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## **ANNEX**

### **REGULATORY REPORT**

#### **Determination of Allowed Revenues for District Heating Termokos JSC Heating Season 2007/2008**

**Prishtina, 23 October 2007**

**REGULATORY REPORT**

**Determination of Allowed Revenues for District Heating Termokos  
Heating Season 2007/2008**

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**REGULATORY REPORT**

**Determination of Allowed Revenues for District Heating Termokos  
Heating Season 2007/2008**

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## 1. Background

According to the primary legislation – Articles 46, 47, 48 of the Law on Energy Regulator, Energy Regulatory Office (ERO) is responsible for setting the tariff methodology and approving the tariffs in the regulated energy sector; therein is a set of broad principles calling for reasonable, justifiable, and non-discriminatory principles under which energy enterprises should recover all justified costs including the reasonable return on its investment.

The district heating sector in Kosovo in transmission and distribution of heat is classified as natural monopoly, while no competition exists for the time being in heat production. Therefore the district heating tariff is subject to approval by ERO.

In line with its legal obligations and powers, Energy Regulatory Office has issued Temporary Instruction I\_05\_2007 “On the Principles of Calculation of Tariffs and Prices in District Heating Sector in Kosovo for the Heating Season 2007/2008”. The Instruction determines the procedures for submission and approval of tariffs, and sets the methodology for the purpose of calculation of tariffs – Rate of Return (RoR) – that is based on total allowed revenues, which consist of justified operational costs, depreciation and the allowed return on its Regulatory Asset Base.

Determination of allowed revenues for the heating season 2007/2008 has considered the following:

- Information provided by DHC Termokos in its application for tariffs and prices for the heating season 2007/2008;
- Information provided by DHC Termokos in its regulatory reporting – costs and revenues, assets / investment, as well as technical information, that has actually taken place in the season 2006/2007;
- Reconciliation of the current tariff (heating season 2006/2007) and the projected one (heating season 2007/2008); reconciliation is based on the difference between the projected and actual revenues of the previous heating season provided by regulatory reporting of DHC Termokos to ERO.

### Notes:

- DH Termokos has submitted to ERO its tariff application on 20 of September, 2007;
- ERO issued comments to DH Termokos tariff application on 25 of September, 2007, requesting corrections, additional explanation and information / documentation;
- On 2<sup>nd</sup> of October, Termokos re-submitted revised tariff applications consisting of corrections, additional explanations and information and respective breakdowns;
- Reconciliation is issued by ERO on 12 of September, 2006.

## 2. Principles and Formulation of Rate of Return (RoR) Tariff Methodology

For the purpose of calculation of the tariffs and prices including determination of allowed revenues for the heating season 2007/2008, the RoR methodology is applied.

### Principles

The most basic regulatory methodology of approving tariffs is so-called Rate of Return regulation (or cost plus regulation).

The basic principle is that utility tariff must be cost reflective (based), so that in one hand the customers should not pay excessively over incurred cost for their service, however on the other hand the utility should recover all reasonable and justifiable costs plus a reasonable rate of return for its capital investment. Total cost of service is usually defined to include all of utility operational expenses i.e. to recover cost of production, distribution and supply (operation and maintenance,

fuel, salaries, common costs, taxes, etc.) plus a reasonable return on its investments devoted to the service of the rate paying public.

Given that the RoR regulation do not provide incentives for enterprises to increase operating efficiency and cost saving and on contrary may give incentive to over-invest in capital equipment and also considering the obligation of Regulator to protect the customers, it applies that enterprises not only have to prove declared “justifiable costs” but also to demonstrate increasing operational and procurement efficiency. Such measures forms the basis for reconciliation of tariffs at the beginning of the new tariff season, in which the regulator rewards or penalise the enterprise for improving /failing the efficiency and cost control.

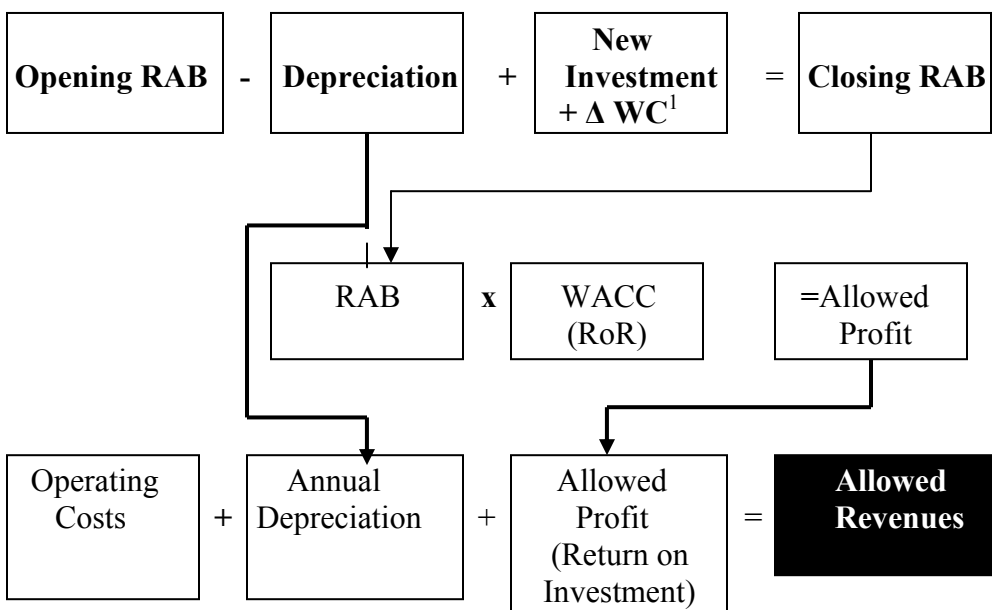
### Formulation

For the purpose of calculation of allowed revenues and for final tariff calculation, the RoR methodology is incorporated in the temporary Instruction I\_05\_2007, where is given in detail the formulation of the Rate of Return (RoR) methodology.

However for consistency reasons the formulation will be presented also in this paper.

Schematically the RoR methodology can be shown as a “building block” approach as below. The costs which enterprise is allowed to recover are built up from its operational costs, a depreciation representing ability to replace the enterprise assets, and the return on the Regulatory Asset Base (RAB), which in fact represents the allowed profit for the company.

