

SHAREHOLDING COMPANY WITH  
MIXED OWNERSHIP OF CAPITAL  
ТОПЛИФИКАЦИЈА АД - СКОПЈЕ

ТОПЛИФИКАЦИЈА



**ANNUAL REPORT  
OF OPERATION AND ACHIEVED RESULTS  
IN THE ECONOMIC ACTIVITIES OF  
"ТОПЛИФИКАЦИЈА" АД - СКОПЈЕ  
FOR THE PERIOD I-XII.2002**

Republic of Macedonia, April 2003

## 1. INTRODUCTION

The annual report for 2002 was prepared based upon the annual financial calculation, energy and technological balances, as well as separate reports by the separate departments in Toplifikacija AD-Skopje.

It is created in order to supply the necessary information for the Shareholders Assembly on the operation and the results achieved by the shareholding company in the year 2002.

Toplifikacija AD-Skopje is a legal entity carrying out business activities in order to achieve positive financial results - profit. The organizational arrangement of the company has been determined in the form of a Shareholding Company with a mixed ownership of capital

The transformation of the company was achieved during 1999 in accordance with the Law on Transformation of Companies with Public Capital, and also a coordination has been carried out of the company with the Law on Trade companies..

This company has been registered in the registry court Principal Court Skopje I -Skopje, it has been registered in the Trade Registry under T.reg.br.7826 from 05.10.1999 as "Shareholding Company Toplifikacija - Skopje for the Production and Distribution of Heat".

### *T1. Global Economic Indicators in 2002.*

<b>a) Registered consumption in the buildings</b>	<b>575,391</b>	<b>MW</b>
<b>b) Technological capacity</b>		
- Heating plants - available capacity	523,85	MW
- District heating grid - length	148,5	km'
<b>c) Production of heat</b>	<b>700.919</b>	<b>MWh</b>
<b>d) Number of employees on 31.12.2002</b>	<b>365</b>	<b>personnel</b>
<b>e) Consumption of energy sources in our activity:</b>		
- Fuels - in fuel oil equivalents	68.075	t
- Power consumption - active	18.528	MWh
<b>f) Positive financial results - net profit</b>	<b>90,529</b>	<b>10<sup>6</sup> Den.</b>

The basic economic activity of "Toplifikacija" AD - Skopje consists of production and distribution of heat in the region of the city of Skopje.

The other activities are mainly in function of the basic activity, and are determined as follows: distribution of gas fuels, construction and mounting of structures for district heating and gas supply, investment programs, studies and analyses, investment and technical documentation for thermal energy structures, district heating and gas supply grid, scientific research work, and realization of work in engineering in the thermal-techniques and energy sector, programming and software, as well as other activities. In the past period Toplifikacija has broadened its activities in the fields of marketing and sales as well as in foreign trade.

Toplifikacija is carrying out its activities successfully through several of its sector units: Bureau of Directors; Development, Design and Investments Sector; Sector for Production of Heat and Maintenance of Thermal Apparatuses; Sector of Distribution and Measurement of heat and gas, Economic Sector, Personnel Sector and Information System.

The management of the shareholding company is organized in a two level system in accordance with the Company Law, namely:

- Assembly of the shareholders of the company,
- Supervisory Board of the company,
- Management Board of the company.

The Assembly of shareholders of the company was constituted on 05.10.1999, after coordination of the organization of Toplifikacija Skopje with the Company Law. The Assembly is made up of representatives of the owners of share-holding capital in the company.

The Supervision Board is made up of 5 members supervising the management carried out by the Management Board of the company. Its members are nominated by the shareholders' Assembly.

The Management Board manages the shareholding company, it is an organ made up of 7 members, and its members are nominated by the Supervision Board of the company.

The president of the Management Board manages the shareholding company. The president of the Management Board represents and acts in name of the company in its relations with third parties. The same person is also responsible for issues of the employees and work relations in the company.

The Expert Board is an advisory body to the Director. It reviews all issues of the current operation of the company and the development, and passes decisions and opinions on them.

The employees realize their rights and duties based upon their jobs, in accordance with the Collective Agreement of

the shareholding company.

Health protection of the employees is realized by *Labor Medicine* in our city, and a part of the employees are sent to regular annual recreational vacations. During 2002, there were 8 transgressions on the job, of minor character.

### 1.1. PERSONNEL STRUCTURE

At the end of 2002 there was a total of 365 employees in "Toplifikacija" AD-Skopje, of which 286 male and 79 female.

*T 2a. Personnel structure*

Qualification groups			Employees
1			2
1.	VIII /1	+Dr.Sci	1
2.	VII/1	+Univ.Diploma	35
3.	VI/1	+Univ. I-degree	8
4.	V	+Highly Qualified	0
5.	IV	+Secondary school	263
6.	III	+Qualified	43
7.	II	+Half-qualified	0
8.	I	+Non-qualified	16
<b>TOTAL</b>			<b>365</b>

During the year 2002, five persons were employed in the company. At the same time a total number of 10 employees have left our company.

There was a reduction of the work force in the year 2002 from 370 to 365 employees.

*T2b. Number of employees in organizational units*

Department / Sector	Employees
Bureau of directors	8
Sector of Development, design and investments	12
Sector of production of heat and maintenance of thermal apparatuses	120
Sector of distribution and measurement of heat and natural gas	77
Sector of economics	88
Personnel Sector	58
Information System	2
<b>TOTAL :</b>	<b>365</b>

## 2. REALIZATION OF THE ECONOMIC ACTIVITY

The economic activity of Toplifikacija AD - Skopje consists of production and distribution of heat for the heating of apartment and business buildings which are connected to the district heating system of the city. Toplifikacija carried out its activity in the year 2002 through the district heating plants "Istok" /East/ and "Zapad" /West/, as well as through the boiler houses "11-ti Oktomvri". The boiler houses "Vodno" and "Park" have not being operated, the consumption of heat necessary is being satisfied from the Heating Plant Zapad.

The delivery of heat to the consumers is realized in accordance with the mode temperatures diagram which is designed based upon the variation of outside temperatures in the geographic region of the city of Skopje during the heating season.

## 2.1. CLIMATIC PARAMETERS

The average outside temperatures for each heating plant and for each month separately, are stated in the next table. From table T3, one can see that the average outside temperature in the heating period of the year of 7,19 °C is 1,90°C degrees higher than the design temperature - which is 5,29°C. Compared with the latest several years, higher average outside temperatures were registered .

*T 3 Average outside temperature for the months in 2002*

MONTH	Plan	"Istok"	"Zapad"	"11 Okt."	Average
January	0.9	-1.94	-1.78	-1.99	<b>-1.89</b>
February	2.7	6.69	6.38	6.21	<b>6.57</b>
March	6.5	10.92	10.56	10.86	<b>10.80</b>
April	11.0	11.58	11.38	11.93	<b>11.54</b>
October	11.0	12.89	12.7	12.89	<b>12.83</b>
November	7.3	8.51	8.17	8.2	<b>8.39</b>
December	3.0	4.27	4.05	4.01	<b>4.19</b>
<b>Average:</b>	<b>5.3</b>	<b>7.26</b>	<b>7.05</b>	<b>7.12</b>	<b>7.19</b>

The average outside temperatures in each of the heating plants for each month during the reported period are stated in the previous Table 3. This gives us the average annual temperature for the heating season 2002/2003 amounting to 7,19°C. This temperature is for 1,9°C higher than the design temperature (which amounts to 5,29°C).

