ELEM

MACEDONIAN POWER PLANTS

ANNUAL REPORT 2006

contents

Dear,

Since its establishment until today JSC ELEM represents one of the main links of the contemporary daily operation of the Republic of Macedonia. With our generation capacities and the great devotion of our employees, JSC ELEM works in continuity more than 50 years in the field of electricity production for the demands of all subjects in the country, and at the same time growing into contemporary and strategically important Company in larger regional frames.

But JSC ELEM does not stop here. With grate enthusiasm, professionalism and devotion we go further on towards providing capital for the present and future generations: perfectly qualified personnel, concrete production results and ambitious development plans and at the same time vision for perspective future of our company.

The corporative idea for realization of the Annual Report on one hand is the following of the up-to-date trends for introduction in front of the public and on the other hand, the transparent announcement of the results of our working, profile, mission and values that are respected by our employees and our company. We hope that the product will justify our concept and aim.

Respectfully,

General Manager
Vlatko Cingoski, Ph.D.E.E.

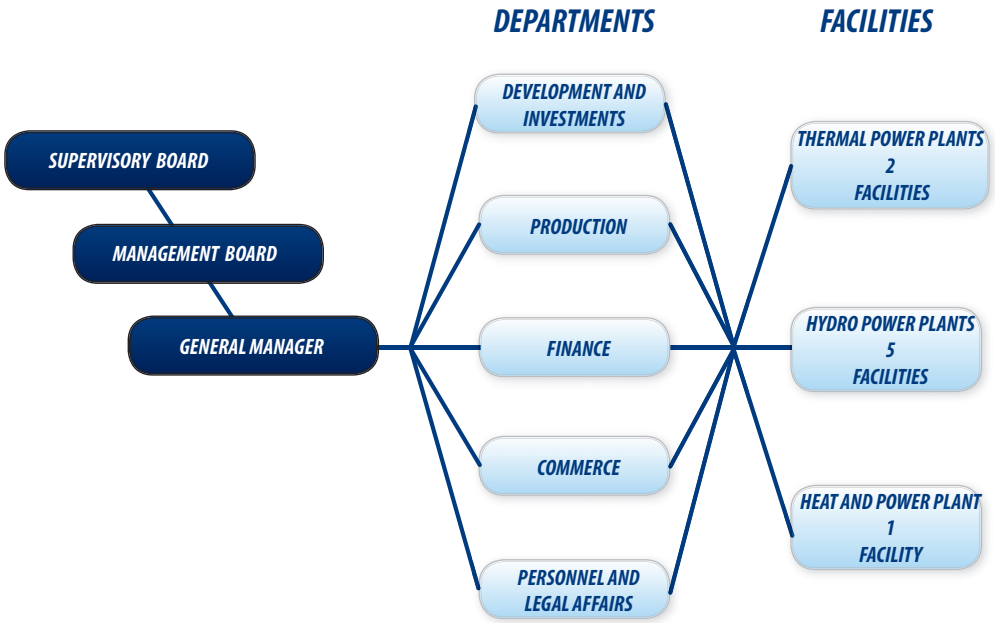
JSC ELEM PROFILE

JSC ELEM is Your ordinary partner, present in every segment of Your life and pillar of the Macedonian electric power system – pile of the country. Although invisible – JSC ELEM represents economic pillar of the country. Its stability represents better and safer future. With its installed capacities it provides about 96% of the total domestic production of electricity. The mining–power complexes Bitola and Oslomej produce over 80%, while our hydropower plants produce additionally about 16% of the electricity. Therefore, JSC ELEM is not considered by chance as strategically most important domestic company.

The electricity is the noblest form of energy and the most important factor for economic development of one country. It exists in the nature in different forms and we, people have privilege to know how to convert it and use it for fulfillment of our goals. What is necessary to be considered on the way of converting is not to neglect the nature and to refine and protect it for the future generations.

We have educated and devoted people, technology and capacities that assume the energy from the nature and transform it in a shape that is vital for all of us. That is why our slogan is: Nature decanted into energy.

JSC ELEM is the pillar of the Macedonian electric power system. Beyond the success, ambitions and good results of JSC ELEM daily there is army of people, they are our 3.800 employees. We at JSC ELEM know that the success of the work depends on the people responsible for its prompt and quality accomplishment. The company invests and believes that the generation from own resources is the most profitable and long term economically acceptable solution for Macedonia. JSC ELEM functions aiming to join the contemporary and technologically progressive countries in the world and to become part of the European Union – through effort for free electricity trade according to the directives of the EU, liberalization, increasing of the competition and actuation of all participants in the electric power section. Only in that way long term development assets can be provided, investments in energetics can arouse and the entire economy in the country will be reinforced.



Supervisory Board

Arsen Arsenov, Ph.D.E.E.	*President*
Dionis Manov, M.Sc.	*Memeber*
Igor Gesovski, M.Sc.	*Memeber*
Vladislav Stajkovik	*Memeber*
Krenar Osmani	*Memeber*
Ratko Crvenkovski	*Memeber*
Spiro Mavrovski	*Memeber*

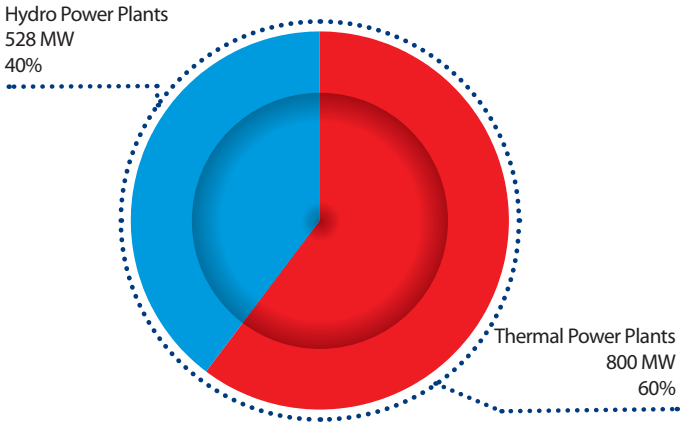
Board of Directors, Management

Vlatko Cingoski Ph.D.E.E	*Chairman of Board of Directors, General Manager*
Abdulhadi Iljazi B.Sc.Ecc.	*Member of Board of Directors, Deputy General Manager*
Departement for Development and Investments	
Jasna Ivanova - Davidovic B.Sc.Civ.Eng.	*Member of Board of Directors, Manager for Development and Investments*
Department for Production	
Dimitar Tanurkov B.Sc.Mech.E.	*Member of Board of Directors, Manager for Electricity Generation*
Department for Personnel and Legal Affairs	
Vladimimir Ognjanovski B.Sc.Lawyer	*Member of Board of Directors, Manager for Personnel and Legal Affairs*
Department for Commerce	
Nade Andonova B.Sc.Mech.E.	*Member of Board of Directors, Commercial Manager*
Department for Finance	
Slavica Besova B.Sc.Ecc.	*Member of Board of Directors, Manager for Finance*

BASIC DATA

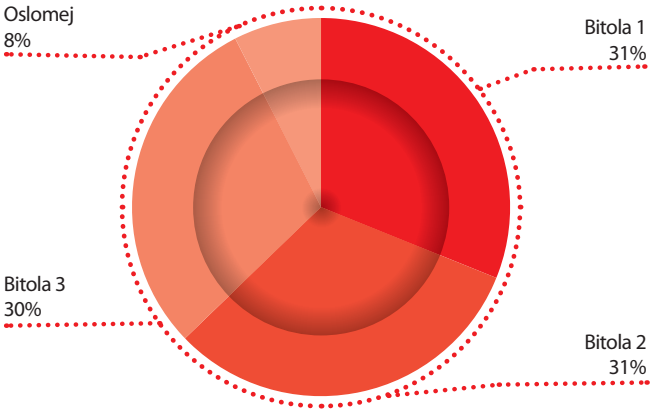
Installed capacity

	MW	%
Thermal Power Plants	800	60
Hydro Power Plants	528	40
Total	1.328	100



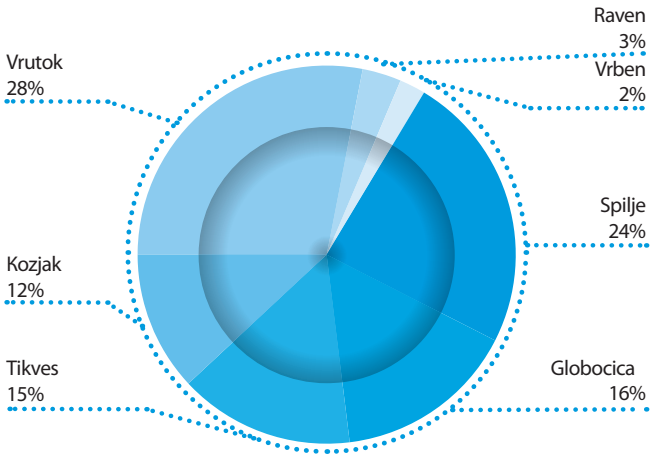
Thermal Power Plants

	Installed capacity MW	Net Production GWh	Year of commissioning	Working hours h	Main fuel	Fuel energy value kJ/kg
Bitola 1	225	1.465,9	1982	7.593	Coal	8.244
Bitola 2	225	1.475,0	1984	7.492	Coal	8.244
Bitola 3	225	1.393,1	1988	7.215	Coal	8.244
Oslomej	125	356,9	1980	4.933	Coal	7.252
Total	800	4.691,0		27.233		



Hydro Power Plants

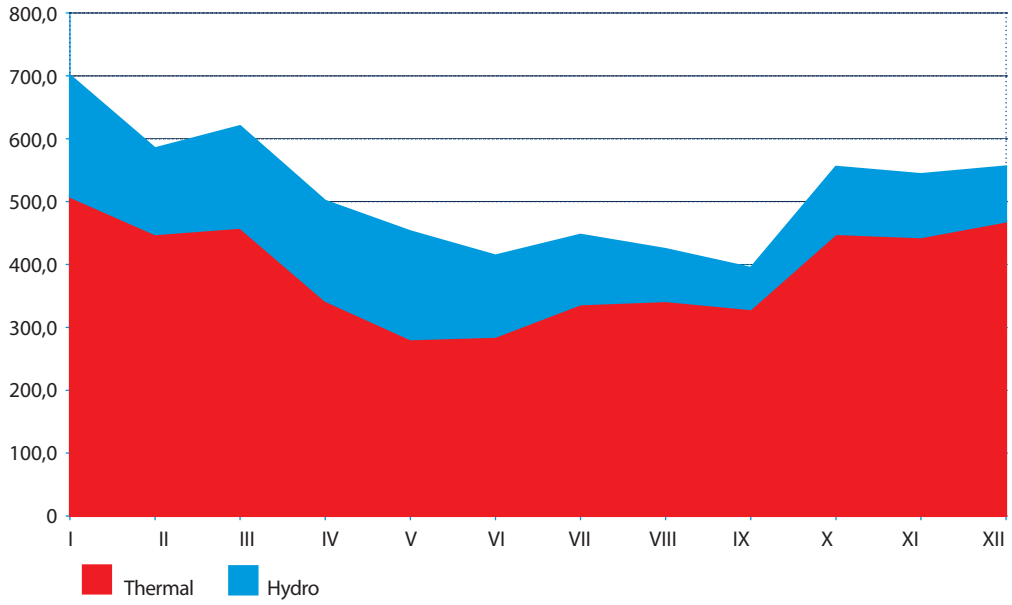
	Number of units	Installed capacity MW	Net production GWh	Year of commissioning	Plant type	Reservoir volume ($10^6 m^3$)
Vrutok	4	172	422,4	1957/1973	Reservoir	277/357
Raven	3	21,6	48,3	1959/1973	Run of river	/
Vrben	2	12,8	34,4	1959	Run of river	/
Spilje	3	84	362,2	1969	Reservoir	223/520
Globocica	2	42	231,9	1965	Reservoir	13,2/58,4
Tikves	4	116	226,7	1968/1981	Reservoir	309,6/475
Kozjak	2	80	179,0	2004	Reservoir	260/550
Total	20	528,4	1.504,9			

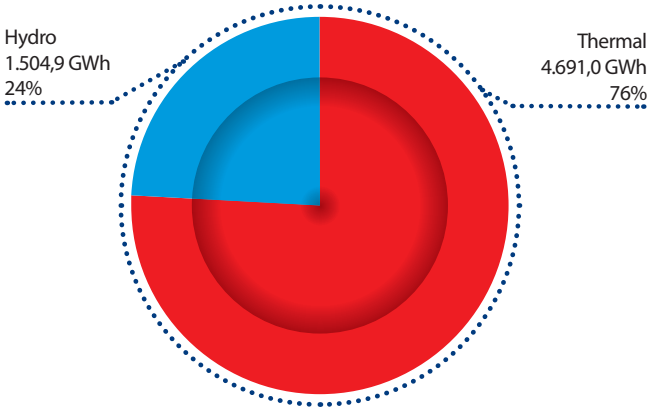


Monthly available energy

GWh

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
Thermal	507,8	448,1	458,5	342,5	281,0	285,1	336,7	341,9	329,0	448,6	443,4	468,5	4.691,0
Hydro	193,1	136,8	161,6	158,6	171,7	129,2	110,8	82,5	65,8	106,9	100,5	87,5	1.504,9
Total	700,9	584,9	620,1	501,1	452,8	414,3	447,4	424,4	394,7	555,4	543,8	556,0	6.195,9