**Figure 1: Schematic presentation of allowed revenues calculation**



<sup>1</sup>Δ WC: Change in Working Capital

Basic regulation formulas:

Allowed Revenues is calculated according to the formula:

$$R = OC + \text{Annual Depreciation} + (RoR \times \text{Closing RAB})$$

Where:

<b>R</b>	Total Allowed Revenues
<b>OC</b>	Total Operational Cost
<b>Annual Depreciation</b>	Depreciation for the respective year
<b>RoR</b>	Allowed Rate of Return (%) on Closing Regulatory Asset Base
<b>RAB</b>	Regulatory Asset Base
<b>(RoR x Closing RAB)</b>	Allowed Return or Allowed profit (value)

Allowed revenues represents the annual cost of company and consist of: i) operational costs, which are “justifiable”; ii) annual depreciation; and iii) allowed return on Regulatory Asset Base.

Operational Costs are comprised of fixed part and variable part, formulated as follows:

$$OC = OC_F + OC_V$$

Operational costs represents the total yearly forecasted justified costs, thus mainly including: i) cost of fuel and other consumables (electricity, water chemicals, spare parts), as well as losses of energy; ii) cost of system operation, repairs and maintenance; and iii) personnel costs and common costs. Allowed operational costs do not include: i) subsidies; ii) cost rejected by tax authorities, and costs of setting aside and releasing reserves; and iii) lease payments for items not kept in the bookkeeping, financial and other unjustified costs.

Regulatory Asset Base is calculated according to the formula:

$$RAB = \text{Book value of Assets (after cumulative depreciation)} + \text{New Investments} + \text{Working Capital}$$

Regulatory Asset Base (RAB) represents the enterprise assets considered to be used and useful in the public service, that includes: i) book value of assets or the initial book value of assets minus accumulated depreciation; ii) new investments when are planned and approved by the regulator; and iii) working capital sufficient for the company to carry out its activities.

ERO will take as Rate of Return a targeted WACC (Weighted Average Cost of Capital) for District Heating Companies in Kosovo. WACC (%) is the sum of the weighted average of the targeted cost of equity and the targeted cost of debt, and can be calculated according to the below formula:

$$WACC = [(D/V) * k_d] + [(E/V) * k_e]$$

Where:

<b>D/V</b>	Debt share of the total capital base
<b>E/V</b>	Equity share of the total capital base
<b>V</b>	Total capital base, which is the total of Equity and Debt
<b>k<sub>d</sub></b>	Cost of debt
<b>k<sub>e</sub></b>	Cost of equity

### 3. Determination of Allowed Revenues

For determining allowed revenues of DH Termokos JSC for the season 2007/2008, according to the adopted RoR methodology, ERO has undertaken the following:

- 1) Evaluation and determination of allowed operational costs;
- 2) Evaluation and determination of the depreciation;
- 3) Determination of Allowed Return on RAB (allowed profit for company), which includes:
  - a) Establishment of the RAB – evaluation and approval of company assets, verification and approval, planned investment, and working capital, and
  - b) Calculation of the allowed Rate of Return (RoR)/ WACC;
- 4) Reconciliation between the actual allowed revenues and the projected one for heating season 2007/2008.

In determining allowed revenues ERO has taken into consideration the following:

- Information provided by DHC Termokos in its application for tariffs and prices for the heating season 2007/2008 – information regarding estimated revenues from heat related services, forecasted total costs, forecasted assets which includes also planned investment and forecasted cash flow, as well as the forecasted heat production and supply;
- Information provided by DHC Termokos in its regulatory reporting – costs and revenues, assets / investment, as well as technical and customers information, that has actually taken place in the season 2006/2007;
- Information that ERO possesses from the price reviews and tariff settings in the past years.

Given that forecasted information is one of the main information considered, it should be reliable and realistic. Generally, in forecasting / planning the business should be applied a realistic approach, followed by comprehensive assessment of multiple factors affecting the business; i.e. assessment of the market and prospecting / expanding customer base, assessment of production / supply capabilities and financial capabilities of the company. Certainly the proper forecasting / planning have to be based on the past data that company has realized during a certain period.

It must be noted here, that although DH Termokos' tariff application was quite detailed and more complete and accurate than previous years, in some points are noted few inconsistencies, and incomplete and in-correct information. Despite ERO's intervention with comments in form of requests for correction and completion, still for few items we didn't get satisfactory explanation nor proper corrections, and some above mentioned information provided by Termokos, often was not complete, unrealistic and not supported by the appropriate documentation - not fully in line with the Instructions on regulatory reporting, and tariffs and prices (Instruction I\_04\_2007 and I\_05\_2007) – which has caused additional difficulties.

In fact, as far as forecasted information is concerned (stipulated in the Article 7.2 point “d”), Termokos has submitted to ERO, the spreadsheet consisting of forecasted incomes and costs supported with technical and customer data; forecasted balance sheet and the forecasted cash flow for the period covering full district heating season – 15 October 2007 – 14 October 2008, and the draft auditors report for statutory financial statements. Even after ERO's comments in form of requests for correction, completion and additional explanation, still some data and information remained incorrect and uncompleted, and DH Termokos didn't submit the final auditors' report. However ERO has put significant efforts and expertise in evaluating the forecasted information provided by Termokos. In depth analysis and the assessment of the presented information were conducted, followed by benchmarking comparison with the data from the previous seasons, in order to exactly determine allowed revenues for the upcoming heating season 2007/2008.

### 3.1 Evaluation and determination of allowed operational costs

Operational costs submitted by DH Termokos for the period 15 October 2007 – 14 October 2008, covering full district heating season 2007/2008, are structured in variable and fixed. However this division, in terms of allocation of certain items to the respective groups of costs, is not fully in compliance with advanced accounting principles and Kosovo Accounting Standards.

In this section are tabled forecasted costs as presented by DH Termokos and the allowed operational cost as approved by ERO (Table 1). The table will follow the analytical explanation of each determined main item consisting operational costs.