## 2.2. HEATING PERIOD

The calendar year of 2002 was planned with 183 heating days or 4.392 heating hours. It was planned for the season of 2001/2002 to end on 15.04.2002, and for the new season 2002/2003 to start on 15.10.2002. The heating season of 2001/2002 lasted upon 18.04.2002 and heating season 2002/2003 started on 01.10.2002 because of lower temperatures, so the heating period lasted 199 days in the year 2002.

## 2.3. INSTALLED CAPACITY

The heat from the Heating Plants "Istok" and "Zapad", as well as from the boiler-houses "11 Oktomvri" and "Park", was delivered to the consumers in the heating months of 2001/2002. The boiler houses "Vodno" and Park, as in the previous heating seasons, remained shut down during the whole year.

The total instal heating capacity of Toplifikacija AD of the year 2002 amounted 523,850 MW were hotwater capacity was 491,130 MW and steam capacity was 32,720 MW.

### 2.3.1. Hot Water Capacity

The total hot water capacity, at the end of year 2002 amounted to 491,130 MW. Of that, 478,300 MW are in active use. The two existing boilers in KO "Vodno" and KO "Park", with a total capacity of 12,830 MW, have been sealed and preserved.

**T5. Hot water boiler capacity in active use**

Type of hot water boiler	Unit Capacity (MW)	No. of boilers	Location (Heating plant)	Total Capacity (MW)
VKSM - 60	69,780	2	"Istok"	139,560
VKSM - 40	46,520	3	"Istok"	139,560
<b>Total</b>	/	5	TO "Istok"	279,120
VKSM -20	23,260	2	"Zapad"	46,520
VKSM -50	58,150	2	"Zapad"	116,300
BKG-100/a	8,150	1	"Zapad"	8,150
<b>Total</b>	/	5	TO "Zapad"	170,970
BKG - 80	5,965	2	"11 Oktomvri"	11,930
BKG - 200	16,280	1	"11 Oktomvri"	16,280
<b>Total</b>	/	3	"11 Oktomvri"	28,210
<b>TOTAL active</b>		<b>15</b>	<b>Toplifikacija AD</b>	<b>478,300</b>

**T5a. Hot water boiler capacity in conserved condition**

Conserved hot-water boilers	Unit Capacity (MW)	No. of boilers	Location (Heating Plant)	Total Capacity (MW)
CVG - 120	1,94	2	KO "Vodno"	3,880
BKG - 60	4,475	2	KO Park	8,950
<b>TOTAL conserved</b>	/	4	Toplifikacija AD	12,830

**2.3.2 Steam Capacity**

Total steam capacity was 32,720 MW from which the heating plants "Istok" and "Zapad" continue to satisfy our own needs of heat and technological steam with two block boilers each. Of the total steam capacity, two steam boilers BKG-100 are in use in the heating plant "Istok" and two steam boilers are in use in "Zapad", while only the steam boiler BKG-80 remains conserved in the heating plant "Istok".

**T5b. Steam capacity in active use**

Type of steam boiler	Unit Capacity (MW)	No. of boilers	Location (Heating Plant)	Total Capacity (MW)
BKG - 100	7,405	2	"Istok"	14,81
<b>Total</b>	/	2	TO "Istok"	14,81
BKG - 80	5,97	2	"Zapad"	11,94
<b>Total</b>	/	2	TO "Zapad"	11,94
<b>TOTAL active</b>	/	4	"Toplifikacija"	26,75

Table T5b shows the steam boilers which are in active use.

The remaining block boiler in its current location is in the following table.

**T5c. Conserved Steam Capacity**

Type of steam boiler	Unit Capacity (MW)	No. of boilers	Location (Heating Plant)	Total Capacity (MW)
BKG - 80	5,970	1	TO "Istok"	5,970
<b>TOTAL conserved</b>	/	1	"Toplifikacija"	5,970

## 2.4. CONNECTED HEAT CAPACITY

The following table shows the state of the capacity according to categories of consumers on 31.12.2001 and on 31.12.2002, according to data from the Economy Sector of Toplifikacija AD - Skopje.

*T6. Connected heat capacity on 31.12.2002.*

TYPE OF CONSUMERS	2001			2002			Index (7/4)
	Installed	Activ	Engaged (Calculated)	Installed	Activ	Engaged (Calculated)	
1	2	3	4	5	6	7	8
<b>a) Residential space</b>	<b>368.115</b>	<b>364.301</b>	<b>348.333</b>	<b>373.648</b>	<b>368.461</b>	<b>357.474</b>	<b>102.62</b>
1. Colective buildings			320.875			329.966	
1.1. Payment 6 months			3.469			3.469	
1.2. Payment 12 months			317.406			326.497	
2. Individual residential houses			27.458			27.508	
<b>b) Business space</b>	<b>178.515</b>	<b>178.299</b>	<b>148.623</b>	<b>180.482</b>	<b>180.298</b>	<b>139.156</b>	<b>93.63</b>
1. Fixed rate payment			44.693			41.846	
2. Peyment according to messuring			103.93			97.31	
v) Institutions	16.407	16.487	14.312	16.973	16.973	14.608	102.07
g) Elementary schools	16.310	16.304	16.125	15.776	15.776	13.660	84.71
<b>TOTAL:</b>	<b>579.347</b>	<b>575.391</b>	<b>527.393</b>	<b>586.879</b>	<b>581.508</b>	<b>524.898</b>	<b>99.53</b>

From the books of Toplifikacija AD, it is obvious that tree kinds of consumption is registered, namely these are *Installed*, *Active* and *Engaged* capacity of the consumers. The Active capacity is the one determined from the reading of the heat meters during the heating period. A larger part of the consumers from the business as well as individual consumers have a possibility to carry out regulation of the quantity of energy they need, so that the consumption changes compared with the installed situation determined from the mechanical engineering design for the installations of the constructed house.

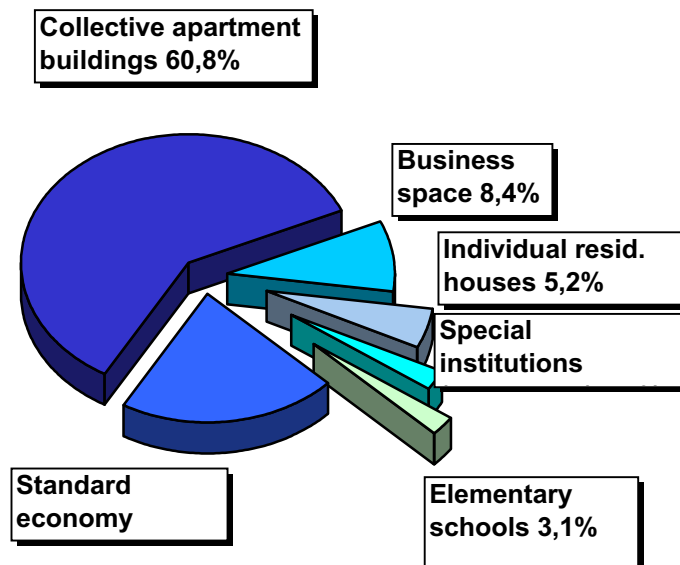
Heat meters are planned in the development planning of Toplifikacija AD, namely installation of heat meters in all buildings which have been connected to the district heating system.

Based upon data from the Economy Sector of Toplifikacija on the consumers with a fixed rate payment, we have accepted the following values for specific heat burdening: 131,228 W/m<sup>2</sup> for residential apartment buildings and 140 W/m<sup>2</sup> for business with a fixed rate payment.