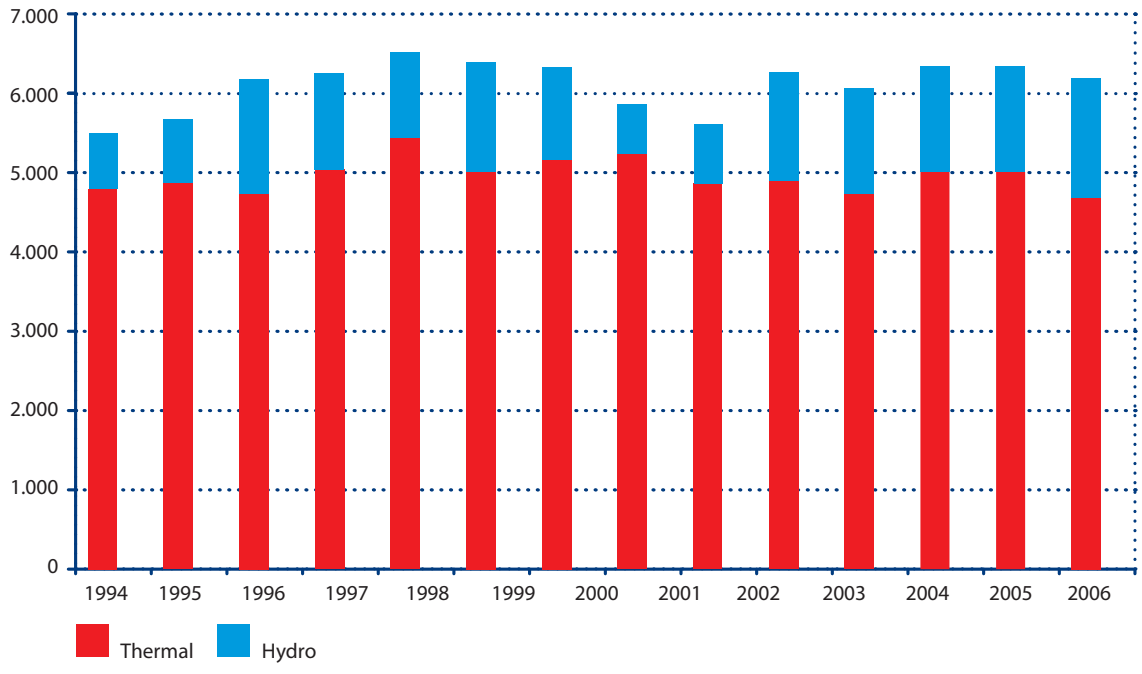


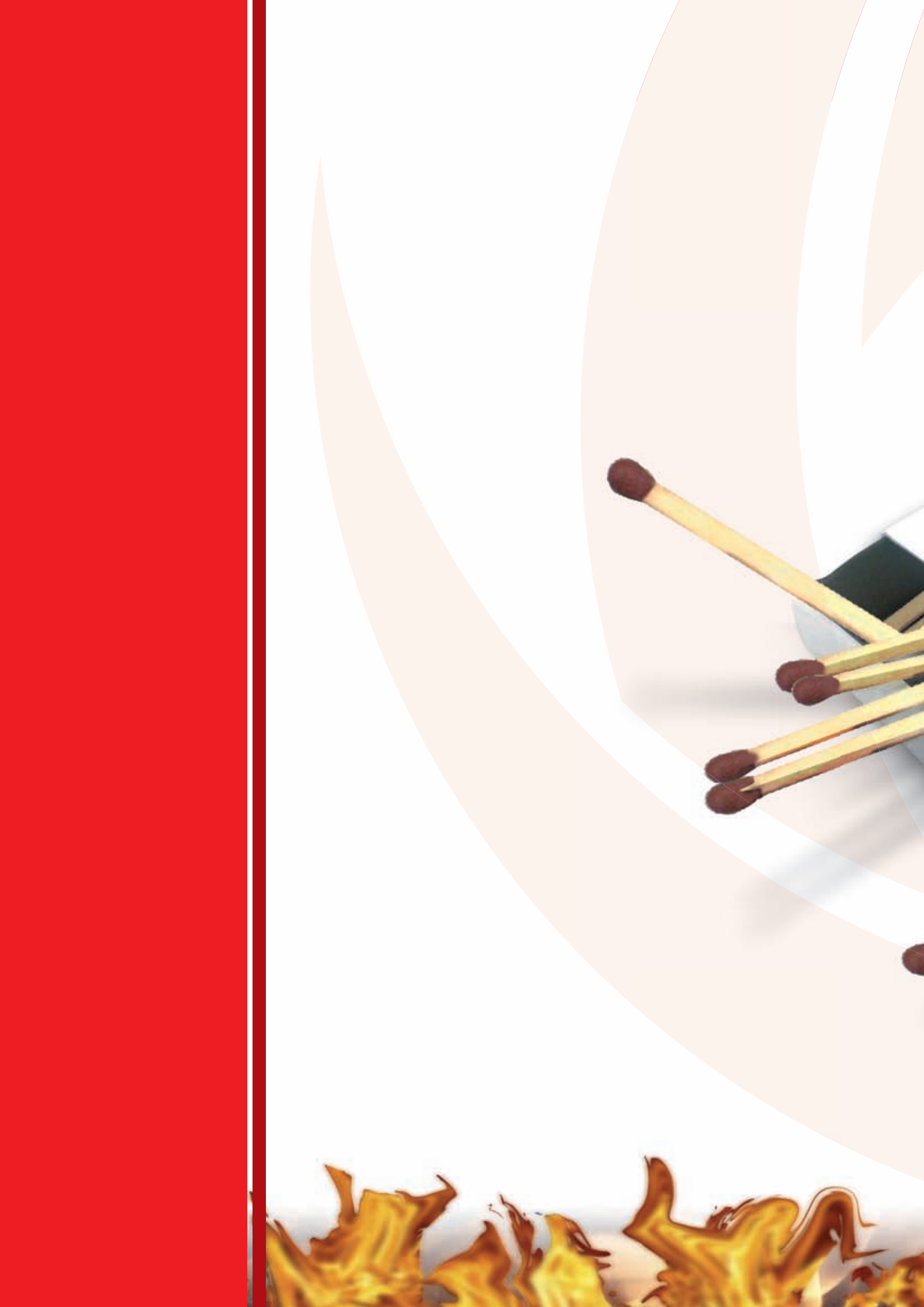
Annually available energy

	1994	1995	1996	1997	1998	1999
Thermal	4.791,7	4.885,4	4.731,6	5.035,0	5.445,3	5.008,4
Hydro	695,8	797,1	1.442,1	1.222,0	1.077,5	1.384,6
Total	5.487,5	5.682,5	6.173,7	6.257,0	6.522,8	6.393,0

							GWh
2000	2001	2002	2003	2004	2005	2005	2006
5.159,0	5.241,4	4.863,3	4.902,5	4.735,0	5.007,8	5.007,8	4.691,0
1.170,0	621,5	755,4	1.370,1	1.328,3	1.334,7	1.334,7	1.504,9
6.329,0	5.862,9	5.618,7	6.272,6	6.063,3	6.342,5	6.342,5	6.195,9

	2005	2006	'06/'05	'05	'06
	GWh	GWh	GWh	%	%
Thermal	5.007,8	4.691,0	-6,3	79,0	75,7
Hydro	1.334,7	1.504,9	12,8	21,0	24,3
Total	6.342,5	6.195,9	-2,3	100,0	100,0





ELEM
MACEDONIAN POWER PLANTS

2006
V

THERMAL

MINES

HYDRO

ECOLOGY

FINANCES

HEAT DECANTED INTO CREATION

Thermal power resources are not renewable electric power resources and are spent irreversibly. The obtaining of electricity in the thermal power plants is conducted with transformation of the fossil fuels - coal, petroleum, gas, into electricity. Thermal capacities provide constant energy. Thermal production has increasing tendency.

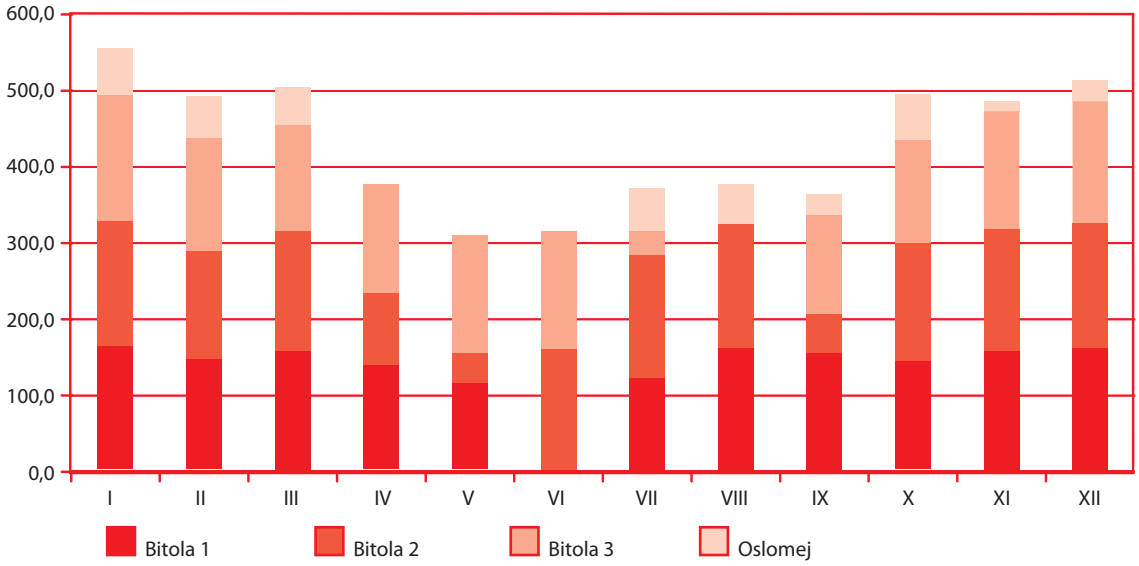
The biggest part of the electricity production in Republic of Macedonia, around 80%, is based on thermal power plants that are essential for our country. The largest capacity is the mining–power complex Bitola with its three units, each of 225 MW and net annual production of around 1.400 GWh per unit. This production complex is fully integrating more units. This thermal power plant uses the coal as a basic fuel with an average caloric value of 7.900 кJ/кg.

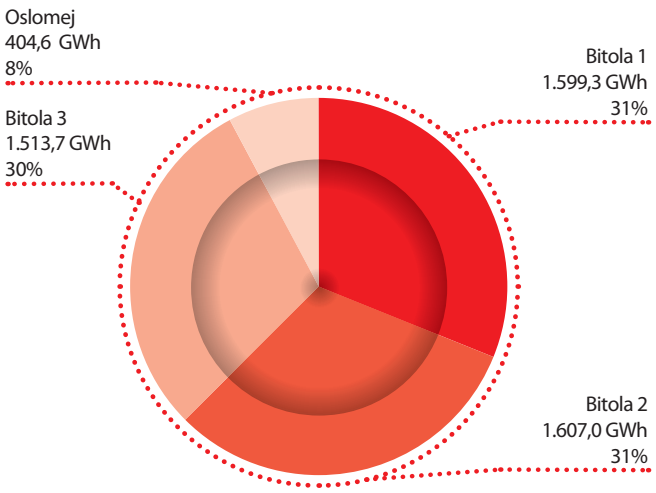
The other thermal capacity included in the electric power system is the mining–power complex Oslomej in Kicevo with installed capacity of the unit of 125 MW and net annual production of about 400 GWh. This thermal capacity uses the coal as basic fuel with average caloric value of 7.660 кJ/кg.

All of these thermal power plants have important role in the covering the base part of the load diagram in the Republic of Macedonia.

Monthly Production

Thermal Power Plants													GWh
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
Bitola 1	162,3	145,0	154,7	137,0	113,8	0,0	119,4	158,6	153,4	141,4	154,7	159,0	1.599,3
Bitola 2	163,0	142,1	156,8	94,7	39,6	157,4	162,1	162,2	50,1	155,7	159,4	164,1	1.607,0
Bitola 3	164,9	147,6	139,8	142,9	154,0	154,0	30,6	0,0	130,0	135,0	155,5	159,5	1.513,7
Oslomej	62,9	53,8	49,6	0,0	0,0	0,0	57,1	53,7	27,3	59,5	13,1	27,7	404,6
Total	553,1	488,5	500,9	374,5	307,4	311,4	369,2	374,4	360,7	491,7	482,7	510,2	5.124,6

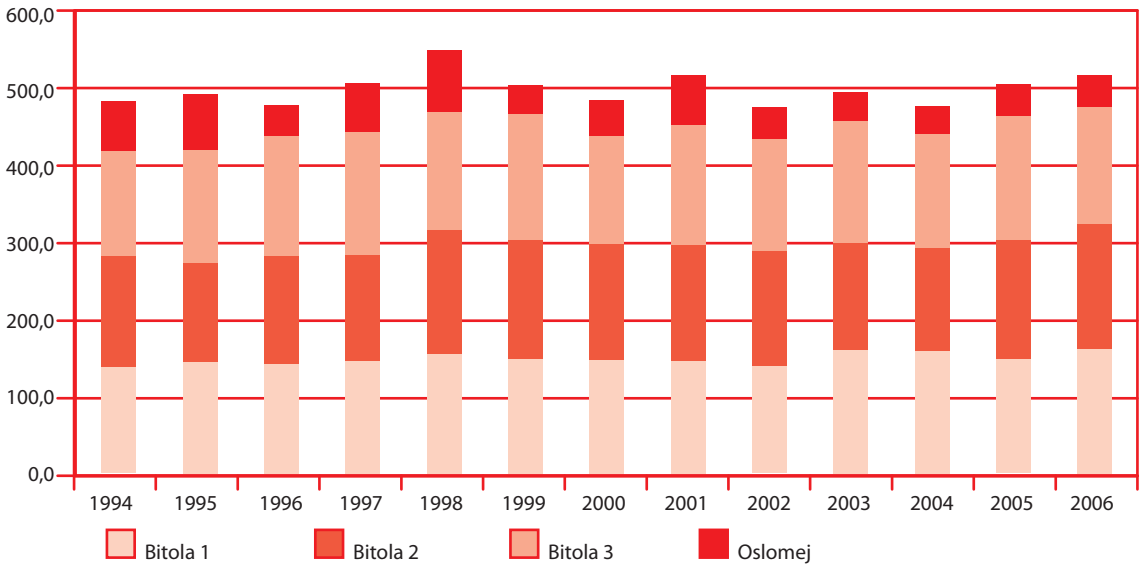




Production per year

Thermal Power Plants													GWh
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Bitola 1	1.375,4	1.434,2	1.406,6	1.451,7	1.537,9	1.483,1	1.463,7	1.452,5	1.389,4	1.590,3	1.585,3	1.478,0	1.599,3
Bitola 2	1.431,5	1.284,7	1.399,3	1.369,1	1.586,1	1.519,3	1.489,3	1.487,5	1.472,9	1.383,6	1.313,4	1.524,6	1.607,0
Bitola 3	1.350,5	1.451,3	1.542,4	1.572,1	1.527,6	1.624,6	1.389,1	1.545,8	1.435,4	1.566,7	1.463,5	1.600,9	1.513,7
Oslomej	637,2	709,2	386,6	635,9	793,7	376,9	463,7	638,6	416,8	365,9	372,8	404,3	404,6
Total	4.794,6	4.879,4	4.734,9	5.028,8	5.445,3	5.003,9	4.805,8	5.124,4	4.714,5	4.906,5	4.735,0	5.007,8	5.124,6