**Table 1: Costs presented by DH Termokos JSC and allowed by ERO for the period 15 October 2007 – 14 October 2008, that includes full heating season 2007/2008**

<b>Costs / Kostot</b>		<b>DH TERMOKOS JSC</b>	<b>Proposed by Propozuar nga DH Termokos</b>	<b>Allowed by ERO Lejuar nga ZrRE</b>
	<b>Variable costs:</b>	<b>Kostot variable</b>		
1	Heavy oil	Mazut	4,244,100	4,075,139
2	Transport	Transporti	0	0
3	Diesel	Naftë	30,000	30,000
4	Fuel	Benzine	1,000	1,000
5	Chemicals	Kemikaljet	30,000	30,000
6	Water	Uji	60,000	60,000
7	Electricity	Energia elektrike	385,000	385,000
8	Staff costs (dir. labor)	Kost. e personelit (puna direkte)	0	262,950
9	<b>total variable</b>		<b>4,750,100</b>	<b>4,844,089</b>
	<b>Fixed costs materials, services</b>	<b>Kostot fikse materialet/shërbimet</b>		
10	Materials, services	Materialet, shërbimet	10,000	10,000
11	Repairs	Riparimet	40,000	40,000
12	Maintenance	Mirëmbajtja	113,000	113,000
13	Cost of small items	Shp. Materiali imte	5,000	5,000
14	Cost of cleaning	Shp. Direkte pastrim	0	0
15	Cost of office supply	Materiali zyrtar	7,000	7,000
16	Fuels	Derivate	0	0
17	Licensing Fee	Pagesa për Licensë	17,000	13,500
18	<b>Sub-total</b>		<b>192,000</b>	<b>188,500</b>
	<b>Personnel costs</b>	<b>Shpenzimet e personelit</b>		
19	Salaries	Pagat mujore	432,000	265,680
20	Payment BoD	Pagat e BoD	30,000	30,000
21	Food	Ushqimi	90,000	55,350
22	Transport	Transporti	26,000	15,990
23	Bonus	Bonusi	50,000	30,750
24	Pension fund	Fondi per pension	50,000	30,750
25	Experience	Përvoja	35,000	21,530
26	<b>Sub-total</b>		<b>713,000</b>	<b>450,050</b>

	<b>Other costs</b>	<b>Shp.tjera operative</b>		
27	Auditing	Auditimi	20,000	20,000
28	Telephone	Telefoni	12,000	12,000
29	Representation	Reprecentacioni	3,000	3,000
30	Advertising	Reklama e shpallje	1,000	1,000
31	Financial costs	Shp. Fin.	5,000	5,000
32	Municipality costs	Shp. Komunale	17,000	15,000
33	Other administration	Shp. tjera administer.	5,000	5,000
34	Computer materials	Materiale për kompjut.	6,000	6,000
35	Small items	Material I imët	15,000	15,000
36	Court & Admin. fee	Taksa gjyqësore e admin	50,000	50,000
37	Training	Trainimet	5,000	5,000
38	Others	Tjera	3,000	3,000
39	<b>Sub-total</b>		<b>142,000</b>	<b>140,000</b>
40	<b>Total fixed costs</b>	<b>Totali i shpenzimeve fikse</b>	<b>1,047,000</b>	<b>778,550</b>
41	<b>Total Operational costs</b>	<b>Totali i shpenz. operative</b>	<b>5,797,100</b>	<b>5,622,639</b>
42	<b>Fixed costs</b>	<b>Kostot fikse</b>	<b>1,047,000</b>	<b>778,550</b>
43	<b>Variable costs</b>	<b>Kostot variabël</b>	<b>4,750,100</b>	<b>4,844,089</b>
44	<b>Subs. Repair &amp; bad debts</b>	<b>Subv. Ripar. dhe borxhe të këqija</b>	<b>432,000</b>	<b>432,000</b>
45	<b>Subsidy for fuel</b>	<b>Subvencion për mazut</b>	<b>1,100,000</b>	<b>1,100,000</b>
45	<b>Allowed operational costs (OC)</b>	<b>Kostot e lej. oper.</b>	<b>4,265,100</b>	<b>4,090,639</b>
46	<b>Fixed part of OC</b>	<b>(OCf) Pjesa Fikse</b>	<b>770,309</b>	<b>566,419</b>
47	<b>Variable part of OC</b>	<b>(OCv) Pjesa Variab.</b>	<b>3,494,791</b>	<b>3,524,220</b>

#### Technical and Customer data

Heating space	m2	Sip. ngroh.	Residential	Amvisri	632,348	632,348
Heating space	m2	Sip. ngroh.	Com.&inst.	Kom Inst.	392,267	392,267
Tot. heat. Sp.	m2	Sip. Ng. tot.			1,024,615	1,024,615
Staff		Personeli			150	150
Average salary	Euro	Paga mes.			240	240
Total annual sal					432,000	432,000
Product. of heat	MWh	Prodh. ngr.			141,000	132,244
Sales of heat	MWh	Shitjet e ngr.			109,762	109,762
Cons. of mazut	ton	Kons. i maz.			14,100	14,100
Price of mazut	Euro/t	Cmimi i maz.			301	290
Av. cost per ton	Euro/t	Kost.mes/ ton			Not presented	289.01695
Cost of mazut	Euro	Kost. e maz.			4,244,100	4,075,139

## Analytical explanation

The below presented analytical explanation for every group of costs and for main items constituting the particular group of costs, gives detailed explanation and justification for determined allowed costs.