The previous table shows that we have a constant change of consumption in the various categories of consumers. We can thus see a constant increase of consumption in the category of collective buildings /high multi-apartment buildings with a vertical distribution in the building) as well as in standard buildings - business.

Of the total number heat consumers connected to our system, residential buildings (individual houses with heat measurement, as well as collective buildings with fixed rate payment) participate with 63,5 % of the installed consumer capacity, and with 63,3 % of the active consumer capacity.

- **installed capacity** is the capacity according to the design documentation, while the
- **active capacity** is the one the consumer is currently utilizing and which is corrected every 3 months in accordance with higher or lower consumption.



## 2.5 FUEL CONSUMPTION

### 2.5.1. Consumption of Fuel Oil

In the year 2002, 52.263 tons of fuel oil were consumed. The consumption of fuel oil in the separate heating plants and for each month is given in the following table. From the table, one can see that, compared with the planned quantities, all heating plants have realized a lower consumption of fuel oil

Most of the consumption of fuel oil was realized in the two main heating plants "Istok" and "Zapad" which have a greatest consumer capacity connected to them.

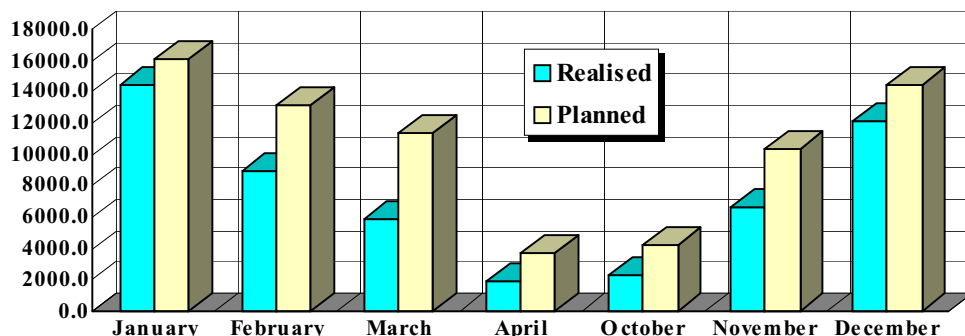
*T 7 Consumption of fuel oil in the months of 2002.*

MONTH	Istok	Zapad	11 Oktom.	Total
January	7745.6	5705.3	964.3	14415.2
February	5217.5	3126.8	607.4	8951.7
March	3146.7	2392.7	372.3	5911.6
April	419.2	1320.2	219.9	1959.3
October	580.5	1506.3	219.5	2306.3
November	3192.4	2902.1	542.2	6636.7
December	7410.2	3953.3	719.2	12082.7
<b>TOTAL:</b>	<b>27712.1</b>	<b>20906.6</b>	<b>3644.7</b>	<b>52263.4</b>

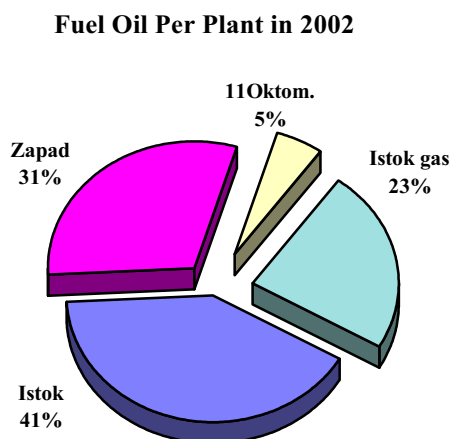
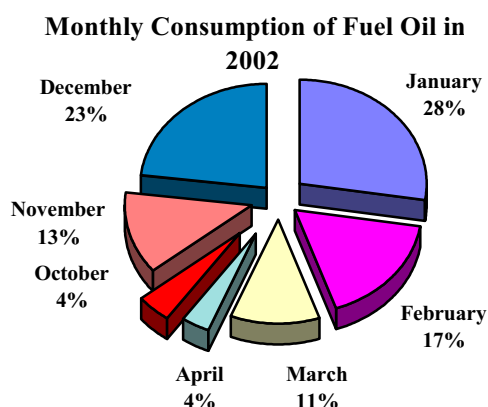
The heating plant "Istok", being the largest energy capacity in our system, has this year also consumed more fuel oil than in the rest of the heating plants together. Compared with the previous years the quantity of consumed fuel oil in this plant is less due to the use of natural gas which is used as substitution for the fuel oil.

The months with the lowest average outside temperatures (January, February, November and December), when the longest periods of delivery of heat were also registered, also registered the greatest consumption. The following graph shows the consumption of fuel oil per month compared with the planned quantities.

## Consumption of Fuel Oil in the year 2002



The upper diagram clearly points out that the consumption per month was under the planned value excluding december, yet the situation is not quite clear due to the substitution of fuel oil with natural gas. The following diagrams give a picture of the percentages in separate months, i.e. the various heating plants, in the total consumption of fuel oil, during 2002.



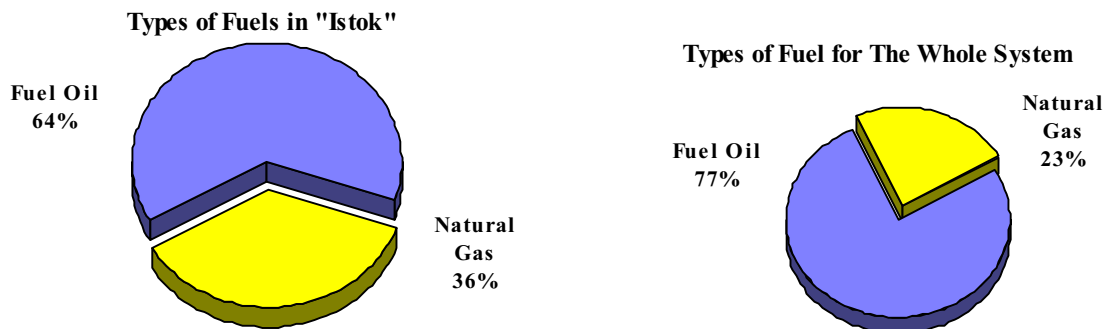
## 2.5.2. Consumption of Natural Gas

During the whole of the heating season of 2002 (with varying intensity) natural gas was also used in the Heating Plant "Istok". The realized consumption during the heating season of 2002, as well as the appropriate quantities of fuel oil which would have been consumed instead of the natural gas for the months of 2002 are stated in the following table T7a.

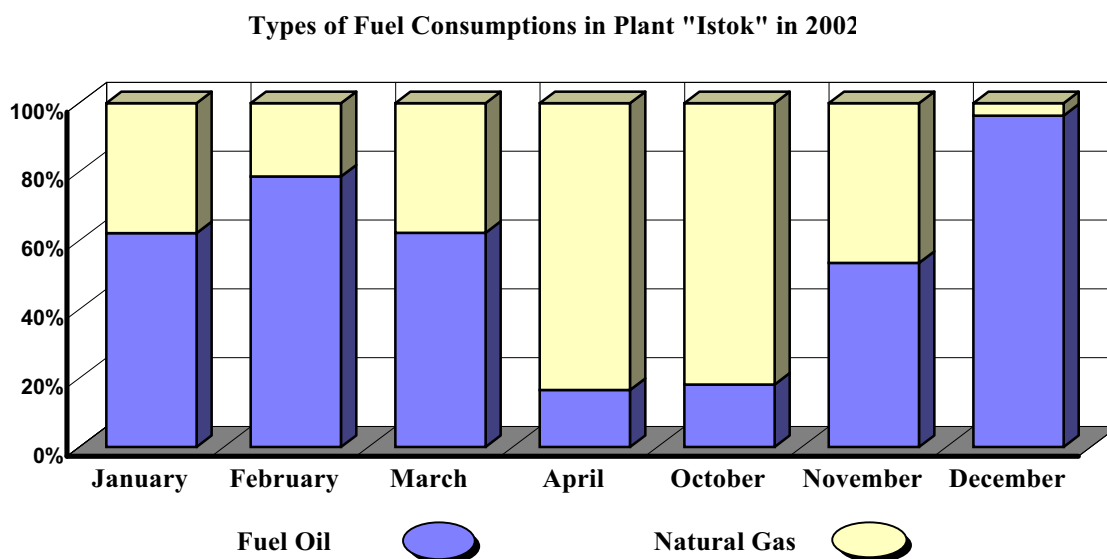
T7a Consumption of natural gas in the months of 2002.

