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ZYRA E RREGULLATORIT PËR ENERGJI
REGULATORNI URED ZA ENERGIJU
ENERGY REGULATORY OFFICE



REGULATORY REPORT
Determination of Maximum Allowed Revenues for District Heating Termokos JSC.
Heating Season 2022/2023

Pristina, September 2022

Table of Contents

1.	Introduction.....	3
2.	Principles and Formulation of Tariff Methodology.....	4
3.	Determination of Allowed Revenues.....	6
3.1	Evaluation and determination of allowed operational costs.....	7
3.2	Determination of the Regulatory Asset Base (RAB).....	15
3.2.1	Determination of starting Regulatory Asset Base (RABnst.).....	16
3.2.2	Determination of allowed new investments.....	15
3.2.3	Determination of Working Capital.....	20
3.2.4	Annual Depreciation of Assets- realized in 2020/21 ('n-1') season.....	20
3.2.5	Disposals.....	20
3.3	Evaluation and Determination of Annual Depreciation for season 2021/2022.....	23
3.4	Determination of Allowed Return on RAB (Allowed profit).....	23
3.5	Determination of Network Losses Cost.....	27
3.6	Adjustment.....	27
3.7	Calculation of Allowed Revenues - Summary.....	28
4.	Thermal Energy Balance.....	28

Figures

Figure 1: Allowed Revenues Calculation Scheme.....	5
Figure 2: Schematic presentation of operational costs proposed by DH Termokos and allowed by ERO for the heating season 2021/2022.....	8

Tables

Table 1: Costs presented by DH Termokos JSC, and those allowed by ERO (In €).....	8
Table 2: RAB and its components - DH TERMOKOS 2021/2022 heating season	21
Table 3: RABf and its components - DH TERMOKOS 2021/2022 heating season	21
Table 4: Asset Categorization (RAB) and weighted average depreciation rate	20
Table 5: Allowed Return (Allowed Profit) in RABf for the 2021/2022 heating season	25
Table 6: Allowed Revenues for DH Termokos 2021/2022 heating season	27
Table 7: Summary of Thermal Energy Balance	27

1. Introduction

According to primary legislation- Articles 47 and 48 of the Law on Energy Regulator, Energy Regulatory Office (ERO) is responsible for determination of tariff methodology and approval of tariffs in the regulated energy sector; therein is a set of broad principles such as justification and non-discriminatory principles under which energy enterprises should recover all justified costs including the reasonable return on their investments. Also, Articles 18 and 19 of the Law on Thermal Energy determine that the supplier charged with public service obligation carries out the supply of thermal energy at regulated tariffs.

While the district heating sector in Kosovo in transmission and distribution of thermal energy is classified as a natural monopoly, also due to the fact that there is still no competition in generation and supply, the district heating tariffs, containing all the above mentioned components, are subject to approval by ERO.

In line with its legal obligations and powers, Energy Regulatory Office issued Thermal Energy Pricing Rule. This rule sets the procedures for submission, review of tariff application and approval of tariffs as well as Methodology on Calculation of Allowed Revenues and Tariffs.

For determination of allowed revenues for the heating season 2022/2023 have been considered the following:

- Information provided by DH Termokos in its tariff application for heating season 2022/2023;
- Information provided by DH Termokos in its regulatory reporting of realizations- expenses and revenues, assets/investments, as well as technical and customer information, that has actually taken place in the heating season 2021/2022 and in the previous seasons.

Procedure of tariff review process:

- **06 June 2022** –ERO issued a notice letter on commencement of tariff review for DH Termokos for heating season 2022/2023; this was followed by ERO's request for data and information, sent on 10 June 2022, which described in detail the data and information that DH Termokos should submit for the tariff review, as well as the Plan and Schedule;
- **27 July 2022** – DH Termokos submitted by e-mail the tariff application for 2022/2023 season with the data and information required for tariff review;
- **12 August 2022**- Following the analysis and evaluation of data and information submitted by DH Termokos, ERO sent the written comments, specifying the requirements for correction, improvement and completion of the initial application;
- **19 August 2022** – DH Termokos re-submitted the application with some of the required corrections and improvements required in ERO's comments, as well as responses to ERO comments.