### - Variable costs:

- Item No.1 – heavy oil (mazut):
  - Mazut cost proposed by DH Termokos (€4,244,100) is based on the forecasted consumption quantity 14,100 ton and the purchase price of 301 €/ton; the proposed purchase price is taken from last mazut delivery invoice, which consist of Platts (market) price, custom duty, the premium and VAT. ERO considers that forecasted purchase price should be based on the variations of market price and also by benchmarks of previous seasons and with other DH companies. It doesn't include VAT which is payable by the company but it is passed through cost to customers, and as such is reimbursable. It is to be noted that market (Platts) price has been showing constant increase that affects the increase of total purchase price of mazut. Based on the above ERO evaluates that **290 €/ton** is reasonable and justifiable forecast for the average **purchase price of mazut**.
  - Based on the heat demand by customers, ability of DH Termokos to meet the real customer demand (evaluated in the range from 75 – 85 % in studies regarding district heating sector in Kosovo – for this season ERO adopted 85%), taking into account distribution and generation losses, and based on data for fuel consumption, heat production and heat supplied to customers' substations for previous seasons particularly heating season 2006/07, ERO evaluates that 14,100 ton is the sufficient quantity of fuel (mazut).
  - Mazut cost allowed by ERO of € 4,075,139 is calculated on the basis of the accepted quantity 14,100 ton and the average unit cost of mazut of 289.01695 €/t.  
The calculation of mazut cost is done by taking into account the following:
    - Stock of fuel ending season 2006/07 was 563.54 tons
    - Average unit cost of fuel for season 2006/07 was 265.64 €/t
    - As for above, in order to reach forecasted consumption quantity of 14,100 ton, DH Termokos will have to purchase the quantity:  
 $14,100 - 563.54 = 13,536.46$  tons.
    - Cost of stock fuel is:  $563.54 \text{ t} * 265.64 \text{ €/t} = \mathbf{149,699 \text{ €}}$
    - Cost of fuel to be purchased in the season 2007/08 is:  
 $13,536 \text{ t} * 290 \text{ €/t} = \mathbf{\text{€ } 3,925,440}$
    - Overall cost of fuel for the season 2007/08 will be:  
 $149,699 \text{ €} + 3,925,440 \text{ €} = \mathbf{\text{€ } 4,075,139}$
  - Note: For covering the cost of mazut, it is foreseen that the Kosovo Consolidated Budget will provide a subsidy for mazut purchase in the value of € 1,100,000. The subsidized value is not accepted as the real cost for the company.
- Item No.2 – Transport, Item No. 3 – Diesel, and Item No.4 – Petrol fuel are accepted as proposed by DH Termokos.
- Item No 5 – Chemicals
  - DH Termokos proposed the cost of chemicals for water treatment in the value of €30,000;
  - By taking into account the distribution losses - water leakages, and the costs for chemicals of previous seasons, ERO evaluates that the proposed cost is acceptable.

- Item No.6 - Raw water
  - Termokos proposed the cost of raw water in the value of €60,000
  - Considering the actual water consumption of 65,125 m<sup>3</sup> reported for the last season 2006-2007, the forecasted consumption of 60,000 m<sup>3</sup> for season 2007-2008, and the price of raw water (volumetric tariff € 0.60 / m<sup>3</sup> and fixed charge €3), which gives the cost of water in the range of ca. € 36,000 - € 40,000. However ERO allows the **cost of raw water** to be € **60,000** as proposed by Termokos as to allow an additional cost for eventual higher consumption that may be caused from unpredicted breaks and water leakages.
  
- Item No 7 – **Cost of electricity** is accepted as proposed by Termokos in the value of **€385,000**
  
- Items No. 8 – Staff cost (direct labor)
  - In the first submission DH Termokos didn't presented staff cost – direct labor, but submitted total staff costs in the value of €713,000, allocating under fixed costs. Later on, after ERO's request, Termokos submitted Euro 435,000 for staff cost - direct labor and €278,000 for cost of staff in administration, sales and other departments (other than direct labor). This is quite strange division of the personnel cost with the ratio 61% of direct labor vs. 39% of staff cost other than direct labor, which is opposite to the ratio presented last seasons.
  - Since Termokos presented opposite ratio than previous season, and only bulk division of staff cost, the costs are proportionally calculated for items below, using the ratio of previous season (38.5% - direct labor vs. 61.5% - staff cost for other departments). Consequently to the above proportion, ERO has allocated the staff cost (direct labor) accordingly and calculated constituent items as follows:

Staff cost (dir. labor):

-salaries	166,320
-food	34,650
-transport	10,010
-bonus	19,250
-pens fund	19,250
-experience	13,470
Total	262,950

As for above ERO accepts the **staff cost – direct labor** in the value of **€ 262,950**.

Total variable costs by ERO accepted as justifiable are **€4,844,089** which is by €93,989 higher than the total variable cost proposed by DH Termokos (€4,750,100). This is because of different allocation of staff cost as mentioned above. Total variable costs accepted are also significantly higher, by € 1,034,112, than actual variable costs as per ERO decision for the heating season 2006/2007 (€3,809,977). This increase of variable costs from previous season is mainly because of the higher mazut consumption and cost that ERO has decided for the reasons described under the item No. 1 above, in order for Termokos to improve quality and reliability of heat service.

- Fixed Costs

- Cost group – Materials and Services:

- Item No.10 – Materials and Services (spare parts), is accepted as proposed by DH Termokos in the value of €10,000, since it represent very slight decrease of €1,000 from what was proposed and accepted in the last tariff application (season 2006-2007).
- Item No. 11 – Repairs, and Item No. 12 – Maintenance are accepted as proposed by Termokos in the value of €40,000 and €113,000 respectively. Although these proposed costs are quite higher than actual ones reported for the season 2006/07, ERO has accepted these costs in order for Termokos to improve its customer service by properly maintain the district heating system and in time and competently eliminate eventual breaks.
- Items No. 13 – 16 are accepted as proposed by Termokos.
- Item No.17: Licensing fee is proposed by Termokos at the level of € 17,000, which doesn't correspond to the forecasted heat generation presented by them. Based on our calculation of the heat generation (132,244 MWh) and the schedule of fees adopted and issued by ERO Board, it is accepted **cost for the licensing fee** in the value of ca. **€13,500**.