THERMAL POWER PLANTS	2005	2006	'06/'05	'05	'06
	GWh	GWh	GWh	%	%
Bitola 1	1.478,0	1.599,3	8,2	29,5	31,2
Bitola 2	1.524,6	1.607,0	5,4	30,4	31,4
Bitola 3	1.600,9	1.513,7	-5,4	32,0	29,5
Oslomej	404,3	404,6	0,1	8,1	7,9
Total	5.007,8	5.124,6	2,3	100,0	100,0



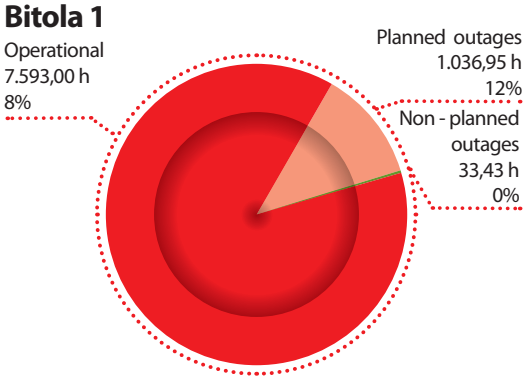
Outages

Thermal Power Plants	Bitola1		Bitola 2		Bitola 3		Oslomej	
Outages (h)	P	N	P	N	P	N	P	N
January	0,00	0,00	0,00	0,00	0,00	0,00	0,00	35,10
February	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
March	0,00	0,00	0,00	0,00	0,00	95,12	168,22	0,00
April	0,00	0,00	0,00	238,47	0,00	0,00	720,00	0,00
May	182,63	0,00	553,10	0,00	0,00	7,03	370,00	374,00
June	720,00	0,00	0,00	0,00	0,00	0,00	720,00	0,00
July	134,32	33,43	0,00	0,00	599,83	0,00	40,00	9,12
August	0,00	0,00	0,00	0,00	744,00	0,00	0,00	66,20
September	0,00	0,00	477,13	0,00	84,10	14,43	309,00	68,15
October	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,57
November	0,00	0,00	0,00	0,00	0,00	0,00	340,00	209,68
December	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Total	1.036,95	33,43	1.030,23	238,47	1.427,93	116,58	2.667,22	762,82
	1.070,38		1.268,70		1.544,51		3.430,04	

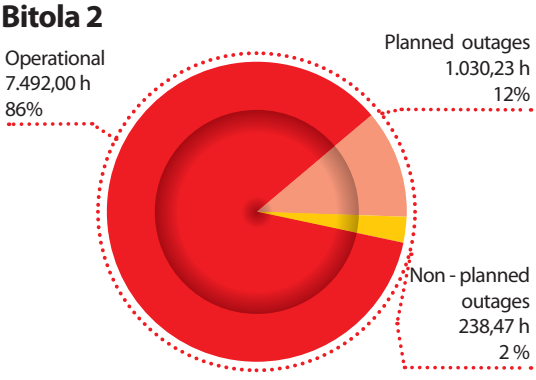
P - Planned outages during TPP operation

N - Non - planned outages during TPP operation

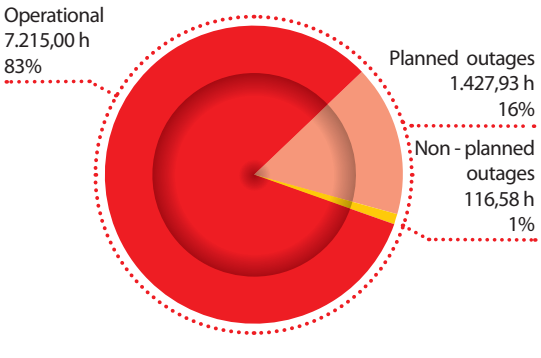
Bitola 1



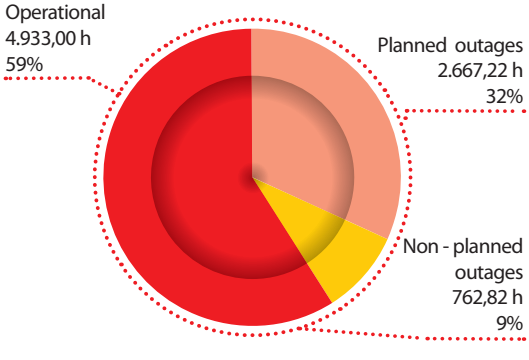
Bitola 2



Bitola 3



Oslomej



ELEM
MACEDONIAN POWER PLANTS

2006

2

THERMAL

MINES

HYDRO

ECOLOGY

FINANCES

ENDLESSNESS DECANTED INTO LIFE

We decant the captured treasure from Earth into energy.

The coal – lignite is dominant electric power resource for electricity production in the electric power system of the Republic of Macedonia. The coal is applied in the industry, heating, as well as for a broad expenditure and for us the further exploration of the sources, the production and its exploitation has essential importance.

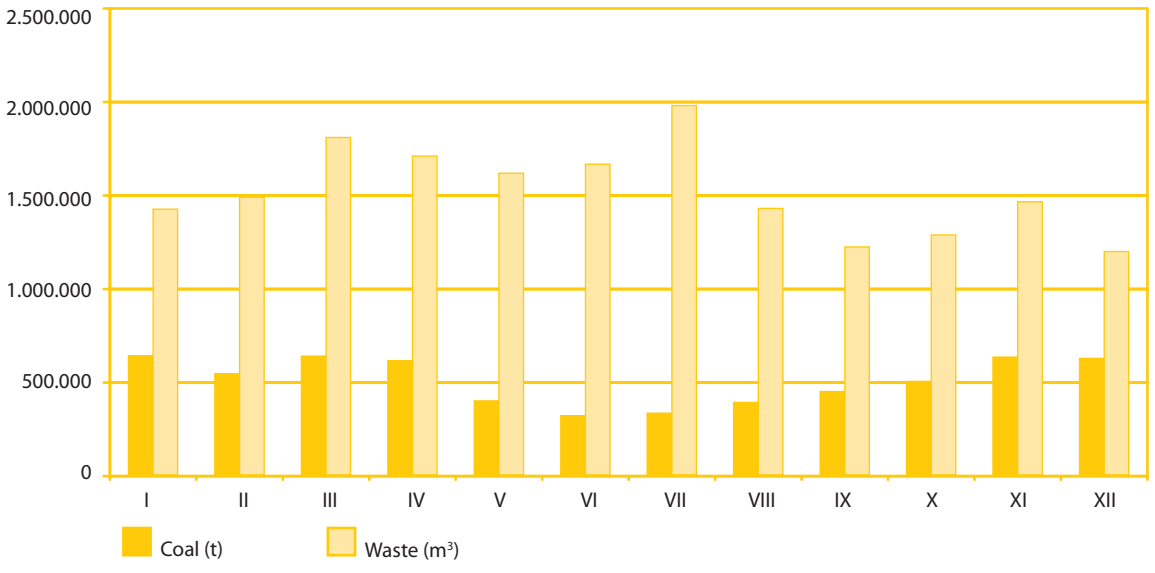
Strategically, it could be ascertained that the future of the energetic in Republic of Macedonia is in the established and potential coal reserves.

The base energy of the electric power system of the country is founded on the coal potential of Kicevo and Pelagonija Basin with the established coal deposits: Suvodol, Brod – Gneotino, Zivojno, Oslomej, Popovjani and Stragomiste which have enabled opening of our two large surface coal mines: SM Oslomej and SM Suvodol.

Mining of coal and waste - Mine Suvodol

	I	II	III	IV	V	VI
Coal (t)	635.645	539.803	633.736	608.486	394.693	315.905
Waste (m^3)	1.417.703	1.482.272	1.800.643	1.701.130	1.609.467	1.657.772

	VII	VIII	IX	X	XI	XII	Total
Coal (t)	329.147	386.605	444.701	498.833	628.493	621.449	6.037.496
Waste (m^3)	1.970.636	1.421.976	1.216.034	1.280.299	1.457.032	1.191.868	18.206.832

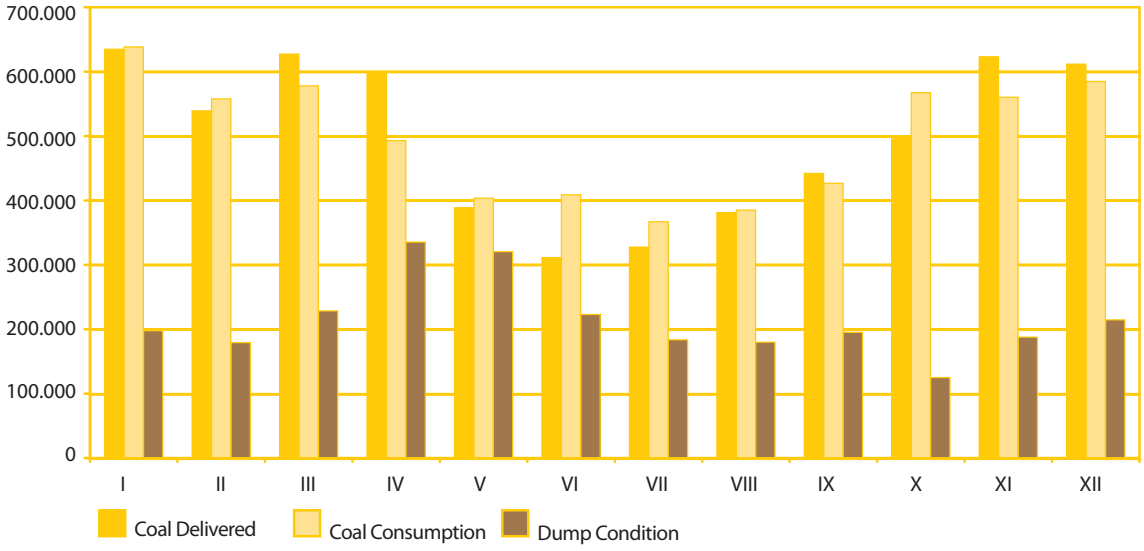


Coal Consumption - Mine Suvodol

t

	I	II	III	IV	V	VI
Coal Delivered	633.281	537.853	625.785	598.390	387.588	310.288
Coal Consumption	636.862	556.326	576.642	491.692	402.385	407.636
Dump Condition	196.937	178.464	227.607	334.305	319.508	222.160

	VII	VIII	IX	X	XI	XII	Total
Coal Delivered	326.586	380.103	440.847	495.767	621.647	610.176	5.968.311
Coal Consumption	365.832	383.964	425.444	566.000	558.931	583.376	5.955.090
Dump Condition	182.914	179.053	194.456	124.223	186.939	213.739	

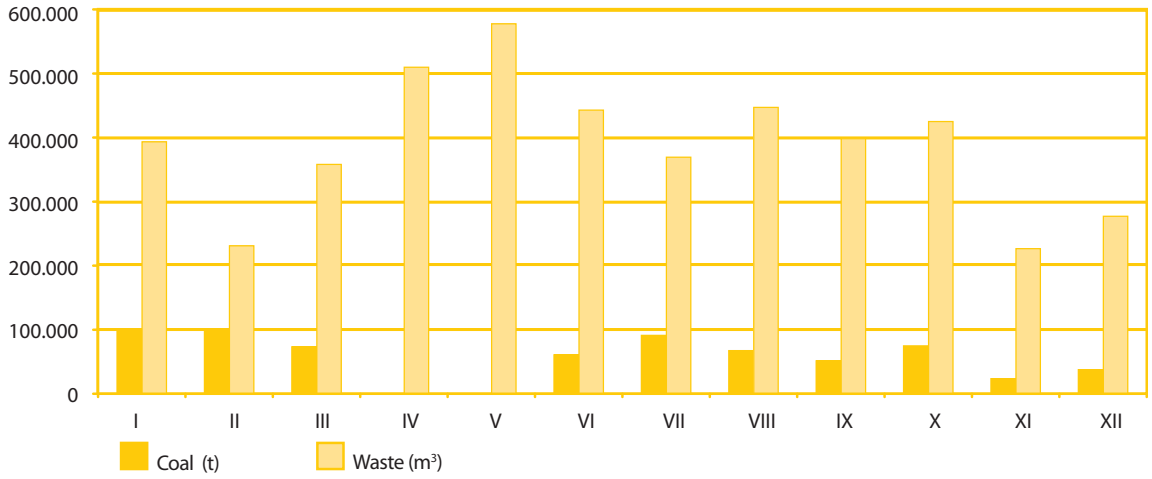


Mining of coal and waste - Mine Oslomej

t

	I	II	III	IV	V	VI
Coal (t)	101.041	97.530	74.027	0	0	61.510
Waste (m^3)	393.463	231.361	358.245	509.800	577.392	442.860

	VII	VIII	IX	X	XI	XII	Total
Coal (t)	91.832	68.110	52.097	75.481	24.398	38.328	684.354
Waste (m^3)	369.486	447.065	398.326	425.065	226.883	277.484	4.657.430