MONTH	I	II	III	IV	X	XI	XII	TOTAL
Natural gas (m <sup>3</sup> )	5.663.295	1.705.664	2.293.861	2.543.791	3.150.015	3.335.374	338.830	19.030.830
Equivalent Fuel oil (t)	4705.4	1417.2	1905.9	2113.5	2617.2	2771.2	281.5	15811.8

The participation of natural gas in the consumption of fuel in the heating plant "Istok" as well as compared to the total consumption in the whole system is given in the following pies.



The bar interpretation gives a percentage of natural gas compared with the fuel oil consumption in the heating months of 2002.



## 2.6. POWER CONSUMPTION

The total consumption of active electric energy in the heating months of 2002, amounted to 18.371.727 (kWh). If we take into account that the planned consumption of electric energy for the year 2002 was 19.925.000 (kWh), the realized total consumption is under the planned level. 155.787 (kWh) of active electric energy has been consumed in the substations, having in mind that the meters were often blocked, so the consumption in the substations should be taken with certain reserve. Here we have to know that in TO Istok was not in use sixth series of circulation pumps in the overall part of heating season, which means that the power consumption has to be larger in the future. We must mention also that the boiler houses "Vodno" functions as a substation, i.e. it is using solely the circulation pump.

The variation of power consumption in the past years (1995/2002) is given in the following table.

*T8 Power consumption in the period 1995/2002.*

Structure	1995 (kWh)	1996 (kWh)	1997 (kWh)	1998 (kWh)	1999 (kWh)	2000 (kWh)	2001 (kWh)	2002 (kWh)
Heating plants	18.819.245	19.357.462	20.387.872	18.837.219	19.120.613	17.733.808	18.713.418	18.371.727
Sub stations	200.580	203.964	187.975	165.636	140.448	185.420	149.778	155.787
<b>TOTAL</b>	19.019.825	19.561.426	20.575.847	19.002.855	19.261.061	17.919.228	18.863.196	18.527.514

If we compare the consumed quantities of active electric energy in the past several years we can notice that there is a tendency of constant increase of the consumption until the year 1997, when the largest consumption has been registered. The next two years after that there is a mild increase.

The year 2002 registers a little decrease of consumed electricity, which is a consequence of the smaller number of series of circulation pumps commissioned in the Heating Plant "Istok". If a sixth series of circulation pumps was commissioned in the Heating Plant "Istok", that would increase the consumption of electric energy, which can be the case in the future.

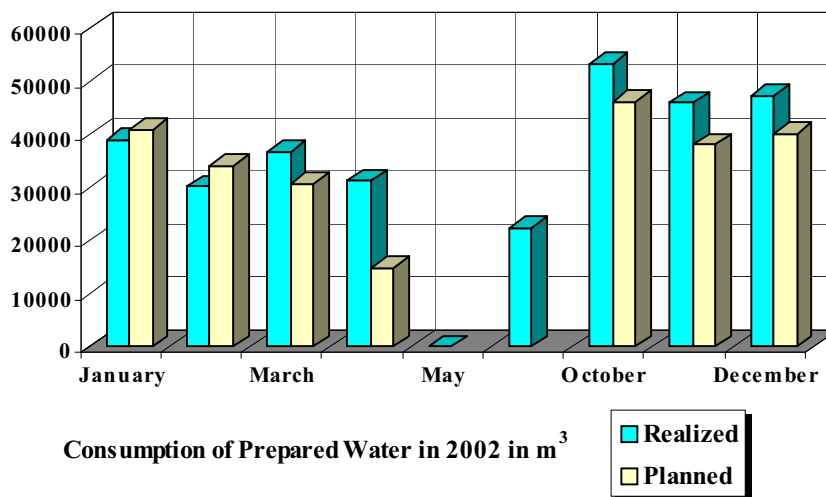
## 2.7. CONSUMPTION OF CHEMICALLY PREPARED WATER AND SALT

The whole system is supplied with water through the heating plants "Istok" and "Zapad", while only the plant "11 Oktomvri", which is not connected to the rest of the system, supplies its own water. The consumption of chemically prepared water for the heating plants for each month in year 2002 is given in the following table. The data has been supplied from the Department of Chemical Preparation of Water.

*T9 Consumption of chemically prepared water in the months of 2002.*

	Istok (m <sup>3</sup> )	Zapad (m <sup>3</sup> )	11 Oktom. (m <sup>3</sup> )	Total (m <sup>3</sup> )
<b>January</b>	19227	18145	1751	<b>39123</b>
<b>February</b>	14955	13478	1834	<b>30267</b>
<b>March</b>	17811	17007	1930	<b>36748</b>
<b>April</b>	16776	13018	1576	<b>31370</b>
<b>September</b>	17327	4549	626	<b>22502</b>
<b>October</b>	29675	21560	2045	<b>53280</b>
<b>November</b>	24969	18860	2216	<b>46045</b>
<b>December</b>	26892	18343	2179	<b>47414</b>
<b>TOTAL:</b>	<b>167632</b>	<b>124960</b>	<b>14157</b>	<b>306749</b>

The following graph gives a picture of the consumption of the chemically prepared water per month in 2002.



The previous graph gives a picture of the consumption of chemically prepared water in each of the months of year 2002. The plan for 2002 intended a quantity of 245.100 (m<sup>3</sup>) prepared water. The realized consumption of 306.749 (m<sup>3</sup>) is above the planned quantity for 61.649 (m<sup>3</sup>) or 25,1% of the total amount. Compared with the consumption for 2002 of 220.591 (m<sup>3</sup>), there was increased consumption in 2002 for 28%.

The following table presents the consumption of industrial salt per month in 2002 as well as in the previous several seasons. Obviously we have increased consumption of salt in the last year after 2 years of decreasing.

**T.9a. Consumption of industrial salt in the heating plants in 199/2002**

	1994 (kg)	1995 (kg)	1996 (kg)	1997 (kg)	1998 (kg)	1999 (kg)	2000 (kg)	2001 (kg)	2002 (kg)
<b>Istok</b>	91.650	116.400	78.050	96.600	132.950	150.000	125.400	112.970	<b>139.150</b>
<b>Zapad</b>	111.300	118.900	90.850	101.650	102.850	87.830	92.000	69.700	<b>108.900</b>
<b>11 Okt.</b>	7.400	5.470	7.200	6.400	6.000	10.950	13.920	11.960	<b>19.575</b>
<b>TOTAL:</b>	<b>210.350</b>	<b>240.770</b>	<b>176.100</b>	<b>204.650</b>	<b>241.800</b>	<b>248.780</b>	<b>231.320</b>	<b>194.630</b>	<b>267.625</b>

Taking into account the planned quantity of salt of 245.100 (kg), the actual consumption is also over this level.