- Cost group – Personnel Costs (other than direct labor)

- Item No. 19 – Salaries
  - The cost for salaries of € 265,680 is calculated according to the proportion described under the Item No. 8.  
Note: Total salaries of the company (direct labour and other dept.) are € 432,000, which matches with calculation for staff number 150 and the average monthly salary of €240.  
 Although it is noted slight increase of the number of employees (from 147 in the last season to 150 forecasted for 2007/08), and since the costs of salaries approximately matches with actual cost of salaries reported for the season 2006/07, ERO has decided to accept the total cost for salaries as proposed by DH Termokos in the value of € 432,000, but with different allocation (salaries - direct labour: €166,320, and salaries – other dept.: €265,680).
- Item No.20 Payment (remuneration) for members of the Board of Termokos, is accepted as proposed by the company in the value of € 30,000
- Item No. 21 - cost for food
  - Cost for food, calculated according to the above mentioned proportion is €55,350;  
Note: Cost of food for the total number of company employees is €90,000, which is calculated for 150 employees receiving €50/month.
  - Even if it is noted the very slight increase from last year (from €81,000 to €90,000), ERO has decided to accept the cost for food as presented (proposed) by DH Termokos, but with different allocation: cost of food – direct labour: €34,650, and cost of food – other dept.: €55,350.
- Item No. 22 transport is accepted as proposed by Termokos, but with allocation based on the above described proportion: transport – direct labor: €10,010, and transport – other depts.: €15,990
- No. 23 - bonus is accepted as proposed by Termokos, but with different allocation: bonus – direct labor: €19,250 and bonus – other dept.: €30,750.
- Item No. 24 – Pension fund (contribution payable by the company)

- The cost for pension contribution calculated according to the above mentioned proportion is €30,750;
  - Note: Total company cost of pension contribution is €50,000, which sum is in accordance to the regulation on pension contribution, stating that 5% of the salary is payable by the company; the value of the cost for pension contribution calculated as 5% of total salaries matches with the cost proposed by the company, and as such is acceptable by ERO.
- Item No. 25 Experience is accepted as proposed by Termokos, but with different allocation based on the above mentioned proportion: experience – direct labor: €13,470, and experience – other depts.: €21,530.

- Cost group – Other fixed costs

- Group Other Fix Costs consisting of Items No. 27 – No. 38 are accepted as proposed by Termokos, with exception of Item No. 32: Municipality Costs. Municipality costs are decreased by €2,000 - from proposed € 17,000 to accepted € 15,000, because last season are proposed and accepted €15,000 for municipality costs and DH Termokos didn't presented any evidence, and also ERO isn't aware of, any increase respective prices of components (property tax, waste and waste water services etc.) constituting so-called municipality costs. As for above, by ERO accepted costs under the cost group “other fixed costs” totals to € 140,000.  
Note: In addition to usual components listed under cost group “other costs”, this season DH Temokos has added also the auditing costs and Court & Admin Fee. These are accepted as proposed with the remark that these costs will be particularly verified during next regulatory reporting.

**Total fixed costs** accepted by ERO as justifiable is at the level of **€778,550**, which is significantly less than proposed by Termokos (€ 1,047,000). This difference is mainly because of the different allocation of personnel costs as described above in the paragraphs under cost group “personnel costs”. Such accepted fixed costs are almost the same as actual fixed cost reported by Termokos and decided on by ERO for the heating season 2006/2007 (€ 778,260). This value allowed by ERO is meant to cover all reasonable fixed cost of the company with assumption that DH Termokos would increase its customer service by regularly maintaining the system, preventing the malfunctions of the system, and timely reacting in repairing eventual breaks. The allowed fixed operational costs are also meant to cover the cost related to the increased efforts for improving overall management of the company, improvement of financial accounting system, establishment management information and reporting system, and most important to increase the payment collection as well as to detect and prevent illegal take of heat.

- Allowed operational costs

Allowed operational cost consists of the sum of the fixed and variable costs and does not include the value of the subsidies.

DH Termokos presented the **subsidy for fuel (mazut)** in the value of **€1,100,000**; this value presents a certain portion of the total cost of mazut, which Kosovo Consolidated Budget plans to donate. In addition DH Termokos presented the value of **subsidy for investment** – mainly repair works in the value of **€300,000** and subsidy for bad debts in the value of **€132,000**.

**Total Subsidies** in the value of **€1,532,000** are accepted by ERO as presented by DH Termokos.

The subsidized value is not accepted as real cost borne by the company and as such cannot be included in the allowed operational costs.

The allowed operational costs are calculated according to following formula:

$$\text{OC} = \text{Variable Costs} + \text{Fixed Costs} - \text{Subsidies}$$

From the formula we calculate that:

**Allowed Operational Costs are in the value of €4,090,639.**

This value represents by ERO allowed total operational costs, which sum less by €174,461 than proposed by DH Termokos (€4,265,100). Notwithstanding that, allowed operational costs are still much higher, by €1,235,249 than actual operational costs as per ERO's decision for the heating season 2006/2007 (€2,855,390). This increase of allowed operational costs from previous season is mainly because of the higher forecasted consumption and cost of fuel than in the last season, and less subsidies forecasted for this season (in the season 2006/2007 the actual value of subsidy for fuel was €1,732,867 plus subsidy for investment in the value of ca. 500,000, thus totaling ca 2,233,000; while for this season is planned to be € 1,532,000).

Division of total allowed operational cost is as presented below:

**Fixed part of allowed operational costs (OCf) is €566,419; and  
Variable part of allowed operational costs (OCv) is €3,524,220.**

In addition to above presented operational costs, DH Termokos presented, as the expense, also the **provision for bad debts** in the high value of € **1,324,000**, supported with insufficient explanation saying that by the decision of the company Board uncollected invoices due for the certain period should be deducted from accounts receivable and presented as provision for bad debts.

In relation to that, ERO has consulted regulation 2002/3 on the income tax which considers and accepts bad debts provision as expense if the following conditions are fulfilled:

- a) if the sum corresponding the bad debts provision is included in the revenues,
- b) If such debts are written off from the bookkeeping as void, and
- c) If exists adequate evidence of essential unsuccessful efforts for collection of debts (evidence from the courts – filed law suit etc.)

Consequently to the above we have requested from Termokos evidence about the fulfillment of the above terms. Upon our request they have provided the following:

- Law suit filed with courts in 2006 and 2007 in total value of € 354,005:
  - i) 57 law suits in 2006 in the value of € 84,700
  - ii) 600 law suits in 2007 in the value of € 269,305
- Claims filed with KTA against the SOE's in liquidation totaling €314,042

So, the total amount for which the legal action is undertakes is € 668,047.