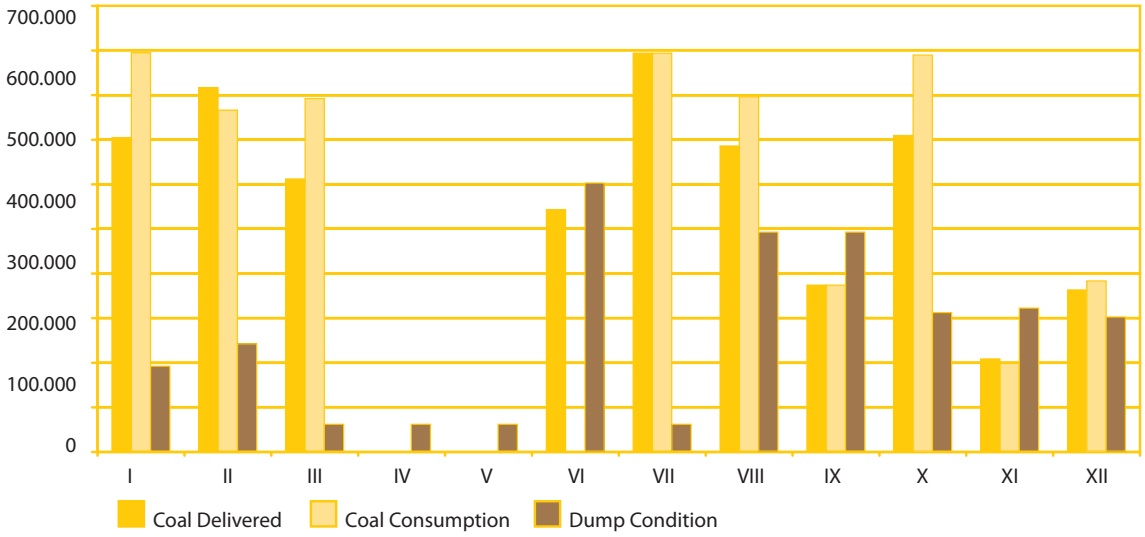


Coal Consumption - Mine Oslomej

t

	I	II	III	IV	V	VI
Coal Delivered	70.143	81.299	60.897	0	0	54.000
Coal Consumption	89.143	76.299	78.897	0	0	0
Dump Condition	19.000	24.000	6.000	6.000	6.000	60.000

	VII	VIII	IX	X	XI	XII	Total
Coal Delivered	89.047	68.267	37.123	70.613	20.620	36.070	588.079
Coal Consumption	89.047	79.267	37.123	88.613	19.620	38.070	596.079
Dump Condition	6.000	49.000	49.000	31.000	32.000	30.000	



ELEM
MACEDONIAN POWER PLANTS

2006

THERMAL

MINES

HYDRO

ECOLOGY

FINANCES

POWER DECANTED INTO MOVEMENT

Hydro energy is the first natural energy that is used by the man for its own purposes. It is one of the most important renewable energy resources and at the same time is economic competitor of the fossil fuels and the nuclear energy.

From the entire surface of the earth, 71% is covered with water. Today Hydro energy in the world participates with 19,3 % from the total world electricity production.

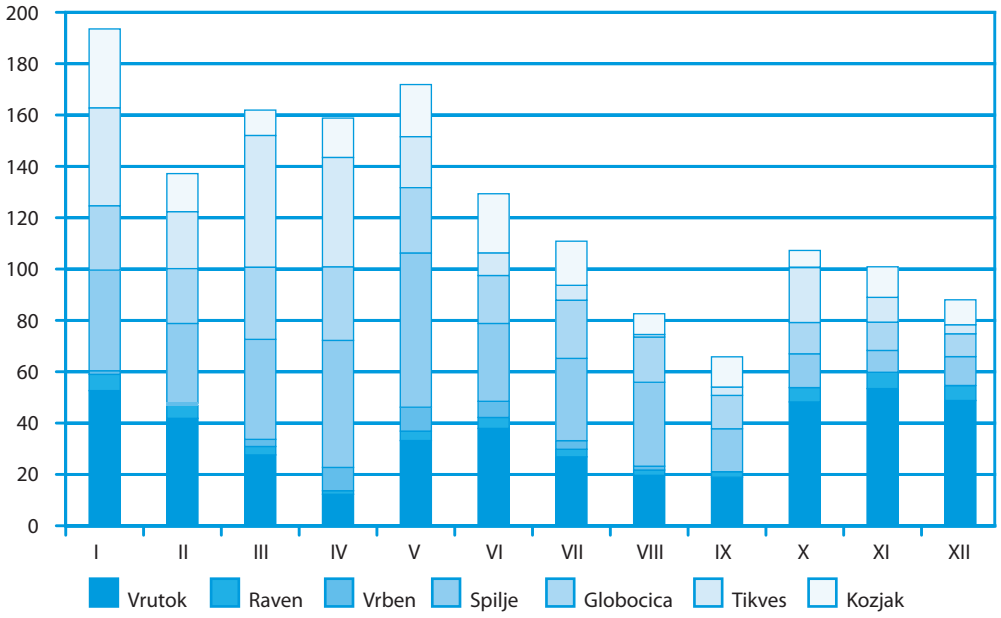
Macedonia disposes with significant hydro energy potential. It could be support of the future development of the electric power. Considering the fact that it is renewable energy resource, it has exceptional significance. Hydro production amounts 21% from the total electricity production of JSC ELEM and it responds to the daily variations of electricity consumption that contributes in the achievement of greater flexibility and availability of the electric power system. The total volume of the accumulations is 891.000.000 m^3 with total average annual production of 1.270 GWh. The total installation of the hydro capacities amounts 528,4 MW, respectively 40% from the total capacities of JSC ELEM.

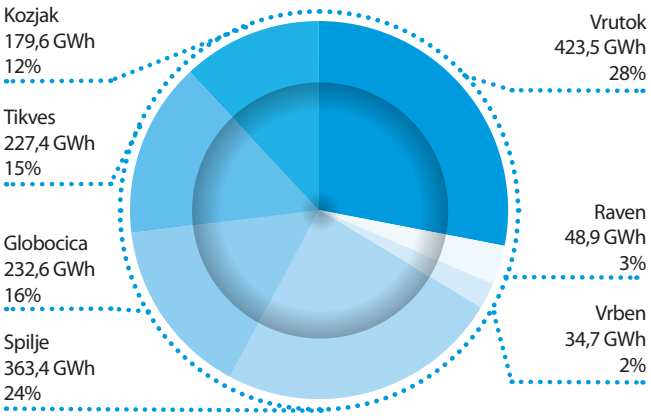
The exploitation of the hydro potential is connected to the construction of significant construction works, first of all dams and accumulations respectively long power tunnels or pipes that make the objects on one hand expensive for construction and on the other hand worthwhile regarding the total economy development in the country.

Hydro energy potential as a resource for obtaining electricity has more significance in the development plans of JSC ELEM. What is emphasized is the construction of new hydro energetic objects as well as revitalization of the existing hydro power plants.

Monthly production

Hydro Power Plant													GWh
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
Vrutok	52,9	42,1	27,8	12,5	33,4	38,2	27,1	19,9	19,1	48,5	53,4	48,8	423,5
Raven	6,3	5,1	3,3	1,4	3,7	4,2	3,0	2,1	2,1	5,6	6,3	5,8	48,9
Vrben	1,4	0,8	2,8	9,1	9,3	6,3	3,3	1,5	0,1	0,0	0,0	0,1	34,7
Spilje	39,2	31,0	39,0	49,5	60,0	30,3	32,1	32,7	16,7	13,2	8,5	11,2	363,4
Globocica	25,0	21,4	28,0	28,6	25,5	18,7	22,7	17,6	13,0	12,2	11,0	8,9	232,6
Tikves	38,1	22,1	51,4	42,6	19,8	8,7	5,8	1,0	3,3	21,4	9,6	3,5	227,4
Kozjak	30,8	14,9	9,9	15,4	20,3	23,1	17,2	8,1	11,8	6,5	11,9	9,7	179,6
Total	193,8	137,4	162,1	159,0	172,1	129,6	111,1	82,8	66,0	107,2	100,9	88,0	1.510,0

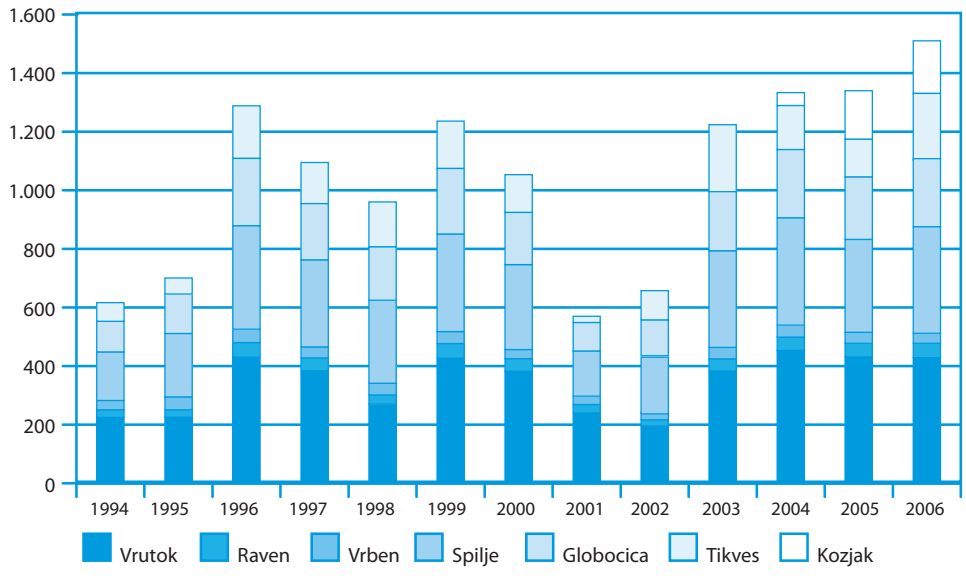




Production per year

Hydro Power Plants													GWh
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Vrutok	219,7	220,1	425,4	378,8	264,9	421,7	376,8	235,4	190,1	378,1	448,4	425,9	423,5
Raven	25,7	25,8	49,9	44,3	31,1	50,3	43,2	28,5	21,2	41,3	45,4	46,5	48,9
Vrben	32,0	44,1	45,5	37,1	40,0	40,3	31,4	28,7	25,6	39,0	41,2	38,0	34,7
Spilje	165,8	216,4	352,9	297,6	283,9	332,4	289,9	154,3	193,2	330,4	365,6	316,7	363,4
Globocica	104,8	134,6	229,6	191,6	182,0	225,0	178,2	96,8	122,7	201,1	233,5	212,9	232,6
Tikves	63,3	54,8	180,3	140,7	153,3	161,6	128,3	21,2	99,4	229,0	149,9	128,8	227,4
Kozjak	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	44,3	165,9	179,6
Total	611,3	695,8	1.283,6	1.090,1	955,2	1.231,3	1.047,8	564,9	652,2	1.218,9	1.328,3	1.334,7	1.510,0

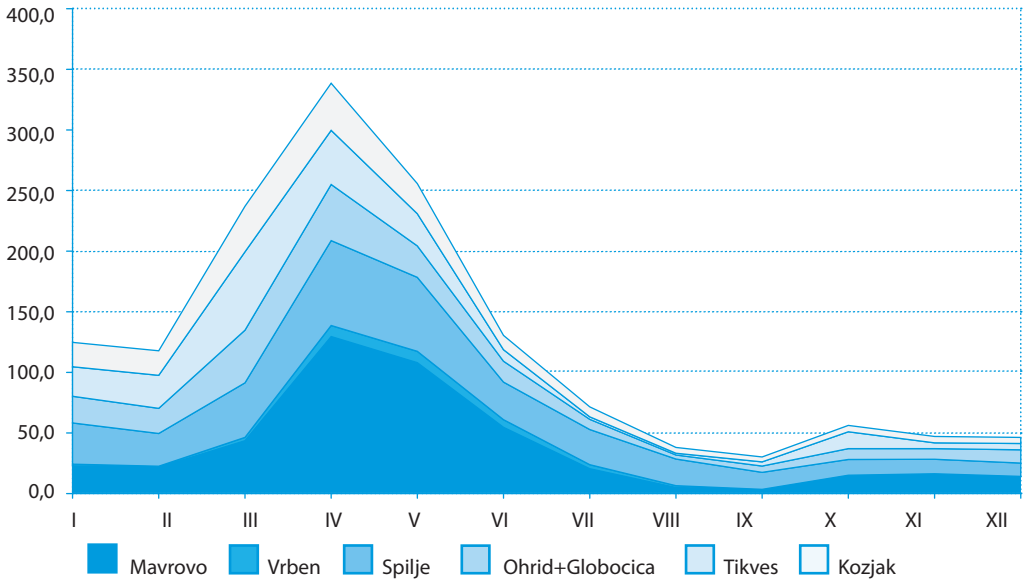
HYDRO POWER PLANTS	2005	2006	'06/'05	'05	'06
	GWh	GWh	%	%	%
Vrutok	425,9	423,5	-0,6	31,9	28,0
Raven	46,5	48,9	5,1	3,5	3,2
Vrben	38,0	34,7	-8,8	2,8	2,3
Spilje	316,7	363,4	14,7	23,7	24,1
Globocica	212,9	232,6	9,3	16,0	15,4
Tikves	128,8	227,4	76,5	9,7	15,1
Kozjak	165,9	179,6	8,3	12,4	11,9
Total	1.334,7	1510,0	13,1	100,0	100,0

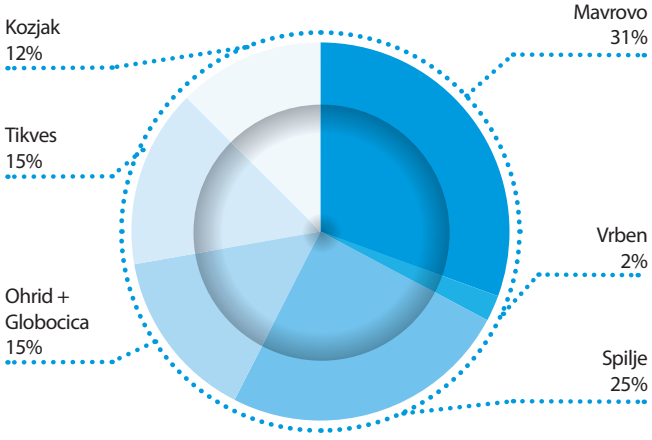


Inflows in the Storages

GWh

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
Mavrovo	22,9	21,8	43,7	129,7	108,1	54,7	20,5	5,0	3,4	15,1	16,3	14,1	455,4
Vrben	1,4	0,8	2,8	9,1	9,3	6,3	3,3	1,5	0,1	0,0	0,0	0,1	34,7
Spilje	34,0	27,0	45,0	70,0	61,0	31,0	29,0	22,0	14,0	13,0	12,0	11,0	369,0
Ohrid + Globocica	22,0	20,7	43,4	46,3	25,9	17,2	8,4	3,3	5,2	8,9	8,7	11,0	221,0
Tikves	24,4	27,3	64,6	44,7	26,5	9,5	2,0	1,5	3,5	13,9	4,8	5,2	227,7
Kozjak	20,1	20,2	37,6	38,9	24,8	11,8	8,2	4,8	4,0	5,3	5,3	5,0	186,0
Total	124,7	117,8	237,0	338,5	255,7	130,5	71,5	38,0	30,2	56,2	47,1	46,4	1.493,7