The specific consumption of salt in 2002 amounts to 0,83 kg/m<sup>3</sup> for Heating Plant "Istok", 0,87 (kg/m<sup>3</sup>) for Heating Plant "Zapad" is better than planned, while the Boiler House "11 Oktomvri" this amounts to 1,31(kg/m<sup>3</sup>).

**2.8. PRODUCED HEAT**

A total amount of 700.919 MWh of heat was produced in the heating months of 2002, which is somewhat under the planned quantity for the year of 740.408 MWh. The following table gives the data on produced heat per heating plant per month during 2002, having in mind that the production of heat with fuel oil and gas, as well as the total amount, in plant "Istok" are given separately.

**T10. Production of heat in months and per heating plants in 2002.**

	Istok-fuel oil (MWh)	Istok-gas (MWh)	Istok Total (MWh)	Zapad (MWh)	11 Okt. (MWh)	Total (MWh)
<b>January</b>	79470.0	49011.1	128481.1	58536.4	9893.9	<b>147900.3</b>
<b>February</b>	53531.8	14761.1	68292.9	32081.3	6231.7	<b>91844.7</b>
<b>March</b>	32284.6	19851.5	52136.1	24548.6	3819.7	<b>60652.9</b>
<b>April</b>	4301.2	22014.4	26315.6	13544.7	2256.2	<b>20102.1</b>
<b>October</b>	5955.4	27260.8	33216.2	15455.0	2251.8	<b>23662.2</b>
<b>November</b>	32753.7	28864.9	61618.6	29775.4	5562.9	<b>68092.0</b>
<b>December</b>	76029.1	2932.3	78961.4	40560.4	7378.9	<b>123968.4</b>
<b>TOTAL:</b>	<b>284325.7</b>	<b>164696.0</b>	<b>449021.7</b>	<b>214501.9</b>	<b>37395.0</b>	<b>700918.7</b>

Of the total heat produced, in Heating Plants "Istok" and "Zapad" small part is used for our own needs (heating the fuel oil and working offices) and the rest is delivered to the customers. The total heat delivered from the plants amounts to 698.692 MWh. The quantity of delivered heat from all heating plants for 2002 are stated in the following table.

**T10a. Delivery of heat at the exit of the heating plants in 2002.**

	Istok (MWh)	Zapad (MWh)	11 Oktom. (MWh)	Total (MWh)
<b>January</b>	128056.9	58231.2	9893.9	<b>196182.0</b>
<b>February</b>	67996.2	31919.0	6231.7	<b>106146.9</b>
<b>March</b>	51955.2	24426.9	3819.7	<b>80201.8</b>
<b>April</b>	26291.6	13481.4	2256.2	<b>42029.2</b>
<b>October</b>	33185.3	15383.8	2251.8	<b>50820.9</b>
<b>November</b>	61439.2	29625.6	5562.9	<b>96627.7</b>
<b>December</b>	78525.3	40349.6	7378.9	<b>126253.8</b>
<b>TOTAL:</b>	<b>447449.5</b>	<b>213417.6</b>	<b>37395.0</b>	<b>698262.2</b>

Several years now, the losses from the distributive network are calculated at 17%.

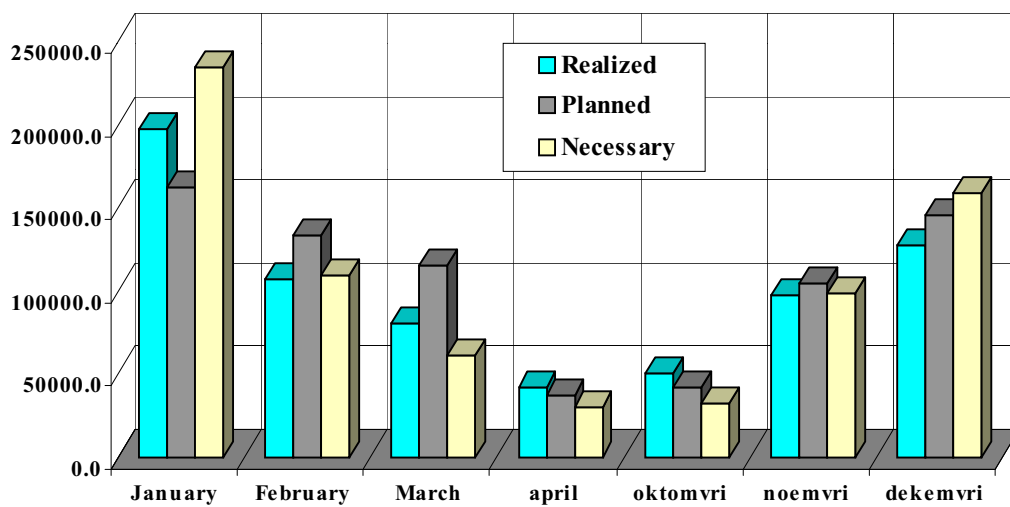
But in 2001 year with instaling heat meters in objects the losses in the distributive network become on level of 13% which means that delivered heat amounts to the consumer in the year 2002 was 607.488 MWh.

The following table presents the values of delivered heat to the consumers from each of the plants per month of the heating season

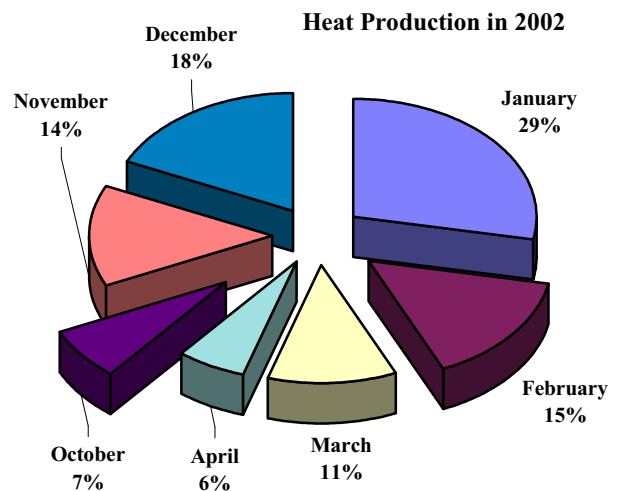
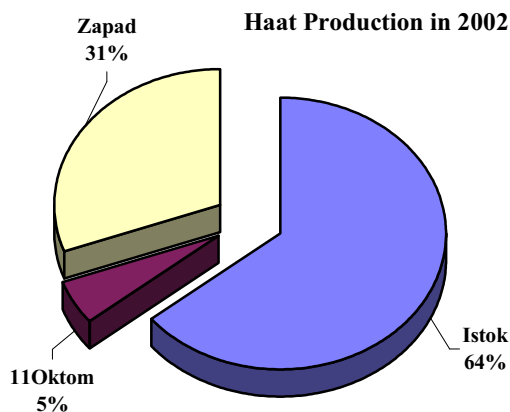
T10b. Delivered heat to the consumers in 2002.