2. Principles and Formulation of Tariff Methodology

For the purpose of determination of allowed revenues and thermal energy tariffs for 2022/2023 season, the Methodology determined in Thermal Energy Pricing Rule is applied.

Principles

The basic principle of this methodology is that tariffs of utilities providing public services shall cover all justifiable costs - operational and capital, so that in one hand the customers should not pay excessively over the cost incurred for their service, while on the other hand the utility should recover all reasonable and justifiable costs plus a reasonable rate of return of its capital investment. Final price of service is usually defined to include all operational expenses of utilities providing public services i.e. to recover cost of production, distribution and supply (operation and maintenance, fuel, salaries, network losses costs, common costs, administrative costs etc.) plus a reasonable return on its investments devoted to the public service provision.

Given that in some cases such a regulation does not provide incentives for enterprises to increase operating efficiency and cost saving and on contrary may give incentive to over-invest in assets and also considering the obligation of the Regulator to protect customers, it is required from the enterprises not only to prove the declared “justifiable costs” but also to demonstrate increasing operational and cost efficiency. Such measures form the basis for reconciliation at the beginning of the tariff review, in which the Regulator rewards or penalizes the enterprise for increasing or decreasing the efficiency and cost control.

Formulation

For the purpose of calculation of Allowed Revenues and for final tariff calculation, Thermal Energy Pricing Rule (Annexes 1, 2, 3 and 6) provides the detailed formulation of Tariff Methodology. However, for consistency reasons, the formulation shall be shortly presented in this report.

Schematically, the Tariff Methodology can be shown as below. The costs which the enterprise should recover are built up from its operational costs, depreciation representing the ability of the enterprise to replace its assets, costs of network losses and the return on the Regulatory Asset Base (RAB), which in fact represents the profit for the company.

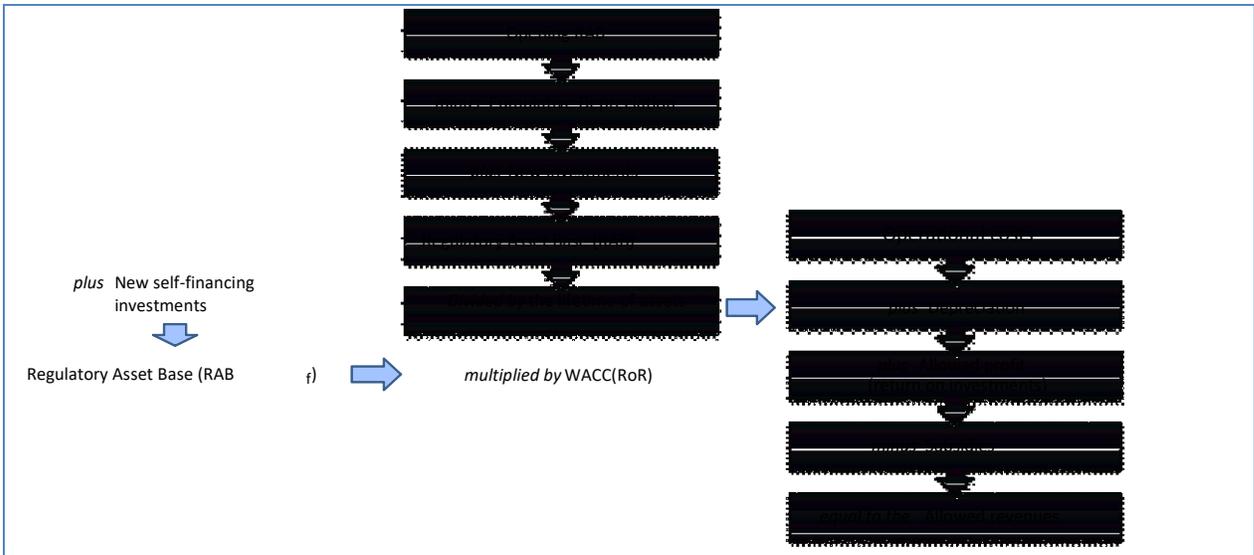


Figure 1: Allowed Revenues Calculation Scheme

Basic Regulation Formulas:

Allowed Revenues are calculated according to the formula:

$$\mathbf{MAR = OPM + DEP + RTN + LOS + ADJ}$$

Where:

- MAR** Maximum Allowed Revenues;
- OPM** Operating and Maintenance Costs;
- DEP** Annual Allowed Depreciation;
- RTN** Allowed Return on Assets;
- LOS** Cost of Network Losses;
- ADJ** Revenues Adjustment.