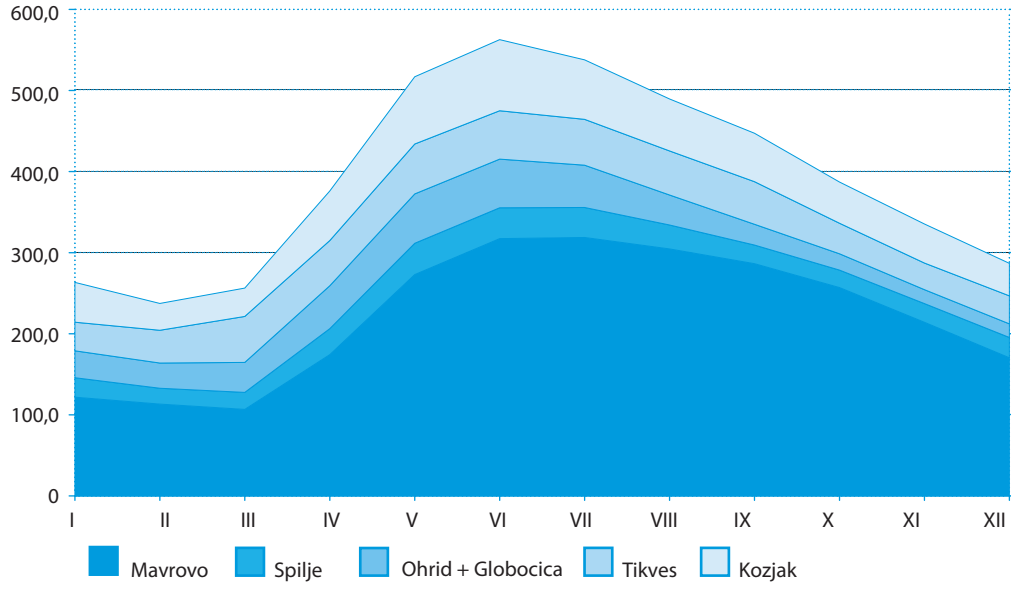




Avarage monthly condition of the storages

GWh

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
Mavrovo	121,8	113,3	106,7	174,3	273,1	317,4	318,8	304,7	286,5	257,0	214,2	170,4	2.658,1
Spilje	24,0	19,5	21,0	32,0	38,5	38,0	37,0	29,5	23,0	21,5	23,0	25,0	332,0
Ohrid + Globocica	33,2	31,1	36,9	52,9	60,9	60,0	52,0	36,9	25,6	20,1	17,2	16,8	443,7
Tikves	35,2	40,4	56,6	55,7	61,5	59,6	56,5	54,3	52,4	37,6	32,8	34,4	577,2
Kozjak	49,2	33,1	35,0	61,1	82,9	87,7	73,3	64,1	59,7	50,8	48,1	40,2	685,1
Total	263,3	237,3	256,3	376,0	516,9	562,6	537,7	489,5	447,2	387,1	335,3	286,8	4.696,1




ELEM
MACEDONIAN POWER PLANTS
4
2006
THERMAL
MINES
HYDRO
ECOLOGY
FINANCES

4 WE TAKE CARE FOR THE ENVIRONMENT

"Our ancestors did not gave us Earth in heritage, they just borrowed it to us to preserve it for the future generations"

The electricity is the most quality and pure form of energy and according to that the key element in the raising of the quality of living and in the securing of the sustainable development. All companies try more and more to achieve and present its self contribution for protection of the environment through control of the impact of its activities, processes and services.

The sustainable development of our company demands equal care in all aspects of working. We persist to act responsibly, maintaining balance between the economic, social goals and the impact on the environment. The Energy policy of our company is in accordance with the European Energy policy which means investment in pure energy production, strict respect of the Ecological constitution – Law on Environment, preparation of programs for protection of the environment as well as the obligation to pay ecological taxes for our production.

Our principles are based on national references are in accordance with the positive law regulations and it means accomplishing of the energy policy through more rational usage of the energy resources and development of the renewable energy resources.

ENVIRONMENTAL POLICY DECLARATION

Basic principles of the Declaration of the JSC ELEM Executive Board for the policy for protecting, preserving and improving of the environment

\Aware of the necessity for protecting, preserving and improving of the environment for the present and future generations, and intending to promote the sustainable development, with this Declaration, We, as governing team together with all employees in JSC ELEM, announce the following leading principles of our environmental policy:

- We will permanently work on rising of the environmental awareness to signify the preciousness of the electrical power, its high value and the great importance of its rational usage.
- With increasing of the energy efficiency of our existing plants and with the politics for stimulating the development and exploitation of the renewable energy sources, We will be an active fighter against the climate changes in the country and also globally.
- Our basic determination is consequent respect of the relative legal regulation as well as the permanent active participation in its improving, promoting and adjusting with the European.

Fundamental and obligative principle of our company is the slogan:

" Our ancestors did not give us the Earth in heritage, they just borrowed it to us to preserve it for the future generations"

In Skopje on 16 October 2006
JSC ELEM

Vlatko Cingoski, Ph.D.E.E.
Chairman of Board of Directors

4.1 ENVIRONMENTAL ASPECTS -THERMAL POWER PLANTS-

4.1.1 - MPC Bitola

The methodology for monitoring the emission of pollutant gases in the air relies on the references according the standards ISO 9096 and ISO 3966.

For determination of the pollutant gases concentration, the measurements are performed with fluid analyze device type TESTO – 33. The determination of the dust concentration is performed with gravity – metric method with use of the instruments GRAVIMAT SCH – 500, APA – 30 and TESTO -512. The samples taken with the above mentioned instruments are examined in laboratories.

In the technological procedure of electricity generation as products of combustion arise ash and slag. Theirs transportation is performed with system of batchers, conveyor belts, reloads and dredgers.

Annual concentration of pollutant substances is presented in the following table:

Pollutant substances

		2006
SO_2	t	49.561
CO	t	329
NOx	t	9.680
CO_2	mg/m^3	648,3
Dust	t	3.397
Ash	t	1.028.427,6
Slag	t	133.579

The analyses of the waste waters are performed in the TPP itself, four times a year. The analyses are performed with well-known titration standard methods, spectral – photometric, photometric, gravity metric and with appropriate chemical analyze devices with specific conductance and measurement of pH.

The apparatus which is used is the following:

- pH meter – Jenway
- conduct – meter – Jenway
- spectral – photometer – UV-VIS – Jenway
- spectral – photometer – photometer – MERCK
- ember stove – LP – 08
- sterilization device – ISKRA

The locations which are monitored are the following: outflow canal of MPC, X canal previous to inflow of waste water. The quantity of waste water coming from the chemical technological section amounts to 26.526m^3, in year 2006.

4.1.2 - MPC Oslomej

In order to determine the concentration of pollutant gases, the measurement are performed with Sick device, located on the chimney, at height of 45 m. This device is conducting measurements on the principle of modulation of the monochromatic light.

The determination of the dust concentration is performed with gravity – metric method, using the instruments GRAVIMAT SCH – 500, APA – 30 and TESTO -512. The samples taken with the above mentioned instruments are examined in laboratories.

In the technological procedure of electricity generation as products of combustion arise ash and slag. Theirs transportation is performed with system of batchers, conveyor belts, reloads and dredgers.

Annual concentration of pollutant substances is presented in the following table:

Pollutant substances

		2006
SO_2	t	3.363
CO	t	416
NOx	t	1.403
CO_2	t	477.265
Dust	t	161
Ash and slag	t	111.785

The quantity of waste water coming from the chemical technological section amounts to 493.400 m^3, in year 2006.

4.1.3 - Energetika

The measurements of the smoking gases are with computer analyze device, type EKOM 5860 according to ISO 10708.

Pollutant substances

		2006
CO	t	0,0958
NOx	t	0,0925
CO_2	t	0,0069

The quantity of waste water coming from the chemical technological section amounts to 6.000 t/year.

4.2 ENVIRONMENTAL ASPECTS -HYDRO POWER PLANTS-

4.2.1 - Hydro Power System Mavrovo

Average monthly inflows in the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	4.636	3.663	9.092	36.659	31.116	16.969	5.773	1.967	1.336	3.576	3.262	3.022	10.089

Average monthly outflows from the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	15.245	13.220	8.039	3.610	9.175	10.908	7.664	5.431	5.499	13.353	15.539	13.803	10.124

Average monthly levels of the accumulation in m.a.S.L.

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	1219,70	1216,5	1215,7	1220,7	1227,0	1230,3	1230,2	1229,2	1228,3	1226,7	1223,8	1221,1

The sediment in the Mavrovo accumulation has been screened several times since the object is exploited, and the last screening was in 1989 by the Macedonian Republic Institute for Hydro – Meteorology – Skopje and on the part of the entering building where always has been more sediment than in the accumulation itself. General statement is that the Mavrovo accumulation in respect of the sediment is in good condition, and that is because the built net of sedimentation tanks on the catchments building itself which are of Tyrol type, as well as the built central sedimentation tanks in the two major inflows (Gorna Radika and Shar) directly before the inflowing of the waters in the accumulation. With this is provided the quantity of sediment which enters into the accumulation to be minimal.

Erosion and sediment in the river basins

The river basins area of the Mavrovo system is quite large and spreads over 513 km^2. In respect of the erosion there are not particular problems and the past existing erosive locations are rehabilitated and calmed. In respect of the sediment, each project building is of Tyrol type with its own sedimentation tank where the sediment material is stored, which at determined time is predicted to be cleaned.

In respect of erosion measures till present there has been intervention only on one river which is river Mazdraca, part of the Shar catchment, where because of the extreme erosive activity of the river in the upper part is built protective lattice ferro-concrete construction of Herhaulidze type, which provides for complete calming of the river and there is no erosion of the terrain anymore.

Afforestation in the river basin area and anti-erosive measurements

In respect of the afforestation of the river basin area shall be noted that the greatest part of the river basin area in the Mavrovo accumulation is located in the National Park Mavrovo, which is outstanding afforested, and the exploitation of the forests is minimal. Considering that there was no need for additional afforesting activities around the water basins areas.

4.2.2 - HPP Tikves

The subsidiary HPP Tikves performs specific activities for environment protection and for that purpose are prepared the following elaborates:

1. Physical – chemical characteristics of the waters in the accumulation
2. Erosion of the river basin in the Tikves accumulation
3. The quantity of sediment material in the Tikves accumulation

Physical – chemical characteristics

The examination of the chemical characteristics and the quality of the waters in the accumulation is performed in order to determine the aggressiveness of the waters on the ferro-concrete constructions. The water examples for chemical analyzes are taken by expert team from the Institute for testing of materials "Skopje" – Skopje.

The examined parameters are presented in table with the results for each as follows:

pH value	< 4
sulphates = SO_4	< 250 mg/l
chlorides = Cl -	< 1.000 mg/l
ammonium = NH_4	0,05 mg/l

On base of the taken samples (musters) of water from the above mentioned locations, and after performed analyzes, on base of the provided indicators according the results, can be stated and concluded that the aggressiveness of the water is satisfying the predicted conditions, and it is below the maximum allowed limit of concentrations of chemical parameters, and do not have aggressive and negative impact on the concrete as well as on the steel, namely on all the ferro-concrete constructions.

Erosion in the river basins of the Tikves accumulation

For determination of the erosion coefficient in the river basins of the accumulation, after the analyzes performed, it is determined that the average erosion coefficient for the Tikves profile amounts to Z_{av} = 0,34. This erosion coefficient is from 0,01 for areas with small erosion till 1,51 and more for areas with excessive erosion. According this the river basin of the Tikves accumulation falls in category IV of destruction, namely in the river basin there is medium to small erosion. In the group of rain series most present is the category III of destruction with 13 rain series or 4,29% of the total surface of river basins in Republic of Macedonia.

In accordance with the last measurements performed in the Tikves accumulation it is determined that in the period from 1968 till 1991(23 year period) in the accumulation there is deposited sediment of 29.320.019 m^3 erosive sediment or 1.274.783 m^3/per year. If the sedimentation of the Tikves accumulation with erosive sediment continues with this intensity, the accumulation will be filled in 350 years, which is quite a long period. But, nevertheless, for extension of the accumulation life, as well as for protection of the entire river basin from erosion there is need of overall and coordinated activities, in sense of taking technical, biological and administrative measurements.

Large number of active rain water courses and erosive surfaces in the river basin of Crna Reka, are imposing in the volume of the accumulation to enter large quantities of sediment material which results with reduction of the volume of the accumulation, predicted for accumulation of useful waters. The current state of the accumulation expresses need for anti-erosive works, construction and biological. In accordance with the above mentioned arises need for active continuing of rain arrangements, where the anti-erosive measurements shall be in purpose of future reducing the sedimentation as much as possible, namely theirs entrance in the river basin.

The quantity of sediment material in the Tikves accumulation

Main objective and assignment is to determine the quantities of deposited sediment material in the accumulation, to determine the exploitation life of the accumulation and to determine the measurements and the manner for protection of the accumulation from filling.