	Istok (MWh)	Zapad (MWh)	11 Oktom. (MWh)	Total (MWh)
January	111409.5	50661.1	8607.7	170678.3
February	59156.7	27769.5	5421.6	92347.8
March	45201.0	21251.4	3323.1	69775.5
April	22873.7	11728.9	1962.9	36565.4
October	28871.2	13383.9	1959.0	44214.2
November	53452.1	25774.3	4839.7	84066.1
December	68317.0	35104.2	6419.6	109840.8
<b>TOTAL:</b>	<b>389281.1</b>	<b>185673.3</b>	<b>32533.7</b>	<b>607488.1</b>

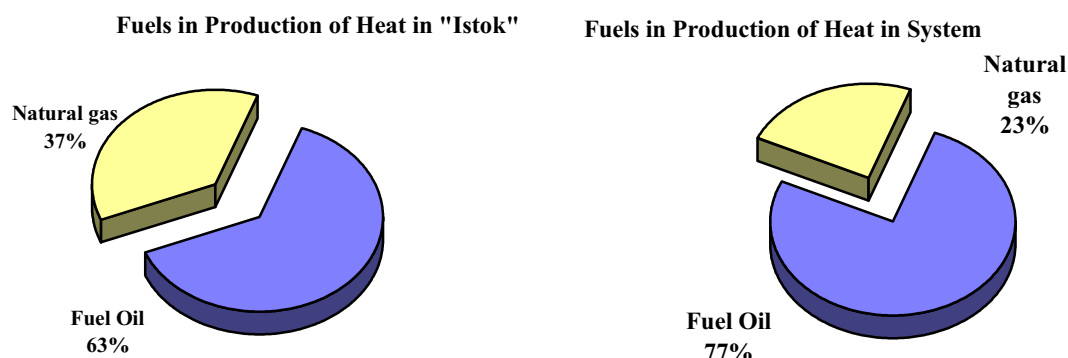
Heat Production in 2002 in MWh



The production of heat from the separate plants and in the months of the heating season in year 2002 are given with the following pies.



The previous pie shows that in the year 2002 the month of January dominates with its "production" of heat as compared to the rest of the heating months, most of all because of the registered low outside temperatures.



Throughout 2002, natural gas was used as well as fuel oil in the heating plant "Istok". The produced heat through combustion of gas, expressed in percentages, compared with the total production of heat in the plant "Istok" amounts to 37%. Compared to the total produced heat in the whole district heating system the percentage of heat produced with gas amounted to 23%.

In comparison with the previous year this percentage of heat produced with gas has not been changed relatively.

The previous graphics present the percentages of natural gas and fuel oil in the production of heat, only in plant "Istok" and in relation to the total produced heat in the district heating system.

### 3. FINANCIAL FLOWS IN 2000

Based upon the projection of the annual financial calculation of the company for the year 2002, basic financial flows are determined in the activity of Toplifikacija AD - Skopje. First the basic aggregate positions are determined of the financial flows of the company in the following table T.20.

*T.20. Basic financial aggregate positions in 2001/2002*

*amounts in (000) Denars*

ELEMENTS	Previous year I-XII- 2001	Current year I-XII- 2002	Column 3(%)	Index (3:2)
1	2	3	4	5
<b>1. Realized total revenues</b>	1.344.047	1.360.259	100,00	101,21
<b>2. Realized total expenditures</b>	1.251.545	1.264.796	92,98	101,06
<b>3. Gross profit (1-2)</b>	92.502	95.463	7,02	103,20
3.1 Fiscal obligations from the profit	7.576	4.934	0,36	65,13
3.2 Net profit (3-3.1)	84.926	90.529	6,66	106,60

In continuation of the report, certain positions of the financial flows of Toplifikacija for the year 2002, in comparison with the previous year are shown in tables.

*T.20.a. Review of balance positions in the financial flows of Toplifikacija AD Skopje in 2001/2002*

No	ELEMENTS	Amounts in (000) Denars		On column 3	02/03
		2001 g.	2002 g.	%	3:2
		2	3	4	5
a)	<b>Balance of revenue positions (1+2)</b>	<b>1.344.047</b>	<b>1.360.259</b>	<b>100.00</b>	<b>101.21</b>
1.	<b>Heat</b>	<b>1.232.560</b>	<b>1.218.227</b>	<b>89.56</b>	<b>98.84</b>
*	Residential space	689.359	750.331	55.16	108.84

*	Business space	543.201	467.896	34.40	86.14
<b>2.</b>	<b>Revenues of secondary activities</b>	<b>111.487</b>	<b>142.032</b>	<b>10.44</b>	<b>127.40</b>
<b>2.1</b>	<b>Revenues from financing (rates)</b>	<b>15.201</b>	<b>26.324</b>	<b>1.94</b>	<b>173.17</b>
*	Interests	10.839	13.586	1.00	125.34
*	Other	4.362	12.738	0.94	292.02
<b>2.2</b>	<b>Other activities</b>	<b>96.286</b>	<b>115.708</b>	<b>8.51</b>	<b>120.17</b>
*	Insurance (revenues from paid damages)	2.454	2.242	0.16	91.36
*	Own products and services in the investments for fixed assets in Toplifkacija	0	6.053	0.44	0
*	Revenues from investments in maintenance and expanding the network	68.836	37.290	2.74	54.17
*	Court taxes paid	105	3	0	2.86
*	Design and supervision	543	464	0.03	85.45
*	Sales of various and waste materijals	9.756	23.782	1.75	243.77
*	Sales of connections	5.520	5.421	0.40	98.21
*	<i>Other secondary activities</i>	<i>9.072</i>	<i>40.453</i>	<i>2.97</i>	<i>445.91</i>
⇒	Long terms reserves	0	12.000	0.88	0
⇒	Services for other companies	0	2.323	0.17	0
⇒	Services for Skopje Sever	2.060	18.100	1.33	878.64
⇒	Exchange the labor	1.229	2.251	0.17	193.16
⇒	Rent for basic assets	3.732	3.483	0.26	93.33
⇒	Extraordinary revenues	1.440	1.215	0.09	84.38
⇒	Other revenues	611	1.081	0.08	176.92
<b>b)</b>	<b>Balance of expenditure positions</b>	<b>1.251.545</b>	<b>1.264.796</b>	<b>100.00</b>	<b>101.06</b>
<b>1.</b>	<b>Basic expenditure for production</b>	<b>846.566</b>	<b>827.739</b>	<b>65.44</b>	<b>97.78</b>
1.1	Fuel for basic activity	769.683	747.274	59.08	97.09
*	fuel oil	572.366	557.399	44.07	97.39
*	Natural gas	197.317	189.875	15.01	96.23
1.2	Electrical power	48.472	48.501	3.83	100.06
1.3	Tehical prepered water	6.060	5.903	0.47	97.41
1.5	Gasoline, diesel/light oil and lubricants	2.313	2.712	0.21	117.25
1.6	Consumed raw and reproduction materijals, spare parts	20.038	23.349	1.85	116.52
<b>2.</b>	<b>Administrative expenditures</b>	<b>286.674</b>	<b>300.328</b>	<b>23.75</b>	<b>104.76</b>
2.1	Office materijals	2.682	2.899	0.23	108.09
2.2	Transportations and Postal services	5.616	6.774	0.54	120.62
2.3	Expenditures for public services	68.852	84.360	6.67	122.52
*	Rent for network	3.116	3.120	0.25	100.13
*	Court taxes	2.679	5.635	0.45	210.34
*	Custom taxes and traffic registrations	1.032	1.245	0.10	120.64
*	Bank services	3.727	3.184	0.25	85.43
*	Permission (lince) for basic activities	0	600	0.05	0
*	Various municipal services	6.434	10.965	0.87	170.42
*	Various taxes and contributions	8.584	16.331	1.29	190.25
*	Obligations for maintenance of the network, other's basic assets and privatization Agency	43.280	43.280	3.42	100.00
<b>2.4</b>	<b>Other costs of operation</b>	<b>11.518</b>	<b>26.205</b>	<b>2.07</b>	<b>227.51</b>
*	Sale of fuel oil (purchase value)	3.281	13.212	1.04	402.68
*	Spear parts and raw materials (purchase value)	3.134	7.125	0.56	227.35
*	Atachements (purchase value)	5.103	5.868	0.46	114.99
<b>2.5</b>	<b>Non-material costs</b>	<b>52.946</b>	<b>37.414</b>	<b>2.96</b>	<b>70.66</b>
*	Transport and nourishment of the workers	19.441	18.012	1.42	92.65
*	Intelectual services	333	442	0.03	132.73
*	Travel costs	832	934	0.07	112.26
*	Deducted demands	16.733	4.239	0.34	25.33
*	Vacation money	4.001	3.988	0.32	99.68