The allowed revenues represent the annual cost of the enterprise and consist of: i) operational costs, which are “justifiable”; ii) annual depreciation; iii) cost of network losses; and iv) allowed return on Regulatory Asset Base (RAB).

Operational Costs consists of the sum of the fixed and variable costs as follows:

$$\mathbf{OC = OC_F + OC_V}$$

Operational costs represent the total yearly estimated justified costs, including: i) costs of fuel, costs of thermal energy purchase and other costs such as electricity, water treatment chemicals, spare parts; ii) other system operation costs, repairs and maintenance; and iii) personnel costs and common costs. Allowed operational costs do not include: i) subsidies; ii) costs rejected by tax authorities and costs of setting aside and distributing reserves; and iii) lease payments for items not kept in the bookkeeping, financial or other unjustified costs.

Regulatory Asset Base is calculated according to the formula:

$$RAB_t^{end} = RAB_n^{start} + INV_n + WC_n - DEP_{n-1} - DIS_{n-1}$$

The Regulatory Asset Base (RAB) represents the enterprise assets considered to be used and useful in the provision of public service, that include: i) starting Regulatory Asset Base (RAB_t^{start}), which actually represents the final RAB executed in the previous season 2021/22 (n-1), new investments when they are planned and approved by the Regulator (INV_n); iii) sufficient working capital of the company to perform its activities (WC_n); Depreciation of assets carried out in the previous season 2021/22 (n-1) (DEP_{n-1}) and iv) Disposed Assets (DIS_{n-1})

ERO will take as a Rate of Return the value of WACC (Weighted Average Cost of Capital). WACC (%) is the sum of weighted average of the equity cost and debt cost, and is calculated according to the formula:

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

Where:

D/V-	Debt Share of the total capital base
E/V -	Equity Share of the total capital base
V -	Total capital base, which is the total of equity and debt
k_d -	Cost of debt
k_e -	Cost of equity

3 Determination of Allowed Revenues

For determination of Allowed Revenues of DH Termokos JSC. for heating season 2022/2023, according to Thermal Energy Pricing Rule, ERO has undertaken the following:

- 1) Evaluation and determination of allowed operational costs;
- 2) Evaluation and determination of depreciation;
- 3) Determination of Allowed Return on RAB (return on investments), which includes:
 - a) determination of RAB – evaluation and approval of company assets, verification and approval of planned investments and working capital; and
 - b) Calculation of the allowed Rate of Return (RoR)/ WACC;
- 4) Evaluation and determination of the allowed cost of network losses.

In determining the Allowed Revenues, ERO has taken into consideration the following:

- Information provided by DH Termokos in its tariff application for the 2022/2023 heating season- information regarding estimated revenues from heat sale and other related services, total forecasted costs, planned investments and assets, forecasted heat production and supply, as well as forecasted heating area;
- Information provided by DH Termokos in its regulatory reporting- expenses and revenues, assets/investment, as well as technical and customers information, that has actually taken place in the previous season 2021/2022;
- Information that ERO possesses from tariff reviews and monitoring of realizations and performance of previous seasons/years.

Knowing that forecasted information is the key to determination of allowed revenues, it should be reliable and realistic. Generally, in forecasting/planning the business a realistic approach should be applied, followed by a comprehensive assessment of multiple factors affecting the business; i.e assessment of the market and forecasting the expansion of customer base, assessment of production/supply capabilities and financial capabilities of the company. Naturally, the proper forecasting/planning has to be based on the data that the company has realized during a certain period.

It must be noted here that DH Termokos' tariff application was quite detailed and complete. However, in some of the data and information of the application were noticed inaccuracies, noncompliance and inconsistencies which, with some exceptions, were improved, explained and supplemented following ERO's comments and common meetings between ERO and DH Termokos.