ERO wants again to proclaim the basic principle of the tariff methodology and of the price regulation, by which bad debts aren't considered as justified costs. However, considering specific circumstances in terms of difficulties for payment / debt collection and inefficient legal enforcement system, ERO expresses willingness to accept the certain reasonable portion of bad debts provision estimated as follows:

- Total amount for which legal action is undertaken is € 668,047
- Assuming that 50% of above stated sum will not be executed (paid back to Termokos), ERO recognizes and accept the sum equaling to  $50\% * 668,047 = €334,024$

By this ERO accepts the **Bad Debts Provision (BDP)** in the amount of € 334,024, emphasizing that this isn't quite in line with the basic regulation principle, and shouldn't be the precedent for future price reviews and for other DH companies. For the purpose of inclusion in the Allowed Revenues the item provision of bad debts will be added to Allowed Operational Costs.

### **3.2 Evaluation and Determination of Depreciation**

DHC TERMOKOS submitted in its tariff application a forecasted annual depreciation value of €863,000 for the period 15 October 2007 – 14 October 2008. As no detailed calculation of the depreciation is included, ERO has to define the annual depreciation based on below assumptions. In the meantime we urge DHC TERMOKOS to provide us as soon as possible with a detailed calculation of annual and cumulative depreciation.

Based on the previous experience, the depreciation is calculated on the basis of the UNMIK Regulation 2002/3 that follows three categories of depreciation:

- Buildings and other permanent structure (5%).
- Plant and machinery, heavy transport vehicles, earth moving equipment, other heavy vehicles, and all other tangible assets (15%).
- Equipment, automobiles and light trucks, computers, peripherals and other data processing equipment, office furniture and equipment, instruments, sundries and other accessories (20%).

ERO evaluated the annual depreciation for the district heating season 2006-2007 and it was in the final reconciliation defined at €672,146. We assume for the district heating season 2007-2008 that there will be not any disposals of investments; and further that not any investment within Closing RAB at the end of district heating season 2006-2007 was already fully depreciated. By this we can take over the same depreciation amount for existing investments for district heating season 2007-2008 as the one for district heating season 2006-2007, which is €672,146. We will add 15% depreciation on the new investments of €528,706 from the district heating season 2006-2007, which is equal to €79,306; and we will add the depreciation on the planned new investments for the district heating season 2007-2008, reported at the value of €455,500. Based on the information from TERMOKOS those new investments will be financed by own means without any donations, and mainly fall into the category of Plant and Machinery, which has an annual depreciation rate of 15% or an equivalent amount of €455,500 \* 15% = €68,325. In total we will get an **annual depreciation for the district heating season 2007-2008** of:

$$€672,146 + €79,306 + €68,325 = \mathbf{€819,777}$$

### **3.3 Determination of Allowed Return on RAB (Allowed Profit)**

As mentioned before, the calculation / determination of allowed return on Closing RAB involves:

- ➔ establishment of Closing Regulatory Asset Base (RAB); and
- ➔ calculation of the allowed Rate of Return (RoR), which will be determined at WACC level.

Those two above important elements will be calculated below in detail.

#### **3.3.1 Establishment of Closing Regulatory Asset Base (RAB)**

Establishment of Closing RAB is the main factor for calculating the company's allowed profit. Closing RAB consists of the book value of company's Fixed Assets, planned New Investments, and Working Capital.

### **3.3.1.1 Determination of the value of existing Fixed Assets (after cumulative depreciation)**

DHC TERMOKOS presented to ERO the forecasted value of the Fix Assets after accumulated depreciation in the forecasted Balance Sheet 2007 – 2008, amounting €8,541,957, which value reflects the value of assets as stated on the Balance Sheet as per 31 December 2006 of the auditors. Therefore ERO decides to take the book value of Fixed Assets after accumulated depreciation as in the reconciliation for the district heating season 2006-2007 allowed by ERO, which was €8,458,703. ERO will add the new investments as mentioned in the reconciliation for the district heating season 2006-2007, which is €528,706, by which the total Net Fixed Assets at the end of 2006 - 2007 is defined at €8,987,409. From this amount ERO will deduct the annual depreciation for the district heating season 2006-2007, which is €672,146; and 15% of the €528,706 new investments amounting 79,306; or in total €751,452. Consequently, the final book value of Fixed Assets (after cumulated depreciation), is defined at €8,987,409 - €751,452 = **€8,235,957** for the district heating season 2007-2008.

### **3.3.1.2 Determination of New Investments**

DHC TERMOKOS presented in its forecasted Cash Flow and Balance Sheet for the period 15 October 2007 to 14 October 2008, new planned investments at the value of €755,500. Upon our request Termokos provided explanation where are listed investment projects with respective investment values, but without other details such as specification of the sources of financing - in self-financed and donation, as well as not provided financial and technical feasibility of listed investment projects etc. However DH Termokos, in forecasted statement mentioned that will receive €300,000 from donations to execute those investments. Consequently ERO can only take into consideration €755,500 minus €300,000, which is **€455,500** as **new investment** to be included in the Regulatory Asset Base (RAB) for the district heating season 2006-2007.

### **3.3.1.3 Determination of the Working Capital**

DHC TERMOKOS didn't presented calculated Working Capital, but presented to ERO the forecasted Balance Sheet for the period 15 October 2007 – 14 October 2008; ERO has analyzed the Current Assets and Current Liabilities as stated therein and calculated the working capital as tabled below:

#### **Forecasted Balance Sheet**

In €

<u>Current Assets</u>	
Cash and cash equivalents	103,301
Trade and other Receivables	3,007,515
Inventories	978,638
Prepayments	1,998,476
-----	
<b>Total Current Assets</b>	<b>6,087,930</b>
-----	

In €	
<b>Current Liabilities</b>	
Trade and other liabilities	3,600,282
Income Tax payable	1,805,000
<b>Total Current Liabilities</b>	<b>5,405,282</b>
<b>Working Capital</b>	
	<b>682,648</b>

As said above Working Capital was not calculated and reported in tariff application of DHC TERMOKOS and based on the presented forecasted Balance Sheet the **Working Capital** amounts to **€682,648**. This amount will be taken into account by ERO as target Working Capital for the district heating season 2007-2008, for the purpose of calculation of Closing Regulatory Asset Base (RAB).