*	Jubilee awards and compensation money	450	518	0.04	115.11
*	Representations	1.090	1.302	0.10	119.45
*	Solidarity help	2.116	808	0.06	38.19
*	Other non-material costs	7.950	7.171	0.57	90.20
<b>2.6</b>	<b>Gross salaries</b>	<b>138.636</b>	<b>137.465</b>	<b>10.87</b>	<b>99.16</b>
	Net salaries and compensations	81.765	81.123	6.41	99.21
	Deductions and taxes	56.871	56.342	4.45	99.07
<b>2.7</b>	<b>Insurances</b>	<b>6.424</b>	<b>5.211</b>	<b>0.41</b>	<b>81.12</b>
<b>3.</b>	<b>Depreciation/Amortization</b>	<b>64.388</b>	<b>65.832</b>	<b>5.20</b>	<b>102.24</b>
<b>4</b>	<b>Finance expenses</b>	<b>32.679</b>	<b>47.648</b>	<b>3.77</b>	<b>145.81</b>
<b>5.</b>	<b>Maintenance of the system network</b>	<b>21.238</b>	<b>23.249</b>	<b>1.84</b>	<b>109.47</b>
*	Investment maintenance	12.110	9.019	0.71	74.48
*	current maintenance	9.128	14.230	1.13	155.89

### 3.1. BALANCE OF REVENUES

In the calendar year of 2002 the realization of the activity of Toplifikacija is carried out in conditions of a mainly identical monetary economic policy in Macedonia, realization of the production of heat of 700.919 MWh, heat consumption of our clients of 575,391 MW, as well as other achievements which are mainly in accordance with the Annual Business Plan of the company.

In context of such an economic situation, according to table 20/a, it is determined for the report year 2002 that the balance of revenue positions in the operations of Toplifikacija AD - Skopje is a total amount of: 1.360,259 mil.Denars, which is in accordance with the results from the activities of Toplifikacija.

Based upon such data an increase of the revenues of Toplifikacija AD has been registered amounting 1,21% for this period, which is due to, a larger consumption by the clients, as well as a higher realization in the other fields of activity of Toplifikacija.

The mass of the balance of the revenue elements in 2002, amounting 1.360.259 mil.Denars consists mostly of the achievements realized through the basic activity - delivery of heat - amounting to 1.218.227 mil.Denars or 89,56%, and is made up of the following positions:

- Residential space: 750.331 mil.Denars or 55,16%
- Business space: 467.896 mil. Denars or 34,40%

The achievement in the additional activities is determined for year 2002 at a value of 142.032 mil.Denars, or 10,44% participation in the mass of the total revenues of the company. These revenues are made up of the following revenue positions:

- Revenues from financing 26.324 mil.Denars
- Revenues from insurance of assets 2.242 mil.Denars
- Maintenance investments and expansion of the grid 37.290 mil.Denars
- Sales of waste materials 23.782 mil.Denars
- Other revenues 52.394 mil.Denars

The revenues from other activities in 2002 is amounting 111.487 mil.Denars, so the revenues from other activities are registering a increase of 27,40%.

The Balance of Expenditures of Toplifikacija AD in the year 2001 has been determined at 1.251.545 mil.Denars. In 2002 there is expenditure of 1.264.796mil.Denars which represents an increase of the total costs in the operation of the company in 2002 of 1.06 %.

By comparing the Revenues with the Expenditures from the Balance for 2002 in table 20/a, a positive financial result is determined in the operation of Toplifikacija AD - Skopje at the end of the year 2002 with a gross profit amounting to 95.463 mil.Denars. From this profit, the tax obligations from profit amount to 4.934 mil.Denars, while the net profit from the operation of Toplifikacija in 2002 is an amount of 90.529 mil. Denars

### 3.2. BALANCE OF EXPENDITURES

In order to realize the full scope of activities of Toplifikacija AD, at the end of the report period for the year 2002, according to table 20/a expenditures in the operation of Toplifikacija have been determined with a value of 1.264.796 mil.Denars. In comparison with the previous period this is an increase of the expenditures amounting 13.251 mil.Denars or 1,06%.

The increase of operation expenditures of Toplifikacija AD in this period is greatly due to the expansion of costs for fuel for our activities, as well as to the increase of the costs of certain energy resources necessary for our operation.

The expenditures in the Balance Sheet of Toplifikacija AD in 2002 are stated in tables 20/a and 20/b, here following :

Energy fuels in the activity of Toplifikacija AD according to table 20/b for the year 2002 amounts to (equivalent of fuel oil) 68.075 tons. The financial funds for this quantity of consumption of fuel an amount of 747.274 mil. Denars has been set aside, which is 59,08 % of the mass of total expenditures in the operation of Toplifikacija AD in the year 2002

According to the table the financial funds set aside for fuel consumption are registering an decrease of 2,91 %, which is due to a registered decrease of the pondered price for fuel from 11,161 Denars/ton to 10,977 Denars/ton.

**T.20.b. Realized consumption of basic energy sources in the activity in 2001/2002**

ELEMENTS	2001	2002	3:2
1	2	3	4
1. Fuel, in equivalent quant. fuel oil (t)	68.962	68.075	98.72
- amounts in (000) Den	769.683	747.274	97,09
- pondered price Den/t	11,165	10,977	98,32
a) Fuel oil (t)	52.370	52.263	99,80
- amounts in (000) Den.	572.366	557.399	97,39
- pondered price Den/t	10.929	10.665	97,59
b) Natural gas in m <sub>n</sub> <sup>3</sup>	19.969.356	19.030.830	95,30
- fuel oil equivalent (t)	16.592	15.812	95,30
- amounts in (000) Den.	197.317	189.875	96,23
- pondered price Den/t	11.892	12.008	100,98
2. Electric power in MWh	18.863	18.528	98,23
- amounts in (000) Den.	48.472	48.501	100,06
- pondered price Den/MWh	2,569	2,617	101,87

**T.21. Average annual net salary per employee in Toplifikacija AD 2002.**

Degree of education	Realized in 2001		Realized in 2002		Index	
	number of employees	average annual salary	number of employees	average annual salary	4:2	5:3
1	2	3	4	5	6	7
University - High education I	0	0	7	38.500	0	0
University - High education II	31	28.232	27	25.040	87,09	88,69
University - Higher education	14	21.168	7	22.740	50	107,42
Secondary Education	162	16.602	214	17.620	132,09	106,13
Highly Qualified	34	19.920	42	20.240	123,52	101,60
Qualified	110	17.880	47	16.680	42,72	93,28
Half-qualified	6	15.510	13	13.400	216,66	86,39
Non-qualified	13	12.114	8	11.650	61,53	96,16
<b>Total for all</b>	<b>370</b>	<b>18.210</b>	<b>365</b>	<b>18.580</b>	<b>98,64</b>	<b>102,03</b>

Only those employed and active in Toplifikacija during the whole period have been taken into account in the previous table.