In fact, as far as forecasted information is concerned (as stipulated in Annex 4 of Thermal Energy Pricing Rule), DH Termokos has submitted to ERO the statements/spreadsheet consisting of forecasted incomes and costs, technical and customer data, operational assets and forecasted investments for one-year period covering full district heating season- period: 15 October 2022 – 14 October 2023. While as support documents it has submitted: i) Audit Report, as well as statutory and financial statements for 2021; ii) metering of consumption registered in the last season based on the list of substations- data on the heating area and respective capacities, as well as other technical data, ii) list of assets- detailed data on fixed assets where the initial value (purchase value) is provided, the cumulative depreciation and the current value of assets (submitted in regular annual/seasonal reporting); iii) planning of investments for one year period which includes 2022/2023 season iv) planning for new connections for 2022/2023 season v) planning for customer billing based on metered supply/consumption and vi) registered measurements for thermal energy produced from cogeneration (submitted in regular annual/seasonal reporting) and vii) projected data for customer billing 2022/2023, based on realizations - consumption metering and heating area of customers in the previous season 2021/2022, as well as planning of new connections respectively expansion of the heating area of customers.

ERO has made efforts and has engaged the available expertise to make a realistic evaluation of the forecasted information submitted by Termokos. A comprehensive analysis was carried out and evaluation of the information presented, followed by a comparison of respective data from previous seasons, in order to make an accurate determination (forecasting) of allowed revenues for the coming season 2022/2023.

3.1 Evaluation and determination of allowed operational costs

The planning for operational costs submitted by DH Termokos for the period 15 October 2022-14 October 23, a period covering full district heating season 2022/2023, are structured as variable and fixed costs, a division which is mainly in compliance with provisions of Thermal Energy Pricing Rule as well as advanced accounting principles and Kosovo Accounting Standards.

This section presents in table all forecasted costs as presented by DH Termokos and the allowed operational costs approved by ERO (Table 1). The table is followed with the analytical explanation of each item of operational costs.

Table 1: Costs presented by DH Termokos JSC. and allowed by ERO (in €)

Operational costs - 2022/2023 season		Proposed by DH Termokos	Allowed by ERO
Variable costs			
1	Own generation	523 901	0
2	Energy Purchase from cogeneration - variable comp.	449 467	449 467
3	Water treatment chemicals	14 286	14 286
4	Water	135 000	135 000
5	Electricity (prod. & subst. Distr.)	650 000	650 000
6	Personnel cost (direct labour)	1 420 516	990 093
7	Annual license fee	0	0
8	Allowed bad debt	0	374 354
9	Others variables	181 997	0
10	Total variable costs	3 375 167	2 613 200
Fixed costs			
11	Materials, services	90 300	90 300
12	Repairs and maintenance	146 300	146 300
13	Energy purchases from cogeneration - fixed comp.	978 000	978 000
14	Administration expenses	106 500	106 500
15	Personnel expenses (different from direct labour)	1 408 478	886 478
16	Sales and other administrative costs	442 750	222 750
17	Total fixed costs	3 172 328	2 430 328
18	Total operational costs	6 547 495	5 043 528
19	Fixed costs	3 172 328	2 430 328
20	Variable costs	3 375 167	2 613 200