Closing Regulatory Asset Base (RAB) is calculated as follows:

**Closing RAB = Book value of Assets (after cumulative depreciation) + New Investments + Working Capital, and this results, as mentioned in Table 2, in a value of € 9,347,105.**

In Table 2 below we summarize the components of Closing RAB and its respective value.

**Table 2: CLOSING RAB DHC TERMOKOS and its components for district heating season 2007 - 2008**

		In €	
Closing Regulatory Asset Base DHC TERMOKOS for DH season 2007 - 2008		Proposed by Propozuar nga DHC TERMOKOS	Allowed by ERO Lejuar nga ZRrE
3.3.1.1	Book value existing Fixed Assets (after cumulative depreciation)	8,541,957	8,235,957
3.3.1.2	New investments	755,500	455,500
3.3.1.3	Working Capital	682,648	682,648
	<b>Regulatory Asset Base</b>	<b>9,980,105</b>	<b>9,374,105</b>

### **3.3.2 Calculation of a targeted Allowed Rate of Return on Regulatory Asset Base for all District Heating Companies in Kosovo**

The objective of a reasonable Rate of Return (RoR) on the Regulatory Asset Base (RAB), is to provide a guarantee for the district heating enterprises to continue to invest in their Assets, both in order to replace them and to expand them.

A reasonable RoR is considered to be the rate of the ‘Weighted Average Cost of Capital’ (WACC), which is calculated on the components of the capital base, taking into account the weights compromised of the amounts of these capital components. In other words, WACC is the sum of the Weighted Average of the cost of Equity and the cost of Debt.

For the cost of Equity, ERO is following an internationally acclaimed methodology the so-called “Capital Asset Pricing Model” (CAPM). The CAPM expresses the expected cost of Equity as the risk-free ( $r_f$ ) rate plus an equity risk premium (ERP). We can define ERP as the difference between the equity market risk premium – i.e. the return expected on the market well diversified portfolio – and the risk-free rate of return, and is expressed in the below formula:

$$\text{ERP} = (r_m - r_f)$$

The rate of ERP depends on the risk of investing in the particular country’s market.

Value of pre-tax WACC can be calculated according to the following formula:

$$\text{WACC}_{\text{pre-tax}} = [(D/V) * k_d] + [(E/V) * k_e]$$

where:

<b>D/V</b>	Debt share of the total capital base
<b>E/V</b>	Equity share of the total capital base
<b>V</b>	Total capital base, which is the total of Equity and Debt
<b>k<sub>d</sub></b>	Cost of Debt
<b>k<sub>e</sub></b>	Cost of Equity

**The cost of Debt (k<sub>d</sub>)** is a contractual commitment and is the rate the enterprise will pay on future debt issues and is expressed in the following formula:

$$k_d = r_f + d_{rp}$$

where:

<b>r<sub>f</sub></b>	Risk free rate
<b>d<sub>rp</sub></b>	Debt risk premium

**The cost of Equity (k<sub>e</sub>)** can be calculated as:

$$k_e = r_f + \beta_e * (r_m - r_f)$$

where:

$r_f$  Risk free rate and it is derived from an estimate from the return available on Government Bonds and conventional gilts

$\beta_e$  “Beta”: risk-measure for the specific company

$(r_m - r_f)$  Equity market risk premium minus the risk-free rate of return

“The risk premium” of any Asset is further determined by its “beta” and by the expected market risk premium that investors will demand from the market as a whole. The “beta” factor measures the volatility of an individual company’s return relative to the stock market as a whole.

Below we estimate the targeted cost of Debt and the targeted cost of Equity for the district heating enterprises in Kosovo in order to come to a targeted pre-tax WACC for the district heating season 2006-2007 and following.

### **3.3.2.1 Cost of Debt**

Historic outcomes of Debt share of the total capital base – also called gearing – for DHC TERMOKOS and DHC GJAKOVA during District Heating season 2005-2006 were based on their respective received financial data at that time and defined at 50% and 73% respectively.

For this district heating season and the following ones, ERO decides to have a targeted D/V ratio between 50% and 73% and puts it at 60/100 (60% debt and 40% equity). This 60% gearing should be used in the estimation of a commercial pre-tax WACC for the district heating enterprises in Kosovo for district heating season 2006 – 2007 and following.

Return on Debt is expressed in the formula below:

$$k_d = r_f + d_{rp}$$

where:

$r_f$  Risk free rate

$d_{rp}$  Debt risk premium

Regarding the Risk free debt rate ( $d_f$ ) we assume that if the Government of Kosovo would issue bonds, it would attract initially at least a credit rating below investment grade. We assume that Kosovo would be rated somewhat below Ukraine and Turkey, which both have a credit rating of BB-. It therefore seems reasonable to assume **a real risk-free rate on debt of 5.5% for Kosovo**, which lies between the average yield for Ukraine and Turkey and that of Argentina.

Of a sample of EU and Australian regulators, Debt risk premium ( $d_{rp}$ ) is estimated in the range between 0.84 and 1.75%. Taking into consideration the high risk of non-payment associated with the traditionally poor commercial performance of district heating enterprises in Kosovo, we estimate  $d_{rp}$  for Kosovo above this range and we suggest putting it **at 2.5%**.

The cost of debt can then be calculated as mentioned below:

$$k_d = 5.5\% + 2.5\% = 8\%$$

### 3.3.2.2 Cost of Equity

The cost of Equity is expressed in the formula below:

$$k_e = r_f + \beta_e * (r_m - r_f)$$

where:

$$ERP = (r_m - r_f)$$

Recent international regulatory decisions estimate the Equity risk premium in a range from 3.5 to 7%, and a median of 5.0%. We propose for Kosovo to use **ERP equal to 6%**.