The Republic Hydrometeorology Institute – Skopje in the period from 1972 to 1984 has conducted measurements and examinations on the sediment in the Tikves accumulation. Four measurements were conducted and the results for the quantities of the sediment from the measurements are as follows:

1.	Year 1972/73	852.440 m
2.	Year 1973/74	891.236 m
3.	Year 1974/76	1.466.432 m
4.	Year 1976/84	5.288.000 m
Total	Year 1972/84	8.490.000 m

When measuring the sediments the team from the Institute for Waters Utilization uses the measurements conducted at total of 62 cross sections. The objective is to determine the quantities of deposited sediment in the accumulation, to determine the exploitation life of the accumulation and the measurements for protection of the accumulation from filling.

According the measurements and the calculations performed in 1991 for the period 1968 – 1991 in the Tikves accumulation is deposited sediment material with volume of 29.320.019 m^3.

The average deposited volume of sediment per year in the Tikves accumulation from the river basin amounts to 1.274.783 m^3/per year. (River basin area of 5361 km^2)

The average yearly production of deposited sediment in the river basin in the Tikves accumulation for period 1968 – 1991 amounts to 237,80 m^3/per year/km^2.

According the existing technical documentation consisted of theoretical calculations (empirical formulas) it is calculated that the total sediment which shall be deposited per year shall amount to 1.014.640 m^3/per year, namely 190 m^3/per year/km^2 and on base of these assumptions is presumed the exploitation life of the Tikves accumulation.

Comparing the measurements conducted in 1991, with the passed period of 23 years, it is obvious that the measured sediment which has entered in the accumulation is for 1,26 (26%) larger than the one presumed with the theoretical assumptions, and with that the exploitation life of the accumulation is reduced.

The average percentage of depositing of sediment in the accumulation amounts to 0,27%.

The measurements conducted in July 1991, are also obviously presenting the negative regime of sedimentation.

Average monthly inflows in the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	41,55	52,45	108,22	75,02	42,67	15,62	8,81	2,36	5,69	11,27	8,69	9,20	31,80

Average monthly outflows from the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	65,13	42,49	85,10	71,60	31,95	14,40	9,34	1,60	5,49	36,03	17,52	6,24	32,24

Average monthly outflows from the accumulation for irrigation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	-	-	-	-	1,81	4,47	4,61	4,33	1,80	1,52	-	-	3,09

Average monthly levels of the accumulation in m.a.S.L.

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	257,62	255,96	259,52	262,35	263,67	264,32	263,52	262,61	261,91	258,74	254,85	254,17

4.2.3 - HPP Spilje

Programs for accumulation monitoring

On base of the yearly plan for technical monitoring of the dams in AD ELEM, it is planned and is performed regular visual inspection of the accumulation sides.

Cleaning of floating waste material in the accumulation: In 2006 cleanings like this were performed several times.

Average monthly inflows in the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	65,33	60,83	88,95	131,18	107,24	57,32	50,63	39,99	28,85	25,47	24,72	21,26	58,48

Average monthly outflows from the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	74,87	69,19	77,19	92,83	105,10	55,37	56,81	60,75	33,84	25,74	17,17	21,67	57,54

Average monthly levels of the accumulation in m.a.S.L.

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	574,58	571,90	570,46	573,28	580,18	579,06	579,52	578,00	573,10	572,28	572,14	573,72

Physical – chemical analyzes of the waters in the Spilje accumulation

Date of sample taking: 18.04.2001, Lake level: 577,72 maSL, Sample 1m.			Date of sample taking: 18.04.2001, Lake level: 577,72 maSL, Sample 20m.	
No.	Parameter	Resulting Value	Parameter	Resulting Value
1.	Temperature	17,90C	Temperature	11,10C
2.	pH value	8,51	pH value	8,24
3.	Total mineralization	319 mS/cm	Total mineralization	339 mS/cm
4.	Dry residue	157 µg/L	Dry residue	175 µg/L
5.	Consumption of $KMnO_4$	1,26 mg/L	Consumption of $KMnO_4$	1,89 mg/L
6.	Alkaline level "m"	2,42 mol/L	Alkaline level "m"	2,38 mol/L
7.	Alkaline level "p"	0 mol/L	Alkaline level "p"	0 mol/L
8.	Constant hardness	8,21 0D	Constant hardness	8,77 0D
9.	Transient hardness	6,77 0D	Transient hardness	6,66 0D
10.	Bicarbonates (HCO_3-)	176,84 mg/L	Bicarbonates (HCO_3-)	147,21 mg/L
11.	Carbonates (CO_{32}-)	0 mg/L	Carbonates (CO_{32}-)	0 mg/L
12.	Hydroxides (OH-)	0 mg/L	Hydroxides (OH-)	0 mg/L
13.	Magnesium (Mg)	0,87 mg/L	Magnesium (Mg)	0,91 mg/L
14.	Calcium (Ca)	57,20 mg/L	Calcium (Ca)	61,18 mg/L
15.	Sodium (Na)	4,42 mg/L	Sodium (Na)	4,42 mg/L
16.	Potassium (K)	1,18 mg/L	Potassium (K)	1,09 mg/L
17.	Sulfates (SO_{4-2})	32,92 mg/L	Sulfates (SO_{4-2})	26,74 mg/L
18.	Chlorides (Cl-)	32,97 mg/L	Chlorides (Cl-)	38,65 mg/L
19.	Nitrates (NO_3-)	4,25 mg/L	Nitrates (NO_3-)	2,50 mg/L
20.	Silicates (SiO_2)	1,37 mg/L	Silicates (SiO_2)	1,74 mg/L

Measurement of the sediment in HPP Spilje

The last measurement of the sediment is performed in 1987, in accordance of which has been prepared a Study for filling the Spilje accumulation with sediment. The Study has been developed by the Hydro-technical Institute from the Civil Engineering Faculty in Skopje.

In accordance with that study, the sediments are larger at the inflow of Radika river in the accumulation at the location Avmatica at the village Dolno Kosovrasti and at the inflow of river Dolgaska in the accumulation.

In the area from the village Dolno Kosovrasti (The Kosovrasti Spa) to the bridge Melnicki with length of about 500 m, the greatest registered thickness of the sediment amounts to 10 – 11 m.

On the side where the river Crn Drim inflows in the accumulation, the largest sediment is registered on 1200 m. downstream from the point where river Dolgaska inflows in Crn Drim, and which has thickness of 10 – 11 m.

On the both sides of the accumulation, downstream of the noted distances, there is no significant sedimentation of the useful accumulation volume.

In purpose of reducing the sedimentation, there are constructed dams of the Hercaulize type. In 1989 are constructed two dams on the river Dolgaska, and in 1991 at the village Dolno Kosovrasti.

Erosion and sedimentation in the river basin

There are no erosive areas of greater significance. Noticed local erosion with fall of larger gypsum lumps from the right side of the lake on the inflow of the Radika river in the area between Avmatica and the bridge Melnicki.

4.2.4 - HPP Globocica

Programs for accumulation monitoring

On base of the annual plan for technical monitoring of the dams in AD ELEM, it is predicted to be and are performed regular visual inspections of the accumulation sides.

Cleaning of floating waste material in the accumulation is performed once a week.

Average monthly inflows in the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	38,95	39,71	45,45	48,20	40,51	28,45	36,31	27,74	20,61	19,23	16,61	14,83	31,38

Average monthly outflows through the turbines in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	40,15	37,99	45,20	47,22	39,93	30,13	35,56	27,51	20,96	18,81	17,84	14,17	31,29

Average monthly levels of the accumulation in m.a.S.L.

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	686,33	685,15	686,75	687,06	687,60	686,92	685,42	686,22	686,27	686,18	686,31	685,55

Physical – chemical characteristics of the waters in the accumulation

Date	Temp. [°C]	pH [Units]	ORP [mV]	SpCond [mS/cm]	SpCond [µS/cm]	Res [kÛ-cm]	Sal [ppt]	TDS [g/l]	DO% [Sat]	DO [mg/l]	BP [mmHg]
04.12.2003											
minimal	9,81	7,99	387,00	0,30	256,00	4,00	0,12	0,20	62,60	7,06	760,00
maximal	9,96	8,12	406,00	0,30	261,00	4,00	0,12	0,20	68,10	7,69	760,00
average	9,95	8,02	394,82	0,30	256,85	4,00	0,12	0,20	64,31	7,26	760,00

Physical – chemical characteristics of the waters in the river Crn Drim

Date	Temp. [°C]	pH [Units]	ORP [mV]	SpCond [mS/cm]	SpCond [µS/cm]	Res [kÛ-cm]	Sal [ppt]	TDS [g/l]	DO% [Sat]	DO [mg/l]	BP [mmHg]
04.12.2003											
minimal	9,81	7,99	387,00	0,30	256,00	4,00	0,12	0,20	62,60	7,06	760,00
maximal	9,96	8,12	406,00	0,30	261,00	4,00	0,12	0,20	68,10	7,69	760,00
average	9,95	8,02	394,82	0,30	256,85	4,00	0,12	0,20	64,31	7,26	760,00

The last performed measurement of the sediment in the accumulation in 1996 provides results which indicate that the sediment is minimal.

Erosion and sediments in the river basin

There are no significant erosive areas and records for local sediments, on the locations where the confluents inflow in the river Crn Drim.

4.2.5 - HPP Kozjak

The program for monitoring the accumulation namely is monitoring – following and assessment of specific parameters as assessment of the conditions of the accumulation from the following aspects:

The water quality – in procedure is public procurement for selection of institution which is going to control the water quality during this year, in order to follow the dynamics of eventual pollution, compared with the results from earlier analyzes.

Preventive protection of the accumulation – in discussions with several competent institutions and ministries it is initiated, with mutual cooperation, to prepare project for preventive protection of the accumulation Kozjak on principle of self cleaning and organizing natural eco-systems.

Monitoring of the deposited material in the accumulation and the erosive processes is at annual base, in accordance with the survey study for monitoring the sediments and the erosion in the river basin of the Kozjak accumulation. Concrete results are expected for some time because it is "young" accumulation.

Program for recognition and following the changes at the living world in the Kozjak accumulation – initiation of this activity is possible when the accumulation is going to start its function as water system. The predicted activities for this time can be performed on the level of programs and projects of competent institutions, because at least five years are necessary for stabilization of the accumulation.

Cooperation with the Hydrometeorology Institute for following the climate and hydrological changes – with the construction of automatic meteorology station at the facility Kozjak and the construction of three hydrological stations connected with the Republic System of hydrological stations is established mutual electronic data exchange.

Program for terrain changes – the activities in the area of the accumulation are performed several years before filling the accumulation in sense of construction of:

- terrain plan for the area of the Kozjak accumulation;
- urban plans for new villages Zdunje and Blizansko;
- projects and construction of new and dislocated infrastructure;
- dislocation of cultural – historical monuments.

All these initiated activities and part of them realized by the HPP Treska Subsidiary (during the construction of HPP Kozjak), with the filling of the accumulation, are assumed by the local authorities for theirs future realization or utilization of the already finished facilities.

The evidenced data with the already prepared projects presents base for following the area in ecological aspect from demographic, ethnological, economical, tourist and other aspects, and which is obligation of specific state institutions.

Average monthly inflows in the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	27,85	28,02	52,03	53,87	34,40	16,39	11,37	6,59	5,57	7,30	7,31	6,95	21,47

Average monthly outflows from the accumulation in m^3/sec

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average per year
	48,40	27,56	15,50	22,78	28,57	33,68	25,21	12,03	18,47	9,98	19,43	15,67	23,11

Average monthly levels of the accumulation in m.a.S.L.

2006	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	453,60	448,56	448,57	457,22	463,47	464,61	461,28	458,38	457,20	454,40	453,78	450,97

In the phase of preparation of complete technical documentation for construction of the Kozjak dam are prepared the following survey studies:

- Survey study for protection of the Kozjak accumulation and its impact on the environment in the area prepared in 1995;
- Survey study for erosion and intensive rains and arrangement of the erosive areas and intensive rains in the river basin of the Kozjak accumulation.;
- Survey study for monitoring the sediment in the Kozjak accumulation.

The Ecology Survey Study gives evaluation of the influence of the Kozjak accumulation over the environment in the area. The accumulation is formed with construction of the deposit dam in the flume of the river Treska, which accumulates all the waters of its upper and middle stream and the result is accumulation which is going to change the terrain characteristics significantly and has influence on the environment.

The Survey Study has the following parts in its contents:

- Characteristics of the environment before the construction of the accumulation;
- Evaluation of the changes which occur after the construction;
- The possible impacts of the anthropogenic activity on the accumulation ;
- Measurements which shall be taken for reducing of the accumulation negative influence on the environment ;
- Measurements which shall be taken for following the conditions after construction of the accumulation.

With the Survey Study for following the sediment and the Survey Study for the erosion and intensive rains and arrangement of the erosion areas in the river basin of the Kozjak accumulation, it is performed zero geodetic measurement with the on field determination and location of the profiles before the first filling of the accumulation.

Due to the fact that the stabilization of the accumulation lasts at least five years, regular measurements will start to be performed after the period of stabilization and will be performed at least each five years.

For realization of the activities predicted according the Erosion Survey Study, from our side can arise initiative and partial participation. The foreseen scope of antierosive works shall be realized in 10-15 years period, as well as mutual activities of several competent ministries, competent institutions and the local authorities.

ELEM
MACEDONIAN POWER PLANTS

2006

THERMAL

MINES

HYDRO

ECOLOGY

FINANCES

5

Financial Report

Company General Information

JSC ELEKTRANI NA MAKEDONIJA (hereinafter: the "Entity" or "ELEM") is a company established by the spin-off of the generation activity of the vertical integrated Elektrostopanstvo na Makedonija AD Skopje. The business restructuring was completed on September 1, 2005 and the Entity was registered with by Court of Skopje under the registration number 5021/05 on September 9, 2005. The Entity's main activity is production of electricity. The operating structure of the Entity is composed of a Head Office and 8 registered production units, located throughout the Republic of Macedonia: HPP Globocica, HPP Tikves, HPP Spilje, HPP Mavrovo, HPP Treska, MPC Oslomej, MPC Bitola and Energetika.

