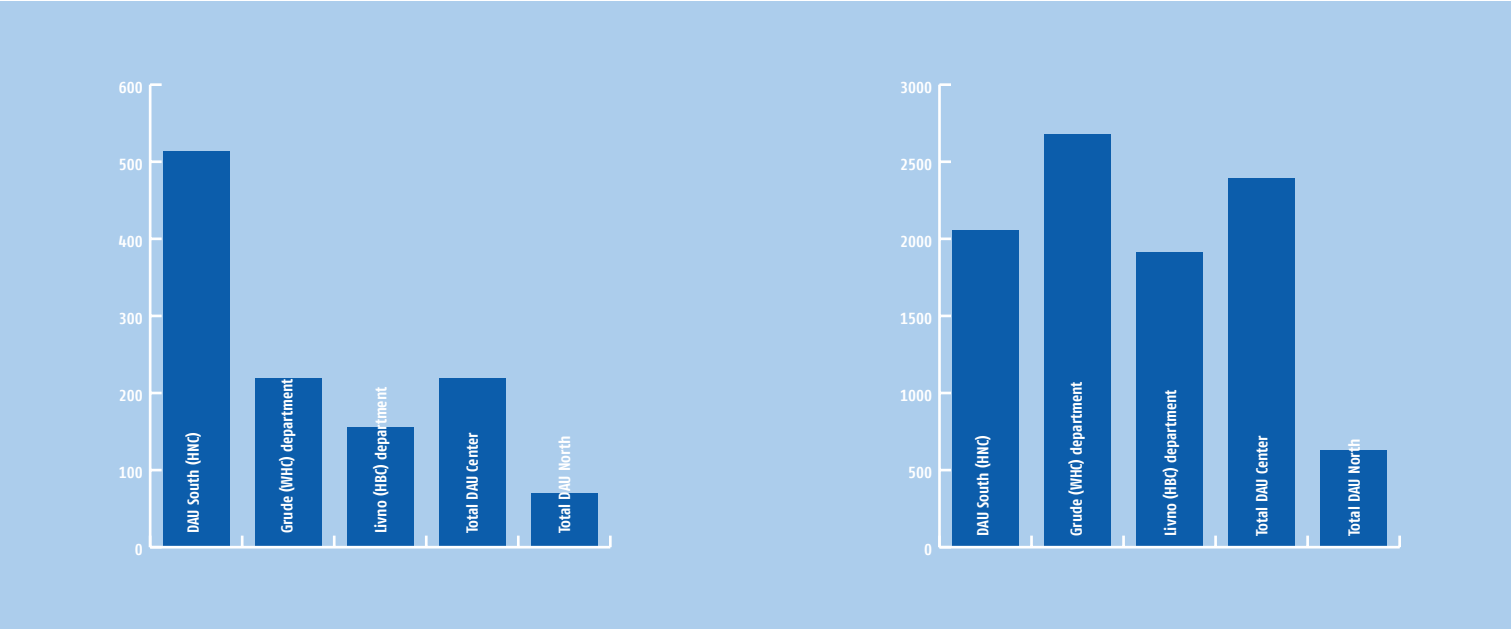
PDD	35/10 (20) kV SS	35 kV line	35 kV TL	10(20)/0.4 kV SS	10,20 and 0.4 kV underground line	10,20 and 0.4 kV overhead line	Installed power	Accepted electricity	Investment
	No	km	km	No	km	km	MVA	MWh	BAM
DAU South (HNC)	4	0	80.9	797	514	2.055	336	477.333	9.906.900
Grude (WHC) department	0	1.1	50.4	573	219	2.680	167	282.230	4.815.900
Livno (HBC) department	3	2.4	70.1	520	156	1.914	140	156.627	5.421.800
Total DAU South	7	3.5	201.4	1890	889	6649	643	916.190	20.144.600
Total DAU Center	3	2.4	53.4	563	219	2.393	204	287.944	4.284.810
Total DAU North	2	1.8	21.7	227	70	628	69	98.106	2.810.590
Total	12	7.7	276.5	2.680	1.178	9.670	916	1.302.240	27.240.000



PDD	10 (20)/0.4 kV SS
DAU South (HNC)	797
Grude (WHC) department	573
Livno (HBC) department	520
Total DAU Center	563
Total DAU North	227
Total	2.680