The **average asset beta** for EU for electricity network and integrated utilities is 0.42 compared to 0.54 - 0.63 for stand-alone generation and supply utilities in the EU and USA. Given the small size of the Kosovan district heating industry, it seems reasonable to assume that demand growth – which is the main driver of revenue growth – will be more volatile relative to GDP growth – which is the main driver of stock market growth – than in more developed and larger countries. The addition of a single major customer will mean a large increase in district heating demand relative to previous levels, while the impact on GDP may be much less. In order to take account of the potentially more volatile nature of the revenues of district heating enterprises relative to GDP growth, we therefore assume a common equity above the average of EU regulatory decisions and we consider that a reasonable  $\beta_e$  for district heating companies in Kosovo is as mentioned below:

$$\beta_e = 1$$

Post-tax cost of equity is then as follows:

$$k_{e \text{ post tax}} = 5.5\% + (1 * 6\%) = 11.5\%$$

Pre-tax cost of equity is multiplying the above figure of the post-tax cost of equity with the tax wedge, which formula is mentioned below:

$$\text{Tax wedge} = 1/(1-t)$$

where:

**t** Tax rate on corporate profit

The corporate tax (t) in Kosovo is 20% and the tax wedge is

$$1/(1-0.20) = 1.25$$

Pre-tax cost of equity is:

$$k_{e \text{ pre-tax}} = 11.5\% * 1.25 = 14.4\%$$

As consequence of the above calculations we can calculate the pre-tax WACC – rounded to one decimal place – as mentioned below:

$$WACC_{\text{pre-tax}} = [8\% * 0.6] + [14.4\% * 0.4] = 10.6\%$$

### 3.3.3 Calculation of the Allowed Return on Closing RAB (Allowed Profit) for DHC TERMOKOS

Based on the calculated  $WACC_{pre-tax}$  of 10.6% as mentioned in 3.3.2, we are now able to calculate the Allowed Return or Allowed Profit for DH TERMOKOS, which according to the below formula:

$$(RoR \times \text{Closing RAB})$$

is equal to  $€9,374,105 \times 10.6\% = €993,655$ .

**Table 3: Allowed Return (Allowed Profit) on CLOSING RAB for DHC TERMOKOS for district heating season 2007 - 2008**

Allowed Return (Allowed Profit) on Closing RAB for DHC TERMOKOS for DH season 2007 - 2008		Proposed by Propozuar nga DHC TERMOKOS	In €
			Allowed by ERO Lejuar nga ZRRÉ
<b>CLOSING RAB</b>	Closing Regulatory Asset Base	<b>9,980,105</b>	<b>9,347,105</b>
<b>RoR</b>	Rate of Return at WACC level	<b>10.6 %</b>	<b>10.6 %</b>
	<b>Allowed Return or Allowed Profit</b>	<b>1,057,891</b>	<b>993,655</b>

### 3.4 Calculation of Allowed Revenues before Reconciliation

Total Allowed Revenues before Reconciliation are calculated according to the formula:

$R_{bRec} = (OC + BDP) + \text{Annual Depreciation} + \text{Allowed Return on Closing RAB}$ , and is equal to € 6,238,095, as mentioned in detail in Table 4.

**Table 4: Allowed Revenues before Reconciliation for district heating season 2007-08**

In €

Allowed Revenues before Reconciliation DHC TERMOKOS for DH season 2007 – 2008		Proposed by DHC TERMOKOS	Allowed by ERO
<b>OC</b>	<b>Allowed operational costs</b>	<b>4,265,100</b>	<b>4,090,639</b>
<b>BDP</b>	<b>Bad Debt Provision</b>	<b>1,324,000</b>	<b>334,024</b>
	<b>Depreciation</b>	<b>863,000</b>	<b>819,777</b>
	<b>Allowed Return on Closing RAB</b>	<b>1,057,891</b>	<b>993,655</b>
<b>R<sub>bRec</sub></b>	<b>Allowed Revenues before Reconciliation</b>	<b>7,509,991</b>	<b>6,238,095</b>

### 3.5 Reconciliation of Allowed Revenues for district heating season 2006 - 2007

Based on the by ERO calculated reconciliation as mentioned in the “Assessment of Regulatory Reporting of District Heating TERMOKOS JSC - Comparison of Actual Data vs. Planned for the Heating Season 2006/2007” of September 2007, which is the by ERO accepted differences between the actual and planned Allowed Revenues of DHC TERMOKOS for district heating season 2006-2007, **€721,780 will be deducted** from the Allowed Revenues for the district heating season 2007/08. However we have to deduct the amount regarding the reconciliation of DH season 2004/05, which is spread over five years and is one fifth of €1,407,867 or €281,573 without interest. We will charge the annual interest of 3.9%, which is the equivalent of interest earned on a one year deposit account in Kosovo, by which **the amount to be deducted regarding the reconciliation 2004-2005 will be: €281,573 \* 1.039= €292,554**. This is then the third one fifth of the reconciliation 2004 -2005 including interest, that will be deducted from the allowed revenues for district heating season 2006 - 2007 for DHC TERMOKOS.

**3.6 Final Calculation of Allowed Revenues for district heating season 2007-2008 including reconciliation of district heating season 2006-2007 and 1/5 of reconciliation of district heating season 2004-2005**

Allowed Revenues are calculated according to the following formula:

$$R = R_{bRec} +/- \text{Value of reconciliation}$$

So finally, Allowed Revenues for DHC TERMOKOS for the heating season 2007-2008 is determined on €5,223,761, as summarized in Table 5.

**Table 5: Allowed Revenues for DHC TERMOKOS for heating season 2007-2008**  
In €

Allowed Revenues – DHC TERMOKOS for DH season 2007 – 2008		Allowed by ERO
<b>R<sub>bRec</sub></b>	<b>Allowed Revenues before Reconciliation DH season 2006-2007</b>	<b>6,238,095</b>
	<b>Reconciliation DH season 2006-2007</b>	<b>(721,780)</b>
	<b>Reconciliation DH season 2004-2005</b>	<b>(292,554)</b>
<b>R</b>	<b>Allowed Revenues</b>	<b>5,223,761</b>

In line with the proportion of fixed and variable operational costs before subsidies – which is – the percentage of the **fixed part is 13.85%** and the percentage of the **variable part 86.15%**. For the district heating season 2007 - 2008 the split in allowed revenues is therefore as mentioned below:

**Fixed part of Allowed Revenues (R<sub>F</sub>)                    €723,319; and**

**Variable part of Allowed Revenues (R<sub>v</sub>)        €4,500,442.**