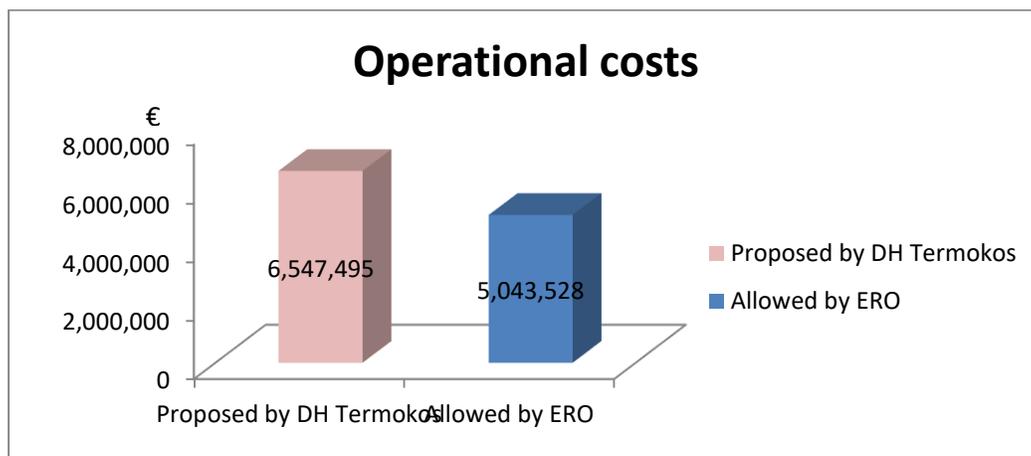
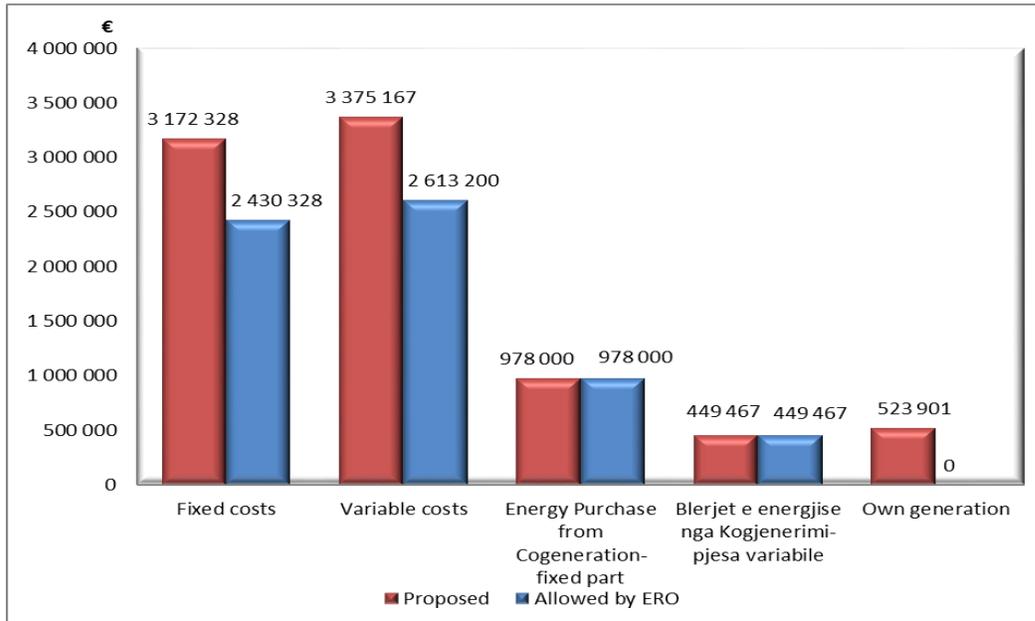


Figure 2: Schematic presentation of operational costs proposed by DH Termokos and allowed by ERO for the heating season 2022/2023

The details of the main costs are presented graphically below:



Analytical explanation

Detailed explanations and justifications for determination/allowance of each group of costs, namely for the main positions of operational costs, are provided below.

Variable costs:

- **Cost of thermal energy purchase from cogeneration in TPP Kosovo B- payment component for thermal energy amount:**

- DH Termokos proposed the total cost of thermal energy purchase from cogeneration in the amount of 1,427,467 €. This cost is based on: the reserved capacity according to energy balance planning and planned amount of thermal energy, as well as based on respective prices for capacity and the amount of thermal energy, calculated in accordance with thermal energy purchase agreement KEK Generation- DH Termokos

Concretely, the variable component of the payment for the amount of thermal energy is based on the planned amount of 307,854 MWh_{TH} and the price (charge) of 1.36 €/MWh_T

- Evaluation –The proposal of DH Termokos is evaluated to be mainly real and well-grounded. It must be emphasized that it also includes the payment component for the annual licensing tax which is calculated based on the annual tax of licenses for thermal energy production, set by the Rule on Taxes issued by ERO. The calculations are as follows:
 - Payment component for the amount of thermal energy: 418,682 €, and
 - Payment component for annual licensing tax: 30,785 €.

The above mentioned components give the result of the payment component for the amount of thermal energy from cogeneration in TPP Kosovo B, in the amount of **449,467 €** which is allowed for 2022/2023 season.