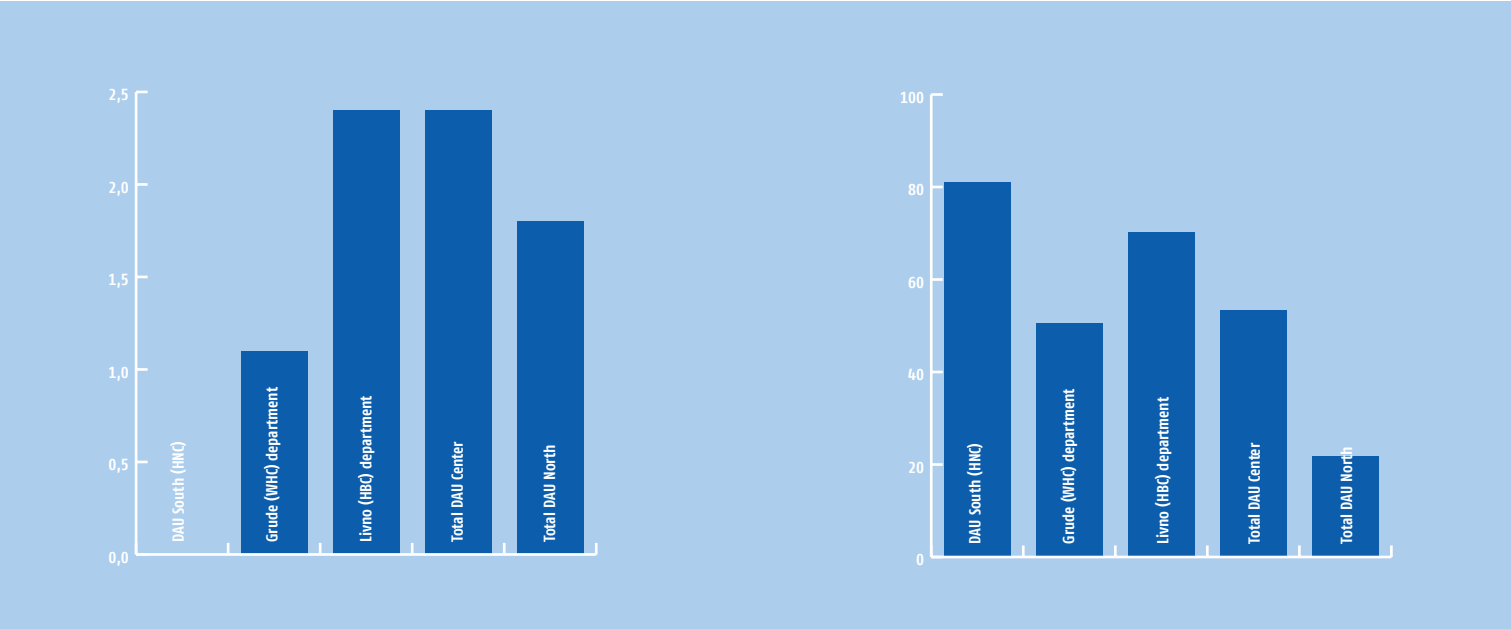
PDD	installed power (MVA)
DAU South (HNC)	336
Grude (WHC) department	167
Livno (HBC) department	140
Total DAU Center	204
Total DAU North	69
Total	916

Key: DAU (Distribution Area Unit); PDD (Power Distribution Division); WHC (West Herzegovina Canton); HBC (Hezeg Bosnia Canton); HNC (Herzegovina–Neretva Canton)



DPP	20,10 and 0.4 kV underground line
DAU South (HNC)	514
Grude (WHC) department	219
Livno (HBC) department	156
Total DAU Center	219
Total DAU North	70
Total	2.680

DPP	20,10 and 0.4 kV overhead line
DAU South (HNC)	2.055
Grude (WHC) department	2.680
Livno (HBC) department	1.914
Total DAU Center	2.393
Total DAU North	628
Total	9.670



DPP	35 kV underground line
DAU South (HNC)	0
Grude (WHC) department	1.1
Livno (HBC) department	2.4
Total DAU Center	2.4
Total DAU North	1.8
Total	7.7

DPP	35 kV overhead line
DAU South (HNC)	80.9
Grude (WHC) department	50.4
Livno (HBC) department	70.1
Total DAU Center	53.4
Total DAU North	21.7
Total	276.5





POWER SUPPLY DIVISION

INTRODUCTION

The organizational parts of the division are:

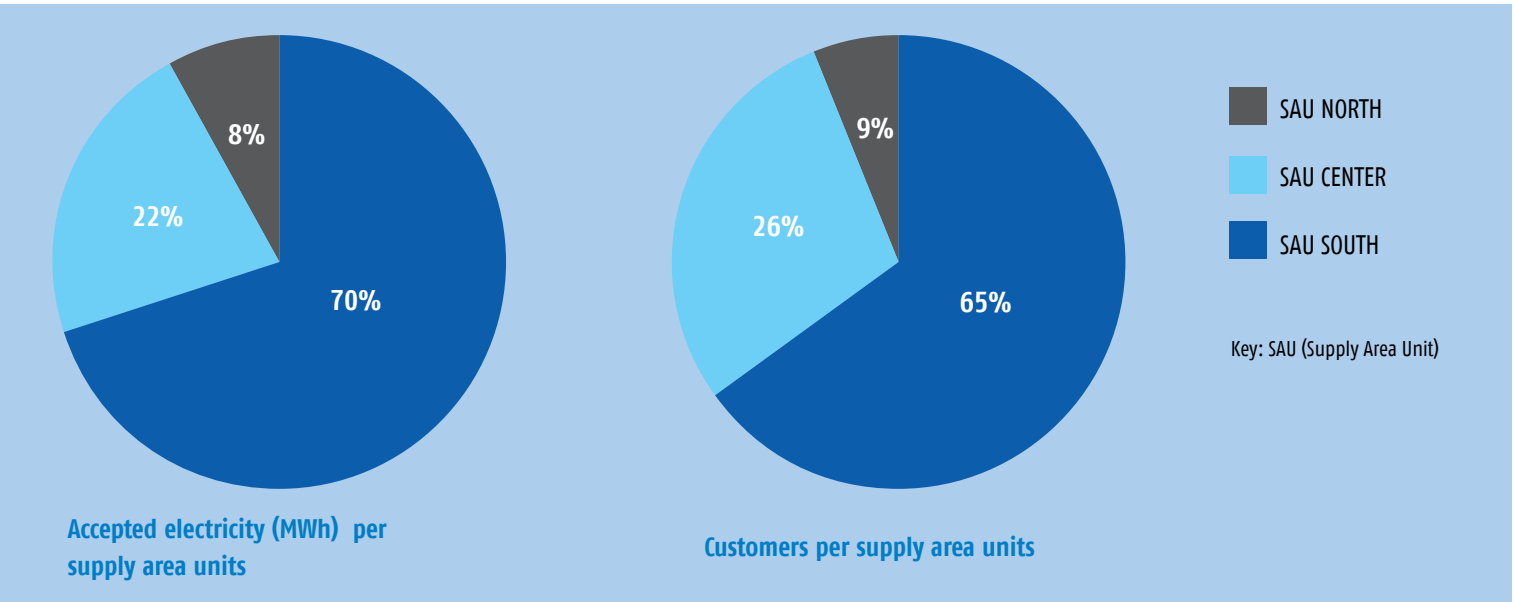
1. Assistant General Manager's Office
2. Supply Area Unit SOUTH
3. Supply Area Unit CENTER
4. Supply Area Unit NORTH

Supply area units consist of departments and services in charge of direct relations with customers.

The employees of the division are responsible for safe supply and regular collection. On December 31, 2007, there were 181,853 customers.

NUMBER OF CUSTOMERS PER CLASSES AS OF DECEMBER 31, 2007:

Class	Number of customers
110 kV	3
35 kV	3
10 kV	111
Households	166.777
Other consumption	14.636
Street lighting	1.323
Total	181.853



PERFORMANCE AND ACTIVITIES IN 2007

Like all other ogranizational parts, the Power Supply Division was affected by the irrational decisions of FERC on new tariffs.These decisions had incalculable effects on the performance of JP Elektroprivreda Hrvatske zajednice Herceg Bosne. FERC did not understand and recognize the real operating costs. The company income was therefore considerably reduced. It affected the company performance in 2007.

But, the Power Supply Division had a constant growing trend in collection ratio and declining trend in losses.

Collection ratio on distribution level:	
• Supply Area Unit SOUTH	97.38%
• Supply Area Unit CENTER	99.65%
• Supply Area Unit NORTH	100.88%

Distribution network losses:	
• Supply Area Unit SOUTH	19.28%
• Supply Area Unit CENTER	19.22%
• Supply Area Unit NORTH	11.34%

Number of suits brought for debt:	
• Supply Area Unit SOUTH	5,252
• Supply Area Unit CENTER	993
• Supply Area Unit NORTH	233

Number of meter inspections:	
• Supply Area Unit SOUTH	32,943
• Supply Area Unit CENTER	15,765
• Supply Area Unit NORTH	3,902

The pilot projects of remote reading and control of consumption are being implemented. The objective is to prepare the company for market

competition and non-discriminatory competition with other participants in the electricity market in BiH.

In addition to more precise metering, remote reading and cutting, and theft detection, one of the biggest advantages of this technology is the possibility of moving the consumption from the peak load period to the non-peak period. In this manner, it is possible to save investment in generation facilities for peak load covering and investment to increase the network capacity.