**3.3. BALANCE OF CONDITIONS ON 31.12.2002**

**T.22. Conditions of the working assets of Toplifikacija on 31.12.2002**

POSITION	Current value of assets-10 <sup>3</sup> Den		Column 3	index
	2001	2002	%	3:2
1	2	3	4	5
<b>I. Assets</b>	<b>2.079.167</b>	<b>2.173.529</b>	<b>100,00</b>	<b>104.54</b>
<b>1. Permanent assets</b>	<b>1.229.907</b>	<b>1.299.920</b>	<b>59.81</b>	<b>105.69</b>

1.1. material assets	1.012.708	981.300	45.15	96.90
- buildings	366.040	365.124	16.80	99.75
- equipment	565.131	545.432	25.09	96.51
- material assets in preparation	81.537	70.744	3.25	86.75
1.3.Financial investments (long-term)	217.199	318.620	14.66	146.69
- Shares in linked units	150.617	243.327	11.20	161.55
- Investments in securities	66.582	75.293	3.46	113.08
- Other investments	0	0	0	0
<b>2. Working (Current) capital</b>	<b>834.605</b>	<b>873.609</b>	<b>40.19</b>	<b>104.67</b>
a) Stock	112.704	130.553	6.01	115.84
- raw materials	98.594	129.217	5.95	131.06
- trading goods	12.904	0	0	0
- advanced paym., deposits, caution money	1.206	1.336	0.06	110.78
b) Short-term claims	705.593	686.282	31.57	97.26
- claims from buyers	621.650	645.862	29.71	103.89
- claims from employees	976	1.003	0.05	102.77
- other claims	82.967	39.417	1.81	47.51
-cash and securities	16.308	56.774	2.61	348.14
<b>3. Payed costs in advance</b>	<b>14.655</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>II. Liabilities (Sources of funds)</b>	<b>2.079.167</b>	<b>2.173.529</b>	<b>100.00</b>	<b>104.54</b>
<b>1. Capital reserves</b>	<b>1.529.080</b>	<b>1.547.422</b>	<b>71.19</b>	<b>101.20</b>
1/1. Called up capital	1.394.100	1.394.100	64.14	100.00
1/2. Legal reserves	12.744	25.482	1.17	199.95
1/3. Accumulated profit	37.310	37.310	1.72	100.00
1/4.Profit from the financial year	84.926	90.530	4.17	106.60
<b>2. Long-term reserves for risks</b>	<b>24.000</b>	<b>12.000</b>	<b>0.55</b>	<b>50.00</b>
<b>3. Long-term and short-term liabilities</b>	<b>509.149</b>	<b>611.791</b>	<b>28.15</b>	<b>120.16</b>
- liabilities for investments	743	0	0	0,00
- liabilities for loans and credits	91.777	160.578	7.39	174.97
-liabilities of results participation	45.970	60.659	2.79	131.95
- liabilities for advanced payments, deposits and caution money	17.561	8.379	0.39	47.71
- liabilities to the suppliers	346.730	374.422	17.23	107.99
- liabilities for taxes and contributions	7.111	7.753	0.36	109.03
<b>4. Delayed payment of costs</b>	<b>16.938</b>	<b>2.316</b>	<b>0.11</b>	<b>13.67</b>

## 4. SHAREHOLDING

### 4.1. Privatization and transformation of capital

After a lengthy procedure Toplifikacija AD - Skopje was re-registered in a new transformed form on 05.04.1999 becoming a totally privatized company. The procedure was carried out in accordance with the procedure of "Privatization by all employees".

Only the above-ground sources, two heating plants and 3 boiler houses, were the subject of this transformation of Toplifikacija AD - Skopje. The grid remains the ownership of the state. The grid has, nevertheless, been given as a concession to Toplifikacija AD - Skopje for maintenance and operation. Any sort of further investment in the grid will be treated as an equity investment by Toplifikacija.

As the company was assessed at 45.000.000 DEM, and a total of 450.000 shares were issued. This was allocated in the following manner.

Pension Fund	Priority shares	21.343	4,74 %
Privatization Agency	Priority shares		
	Ordinary shares	111.892	24,86 %
Individuals (employees, pensioners from Toplifikacija,...)	Ordinary shares	316.765	70,39 %

- \* Priority shares are shares which do not give a management right but do bring the right to a dividend. Ordinary shares give both management and dividend rights.

Within the group "Individuals" the total initial number of shareholders was 414 persons. This number has somewhat grown with the transactions and transfer of shares now amounting to 560 "Individuals". The maximum number of shares initially held by one person was in average 741 shares. The maximum held by one person was 2203 shares. In the meantime there has been relatively active trading of these shares, yet never in any dominant or large numbers. It seems that people have found it a very sound investment for their saving instead of putting their money in a bank.

Trading with our shares started on 29.06.1999. That year there were 29 days of trade of our shares and a turnover of 231.580 DEM was achieved. The next year, in 2000, there were 76 days of trade of our shares with a turnover of 866.690 DEM.

In the year 2001, there were 89 days of trading with our shares with turnover of 48.592.033 Denars. In the year 2002, there were 124 days of trading with our shares with turnover of 46.897.199 Denars. (369 transactions).

## 5. EXPECTED CONDITIONS IN THE NEXT YEAR

### 5.1. FINANCES AND ORGANIZATION

In the past year we had continuously two unfavorable moments for the company from a financial aspect. The price of crude oil on the world market with an annual average was the highest for the past ten years. Additionally, the value of the Dollar was also at its highest level for the past ten years. This has caused a substantial increase of the price of fuels issued in our system.

In the year 2001 was made quotation of shares of toplifikacija AD, Skopje at the first market of Macedonian stock exchange for long term securities. In the days when it was done as a first company, the price of shares got maximum price, and of that moment the interest for our shares became larger. Our shares until today are the most traded shares on the stock exchange. Such trading has until now led to a substantial increase of the number of shareholders in Toplifikacija AD Skopje.

During the year 2001 Elektrostopanstvo na Makedonija /the Power Production Company/ entered the project for the construction of the CHP Plant Skopje, so that together with them we are engaged in the forming of a joint company which will lead the construction of the CHP Plant. The share of Toplifikacija AD in that company would be the same as in the previous planning, 20%.

In 2003 special attention will be given to the improvement of the organization of operation and the defining of procedures for the realization of each task in the company. A substantial improvement of the quality of work should be achieved through this and a reduction of the costs of operation. This should be done by implementing ISO standard.

### 5.2. TECHNICAL AND TECHNOLOGICAL ASPECTS

The activities of the technical and technological plan for 2003, as in the previous year, will be directed towards:

- revitalization of the basic technological elements;
- increase of the technological security of the system;
- modernization of the existing equipment

The activities in the previous period have finalized the revitalization of heat sources and the revitalization of the distributive grid.

A greater technological security of the system has been achieved through the realized activities, and this security must be maintained in the forthcoming period.

In the year 2003 the use of natural gas will continue with a gradual increase of the quantities used in the heating plant TO "Istok". Also it is expected to start partial exploitation of the boilers in heating plant "11 Oktomvri" on natural gas as fuel.

First, and permanent priority in the next year will also be given to the improvement of the characteristics of our heat sources in relation to the environment. In this sense, of crucial importance is the maintenance of the monitoring system, increase of consumption of natural gas and the use of high quality types of fuel oil.

In 2003, the start is expected of measurement of consumption of heat in all connected structures to the district heating system.

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