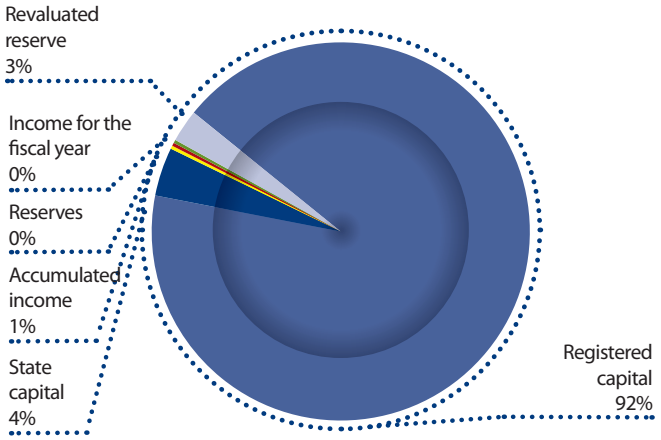
Significant accounting politics

The financial statements of the Entity have been prepared according to the Law on Trading Companies, International accounting standards and approved accounting politics of the entity. Gradational comparations in the annotations are not made because the period of four months in 2005 is the temporarily incomparable with the period of 12 months in 2006. The financial statements are presented in Macedonian denars.

Capital and reserves

The capital together with the reserves amounts 34.427.509.521 denars and covers the following positions:

DESCRIPTION	Amount in denars
Registered capital	31.738.877.821
State capital	1.466.612.951
Reserves	38.850.267
Accumulated income	174.650.125
Income for the fiscal year	11.923.077
Revaluated reserve	996.595.280
TOTAL	34.427.509.521



The registered capital is expressed on a special account in amount which is registered in the trade records.

The residual capital has course of state capital.

The reserves are expressed by nominal value with abstraction of 15% from the net value for legal reserves.

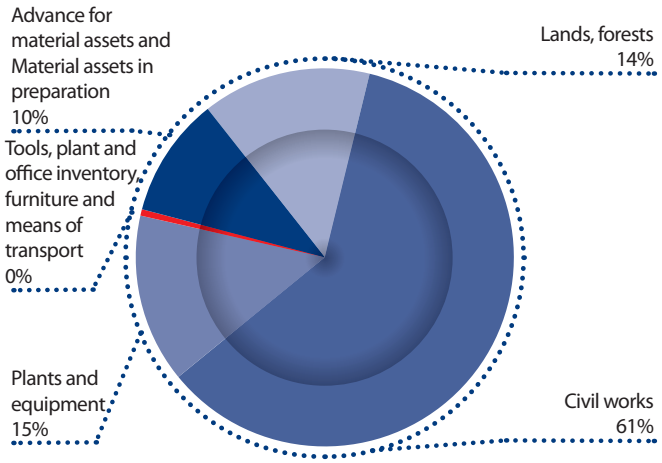
The accumulated income is expressed especially in the business books and the accumulated income of the pervious years amounts 174.650.125 denars. The income for 2006 amounts 11.923.077 denars.

Material asset

Material asset – immovables, plants and equipment are expressed according to the basic treatment at acquisition value reduced for accumulated amortization and accumulated loss due to damage.

Amortization is calculated according to the determined accounting policies of the Company. The calculated amortization for 2006 amounts 1.959.042.058 denars.

DESCRIPTION	Amount in denars
Lands, forests	4.238.493.643
Civil works	17.807.219.070
Plants and equipment	4.301.089.449
Tools, plant and office inventory, furniture and means of transport	139.425.831
Advance for material assets and Material assets in preparation	3.051.224.952
TOTAL	29.537.452.945



Long-term Liabilities

The liabilities on long – term loans, foreign and domestic, are expressed on nominal value increased for sufficient interest according to the contracts, decreased for payment of the capital. The same have treatment as long – term liability if the deadline for accomplishing is more than 12 months.

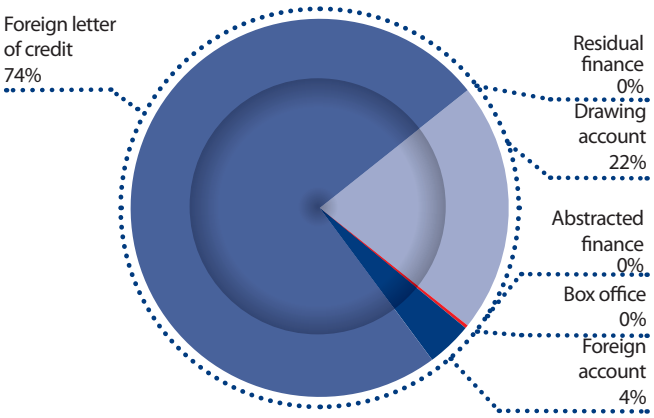
Long – term liabilities based on loans amount 6.479.019.707 denars for:

DESCRIPTION	Amount in Denars	Last annuity
HPP Kozjak	3.653.572.900	
China Bank	3.511.009.598	07.07.2013 year
CWE China	142.563.302	15.07.2013 year
HPP St.Petka		
Depfa Bank	1.286.600.292	14.10.2021 year
Head Office	1.538.846.515	
World Bank(IBRD) 6p.4284	1.434.116.845	15.02.2017 year
Tabak Insurance	8.082.104	01.10.2007 year
Stopanska Bank	96.647.566	01.01.2013 year

Cash and cash equivalents

The finance are short – term assets available for payment of short – term liabilities and regular business expenditures and include:

DESCRIPTION	Amount in denars
Drawing account	242.581.231
Abstracted finance	3.453
Box office	448.775
Foreign account	46.156.659
Foreign letter of credit	837.889.034
Residual finance	136.996
TOTAL	1.127.216.148



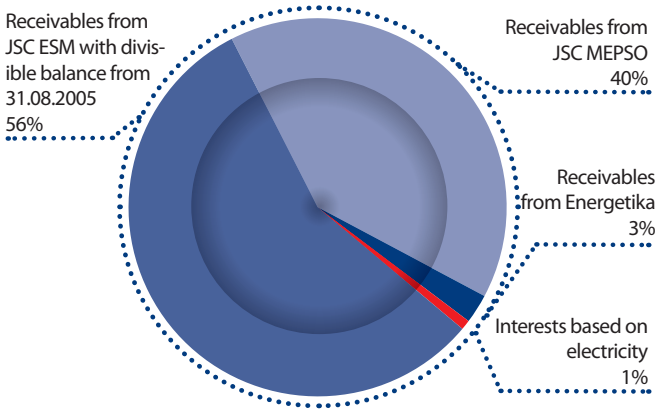
The accomplished liabilities for foreign loans as well as unpaid salaries for December are the reason for the great amount of cash of the drawing account.

The withdrawn exchange assets of Depfa Bank of the special allocate account in Tutunska Bank intended for payment of the accomplished liability for HPP Sveta Petka is bigger item from the exchange letters of credit in the amount of 776.807.794 denars.

Account Receivables

Short-term account receivables are presented by nominal diligence. For the customers' demands which are not paid in the agreed deadline interest is calculated. Short-term account receivables are in amount of 9.984.589.124 denars from which the biggest part are related to:

DESCRIPTION	Amount in denars
Receivables from JSC MEPSO	3.587.393.196
Receivables from Energetika	223.249.656
Interests based on electricity	75.677.719
Receivables from JSC ESM with divisible balance from 31.08.2005	5.042.828.728
TOTAL	8.929.149.299



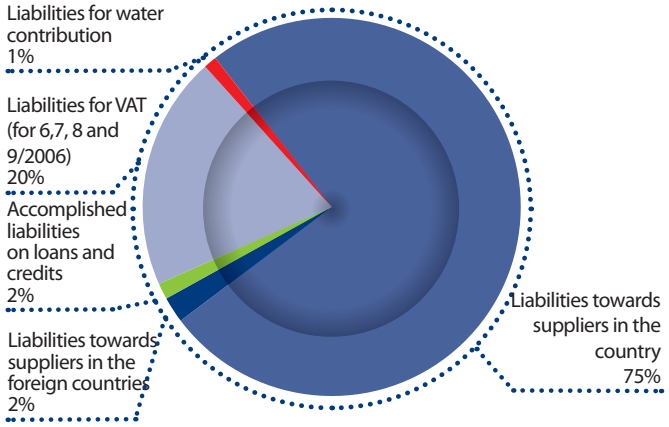
On the demand of JSC ESM gained with the divisible balance there have been made correction of the receivables according to the standards for international accounting information and the accounting policies of JSC ELEM. According to the Law on obligations and the common deadline for obsolescence the dynamic for correction is within 5 years and in 2006 it amounts 930.000.000 denars.

Short – term liabilities

The liabilities are classified as short term if at the date of balance composing is expected to be compensated for 12 months.

The short – term liabilities amount 1.981.918.072 denars for:

DESCRIPTION	Amount in denars
Liabilities towards suppliers in the country	1.493.821.145
Liabilities towards suppliers in the foreign countries	40.192.443
Accomplished liabilities on loans and credits	30.424.313
Liabilities for VAT (for 6,7, 8 and 9/2006)	397.786.440
Liabilities for water contribution	19.693.731
TOTAL	1.981.918.072



The overtaken outstanding liabilities before October 2006 are balanced at installments every 5th in the month.

Inventories

Inventories are composed of raw materials, spare parts, fixtures and fittings, tires and lignite.

JSC ELEM Skopje uses the basic treatment for procurement activity of the reserves using the cost formula for ponderable average.

The reserves of lignite are according to the cost price which is composed of direct expenditures for mineral excavation and adequate part of the general expenditures that are product of the excavation.

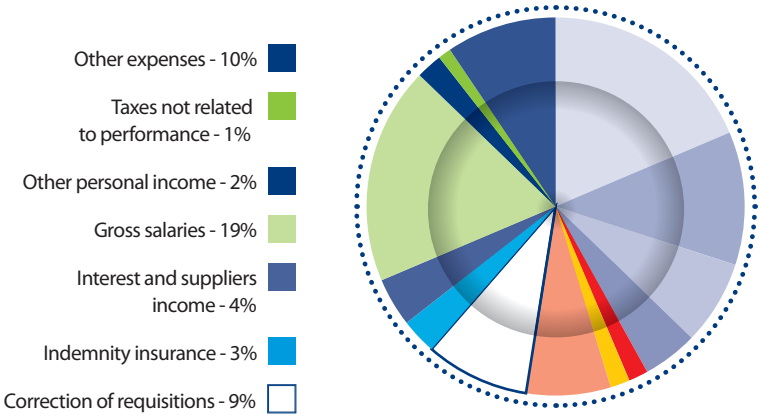
The reserves with condition 31.12.2006 amount 1.812.328.291 denars from which 184.280.195 denars are reserves of raw materials and materials, 1.598.462.028 denars reserves of spare parts and 29.586.068 denars reserves of fixtures and fittings.

The reserve of the uncompleted production (excavated coal) of 31.12.2006 amounts 124.170.287 denars.

In 2006 estimation was made for the reserves that are not applicable in amount of 21.094.126 denars. There is a correction of the reserves' value for the same.

Total expenses received

	Accomplished I-XII. 2006
EXPENSES	Amount in denars
Depreciation	1.959.042.058
Investment and current maintenance	1.176.857.302
Expenses made of own electricity consumption	753.706.255
Fuel for electricity generation	490.446.096
Mines ash depositing	180.553.355
Mining expenses	166.937.124
Expenses made of procured electricity (Energetika)	752.367.628
Correction of requisitions	930.000.000
Indemnity insurance	334.868.164
Interest and suppliers income	418.076.001
Gross salaries	1.938.374.673
Other personal income	243.865.731
Taxes not related to performance	107.472.865
Other expenses	998.138.333
Total expenses	10.450.705.585



Staff expenses

Staff expenses are presented according to the nominal amount and include gross salaries of the employees and the allowances of the staff expenses.

DESCRIPTION	Amount in denars
Net salaries	1.137.326.366
Contributions and payment taxes	801.048.307
Allowances of staff expenses	243.865.731
TOTAL STAFF EXPENSES	2.182.240.404

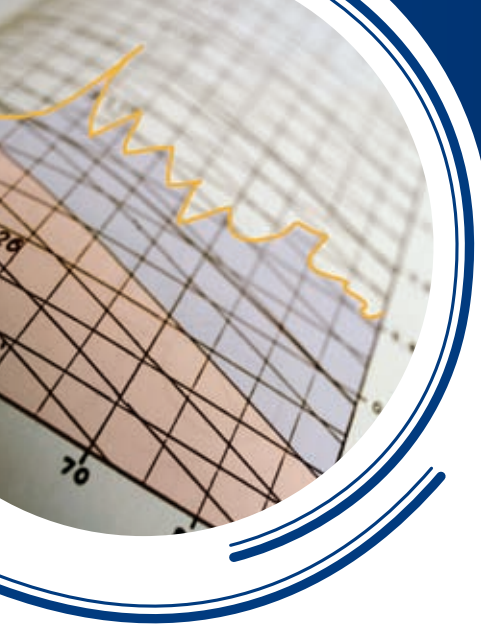
Consumed material and fixtures and fittings

Consumed materials are presented by procured amount and the withdrawal of the minor inventory is accomplished 100% with usage of the same.

Income received

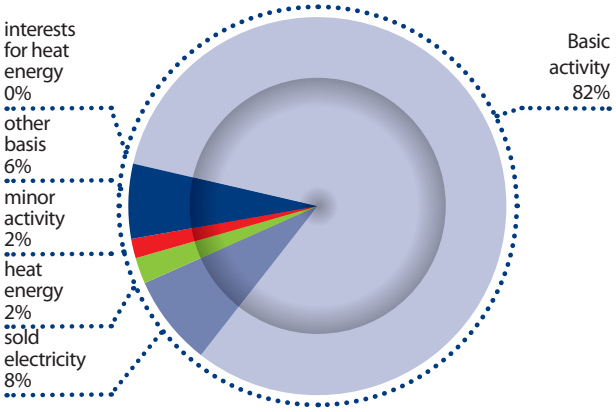
The incomes of the goods sale and services are presented by objective value. VAT is not included in the incomes.

The total income of JSC Macedonian Power Plants accomplished on all basis for the period I-XII 2006 amounts 10.620.936.738 denras.