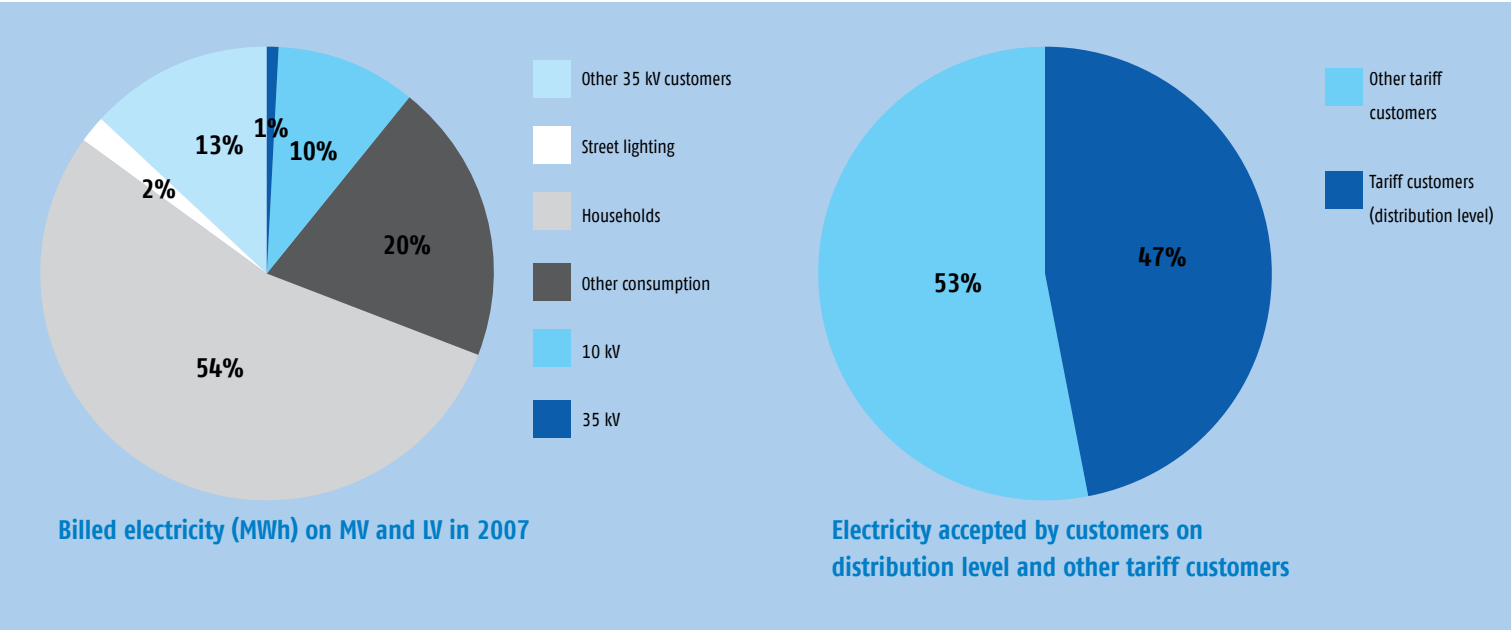
Besides the advantages of the system for the company, the advantages for customers are the following:billing of real consumption, possibility of introducing new tariffs, easy access to information on consumption etc.

A very important role in such projects should be played by regulatory bodies which should, according to the “Electricity Road Map for Bosnia and Herzegovina” prescribed by the Ministerial Council, initiate modernization of operations in power utilities and, at the same time, provide preconditions for faster introduction of the stated technology.

In the coming period, it will be necessary to prepare the investment documentation for introduction of remote metering which would define the technical characteristics of the system and associated infrastructure and establish the optimum method of project financing.

SUPPLEMENT:

Power generated in hydro power plants	1,128.10 GWh
Purchase & sale and exchange	1,728.41 GWh
Available electricity	2,856.51 GWh
• Power supply and other 35 kV customers	1,467.16 GWh
• 110/220kV customers	1,338.03 GWh
• PSPP Čapljina in pump operation	10.86 GWh
• Transmission losses	40.46 GWh



MAXIMUM (JANUARY 1, 2007) AND MINIMUM (OCTOBER 1, 2007) DAILY CONSUMPTION IN 2007

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
MAX	402	376	364	362	368	369	398	433	455	466	455	450	447	447	448	474	481	486	480	472	467	460	447	415
MIN	221	204	199	202	201	206	237	261	278	283	275	267	259	262	266	288	294	260	283	310	301	290	270	247

MAXIMUM AND MINIMUM HOURLY CONSUMPTION PER MONTHS IN 2007

	I	II	III	IV	V	VI	VII	VII	IX	X	XI	XII
MAX	486	475	457	431	314	310	321	335	333	356	392	423
MIN	334	332	318	304	205	203	215	289	225	199	228	239

44