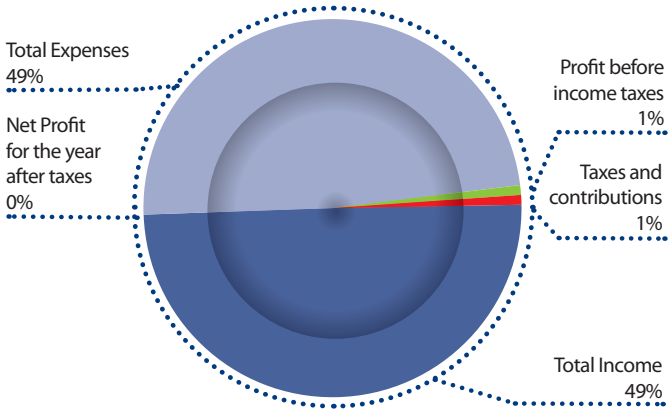
Accomplished total income

INCOMES	Amount in denars
Basic activity income	8.627.228.116
-incomes of produced electricity	7.873.521.861
-incomes of individual electricity	753.706.255
-incomes of interests for electricity	75.677.719
Incomes of sold electricity	812.050.989
Incomes of heat energy	243.487.929
incomes of interests for heat energy	659.811
Incomes from minor activity	193.428.699
Incomes on other basis	668.403.475
TOTAL INCOMES	10.620.936.738



Financial result received

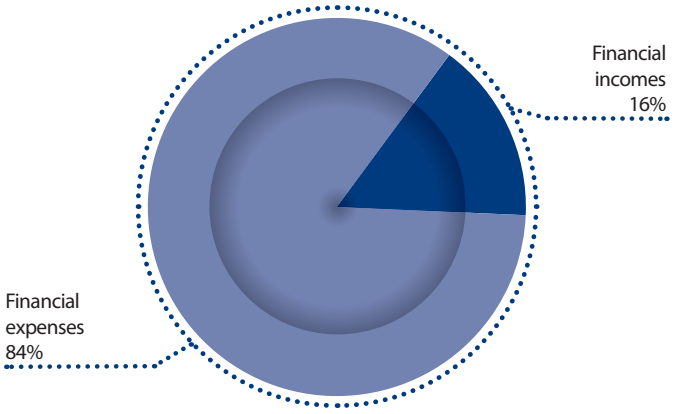
	Accomplished I-XII. 2006
Total Income	10.620.936.738
Total Expenses	10.450.705.585
Profit before income taxes	170.231.153
Taxes and contributions	158.308.076
Net Profit for the year after taxes	11.923.077



The financial incomes and financial expenses for 2006 are :

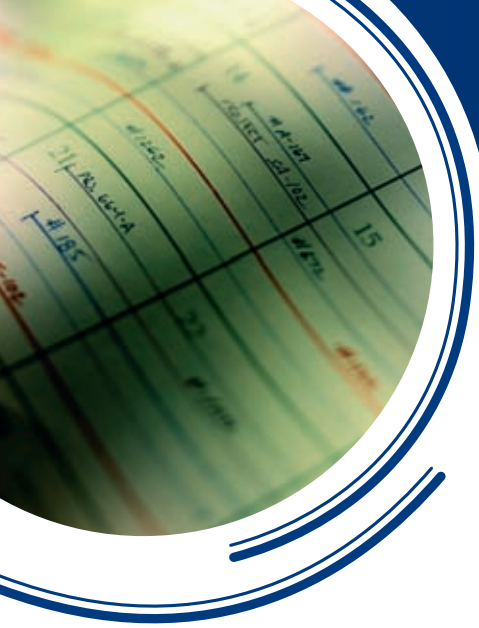
Financial Income and Expenditures

	Amount in denars
Financial incomes	77.721.320
Financial expenses	418.076.000



The incomes of interests for continuous requirements in amount of 76.346.371 denars and the interests of banks in amount of 1.374.949 denars are included in the financial incomes.

Interests of the long term loans from the banks in amount of 297.020.036 denars, simple interests in amount of 39.487.708 denars and interests for promptly paid liabilities towards suppliers in amount of 81.568.256 denars. The interest that refers only for the accounting period is included in the expense.



Income tax

Income tax is calculated in accordance of Income tax Law with rate of 15 % in amount of 158.308.076 denars.

Not allocated net income

The amount of the net income of 10.134.615 will be allocated in 2007 after the Council will make a decision.

JSC MACEDONIAN POWER PLANT-SKOPJE
INCOME STATEMENT
For year ended 31 December 2006
(thousands of denars)

	December 31,2006
Revenue	
Electricity revenue	8.685.567
Other operating income	612.955
	9.298.522
Expenses	
Lignite manufacturing costs	(3.413.961)
Amortization and depreciation	(1.533.071)
Staff costs	(1.180.413)
Maintenance and insurance costs	(293.057)
Raw materials and consumables	(1.243.781)
Other operating costs	(657.236)
Allowance for bad and doubtful debts, net	(913.697)
Allowance for obsolete inventories	-
Impairments of investments	-
	9.235.216
Operating profit	63.306
Finance income	78.381
Finance costs	(418.074)
Foreign exchange gains / losses, net	446.618
Profit before taxation	170.231
Income taxes	(158.308)
Net profit for the year	11.923

JSC MACEDONIAN POWER PLANT-SKOPJE

BALANCE SHEET

For year ended 31December 2006

(thousands of denars)

	December 31,2006
ASSETS	
Non – current assets	
Intangible assets	10.663
Property, plant and equipment	28.830.336
Other financial assets	903.353
	29.744.352
Current assets	
Inventories	1.952.012
Trade and other receivables	9.540.213
Prepaid expenses	915.907
Short – term borrowings	53.565
Short – term bank deposits	63.132
Cash and cash equivalents	1.307.421
	13.832.250
Non – current assets held for sale	-
TOTAL ASSETS	43.576.602
EQUITY AND LIABILITIES	
Capital and reserves	
Shared capital	31.738.878
Revaluation reserves	996.595
Obligatory reserves	38.850
Other capital	1.466.612
Retained earnings	186.574
	34.427.509
Long – term liabilities	
Interest bearing borrowings	5.818.592
	5.818.592
Current liabilities	
Trade payable and other liabilities	2.509.949
Income taxes payable	150.776
Short – term borrowings	669.776
	3.330.501
TOTAL EQUITY AND LIABILITIES	**43.576.602**

JSC MACEDONIAN POWER PLANT-SKOPJE

STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2006

(thousands of denars)

	Share Capital	Revaluation Reserves	Obligatory Reserves	Other Capital	Retained Earnings	Total
Balance at September 1, 2005	31.738.878	-	-	-	-	31.738.878
Difference from business restructing	-	-	-	-	(7.947.151)	(7.947.151)
Contribution in kind-investments in subsidiaries	-	-	-	-	265.032	265.032
Profit for the year	-	-	-	-	10.503	10.503
Balance at December 31, 2005	31.738.878	-	-	-	(7.671.616)	24.067.262
Adjusments of the previous auditor	-	996.595	38.376	1.473.335	7.846.741	10.355.047
Balance at January 1, 2006 adjusted	31.738.878	996.595	38.376	1.473.335	175.125	34.422.309
Transfer of profit for the year 2005 to obligatory reserves	-	-	474	-	(474)	-
Received donations -property, plant and equipment	-	-	-	29.605	-	29.605
Write down of apartments in social ownership	-	-	-	(35.839)	-	(35.839)
Profit for the year	-	-	-	-	11.923	11.923
Other	-	-	-	(489)	-	(489)
Balance at December 31, 2006	31.738.878	996.595	38.850	1.466.612	186.574	34.427.509

JSC MACEDONIAN POWER PLANT-SKOPJE

CASH FLOW STATEMENTS

For the year ended 31 December 2006

(thousands of denars)

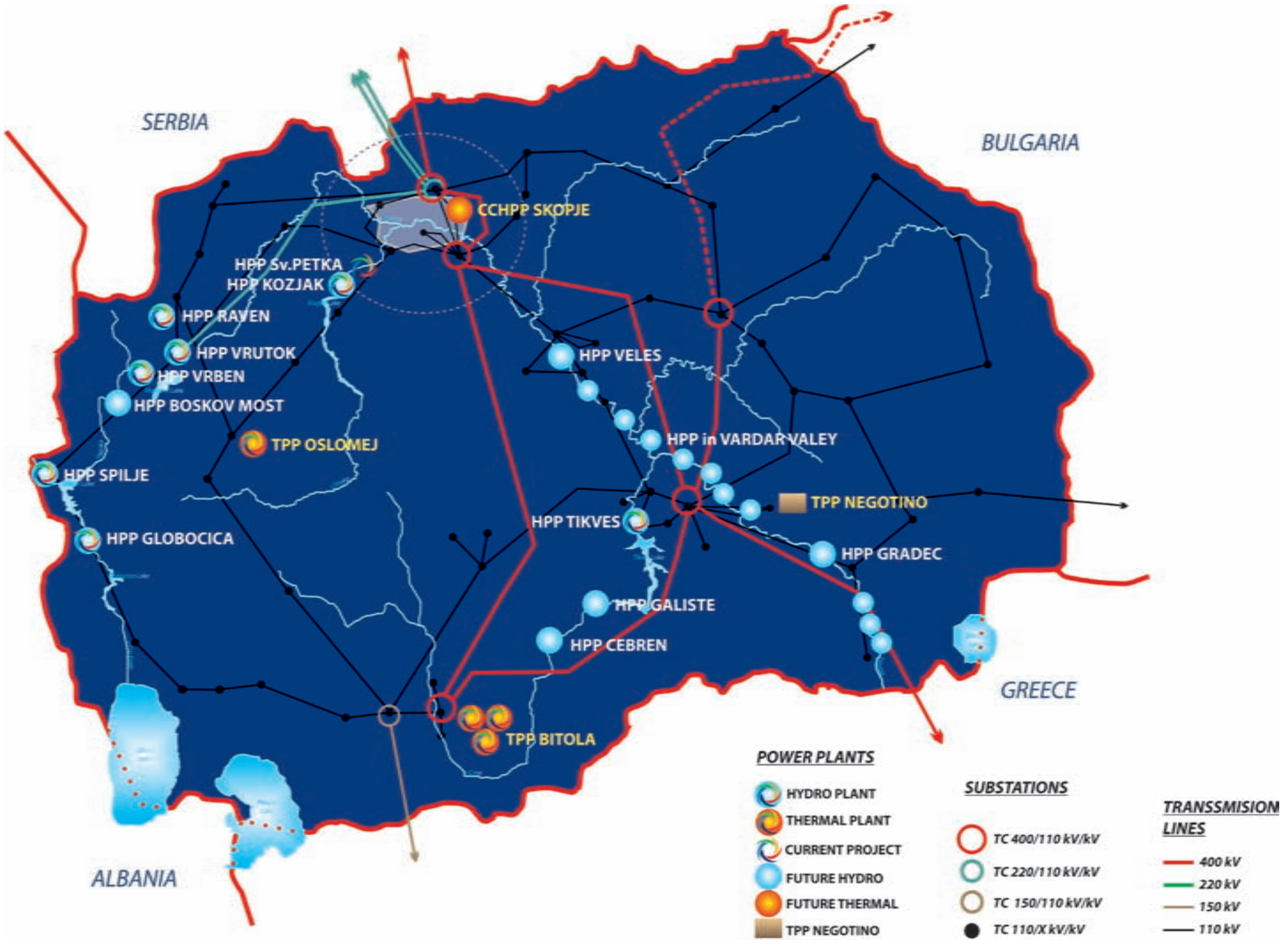
	December 31,2006
Cash flows from operating activities	
Income before income tax	170.231
Adjustment for:	
-Depreciation	1.961.032
-Allowance for bad and doubtful debts, net	913.697
-Allowance for obsolete inventories	-
-Impairment of investments	-
-Income from donations	(22.701)
-Write – off of tangible and intangible assets	-
- Write – off of property , plant and machinery	3.989
- Write – off of inventories	13.647
-Write – off of un reconciled balances with AD ESM – EVN	118.200
-Write – off of other receivables	70.185
-Write – off of payments in advance for fixed assets	6
-Borrowing costs	378.587
-Foreign exchange gain/ losses	(453.972)
	3.152.901
Decrease / Increase of inventories	81.785
Increase of trade receivables from customers and other receivables	(1.314.725)
Decrease / Increase of prepaid expenses	43.208
Increase / Decrease of short-term borrowings and deposits in banks	(63.132)
Increase of trade payables	570.336
Paid interests	(467.570)
Income tax paid	(10.284)
Cash flows from operating activities	1.992.519
Cash flow from investment activities	
Advances paid for property, plant and equipment	(707.117)
Purchase of property, plant and equipment	(729.498)
Net cash used in investment activities	(1.436.615)
Cash equivalents from investing activities	
Inflow / (payment) of interest bearing loans	689.903
Inflow of cash equivalents from shareholders	-
Cash equivalents used in financial activities	689.903
Net increase of cash and cash equivalents	1.245.807
	61.614
Cash and cash equivalents as of December 31	1.307.421

GIVE US YOUR OPINION

This 2006 Annual Report is available in electronic format on ELEM website:
www.elem.com.mk

In order for us to know your opinion, you can send us your comments and suggestions through the above mentioned website.

Thank you. We very much value your opinion.


SERBIA
BULGARIA
GREECE
ALBANIA
CCHPP SKOPJE
HPP Sv.PETKA
HPP KOZJAK
HPP RAVEN
HPP VRUTOK
HPP VRBEN
HPP BOSKOV MOST
TPP OSLOMEJ
HPP SPILJE
HPP GLOBOCICA
HPP VELES
HPP in VARDAR VALEY
TPP NEGOTINO
HPP TIKVES
HPP GRADEC
HPP GALISTE
HPP CEBREN
TPP BITOLA
POWER PLANTS
HYDRO PLANT
THERMAL PLANT
CURRENT PROJECT
FUTURE HYDRO
FUTURE THERMAL
TPP NEGOTINO
SUBSTATIONS
TC 400/110 kV/kV
TC 220/110 kV/kV
TC 150/110 kV/kV
TC 110/X kV/kV
TRANSSMISION LINES
400 kV
220 kV
150 kV
110 kV

JSC MACEDONIAN POWER PLANTS
str. 11 Oktomvri 9
1000 Skopje
Republic of Macedonia
www.elem.com.mk