- It is worth mentioning that the overall cost of thermal energy purchase from cogeneration in TPP Kosovo B – including the reserved electric capacity component and the component for the amount of thermal energy - is **1,427,467 €**.
- **Fuel cost – heavy fuel oil:**
 - The cost of heavy fuel oil proposed by Termokos in the amount of 523,901 € is based on the estimated amount of heavy fuel oil consumption of 700 ton and the purchase price of 700 €/ton as well as the cost of € 1,200 for oil used for preserving boilers and the cost for heavy fuel oil quality analysis;
 - Evaluation –Upon the functioning of cogeneration project, the boilers of thermal energy production are a reserve capacity to be activated only during unplanned interruptions of TPP Kosova B. Therefore, their eventual usage would last for short periods until the necessary repairs are done. Taking into account that this cost is related to the process of extension of thermal energy production license, which is still on the phase of completing the documentation, the relevant details are described below:
 - The thermal energy production license of DH Termokos expired in the beginning of October 2021, which had a duration of 15 years;
 - Despite the fact that the application for license extension was carried out according to the foreseen legal terms, DH Termokos has not been able to obtain the environmental permit from the relevant Ministry, which is one of the main requirements for license extension.
 - Regarding this, it should be emphasized that DH Termokos' thermal energy production plants from heavy fuel oil are of old age and likely do not fulfil the environmental standards of emissions. For this reason, on 15.10.2021, DH Termokos, required from the Ministry, through an official letter, to be released from the obligation of obtaining the environmental permit, with the main justification that these plants are reserve capacity which could eventually be activated for periods of several days, only if the generation in TPP Kosova B fails.
 - However, the Ministry did not release DH Termokos from the obligation of obtaining the environmental permit for the heating plants with heavy fuel oil, and requested that it is subject to a regular process of fulfilling the legal criteria of obtaining the environmental permit.
Consequently, ERO could not extend the license for thermal energy generation from the heavy fuel oil plants.

Given that currently the license for the activity of thermal energy production from heavy fuel oil plants of DH Termokos has not been extended, ERO cannot recognize the cost of heavy fuel oil in this tariff review.

- **Cost of water for (re)filling of heating system**
 - DH Termokos has proposed the cost of 135,000 € for the estimated amount of water consumption for replenishment of thermal energy transportation network (primary network) and the cost for water consumption in substations;
 - Evaluation –ERO carried out its evaluations based on the realizations of this cost in the previous seasons- concretely in the 2021/2022 season, the realized cost of water was 97,556 €. Also, the evaluations have taken into account the forecast amount of water for replenishment of primary distribution network, as well as the water cost for substations, concretely the additional amount of water due to network expansion and new substations. In this regard, ERO accepts the proposed cost of water in the amount of **135,000 €**.

- **Cost of water treatment chemicals**
 - DH Termokos has proposed the cost of water treatment chemicals in the amount of 14,286 €, which is a cost approximately the same with the cost realized in the previous season.
 - Evaluation- considering the amount of water that shall be treated, water flows (losses) and the planned increase of heating area, ERO evaluates that the amount of **14,286 €** is sufficient to cover the cost of water treatment chemicals.

- **Cost of electricity**
 - DH Termokos has proposed the amount of 650,000 € € for the cost of electricity; this cost takes into account electricity consumption in system power plants and substations. It must be emphasized that the proposed value of electricity cost represents an increase which was justified mainly with the increase of the number of substations due to the increase of customer base, namely the increase of heating area and new equipment.
 - Evaluation – ERO recognizes the presented cost of electricity in the value of **650,000 €** in order to enable the recovery of entire consumption of electricity for the period in question, including additional expenses due to the increase of heating area and installation of additional equipment (new).

- **Personnel cost (“direct labour”)**
 - DH Termokos presented staff cost- “direct labour” in the amount of 1,420,516 €, which represents an increase of around 56 % compared to the value realized in previous season (908,266€). Some details were provided for this forecast, which were requested in the written comments of ERO, and was justified by the planned increase in the number of staff according to the Regulation on the organization and systematization of jobs issued by the Board of PE Termokos at the end of 2019. According to this Regulation, among other things, it is foreseen to increase the number of employees (from currently 203 to 248), as well as the addition of some new organizational units, such as the Legal Department and the Department for Capital Investment and Development, which are

expected to have 24 employees. According to the new organizational chart, an increase in the number of employees in the Distribution Department is foreseen due to the expansion of the network in other districts (neighbourhoods) of the city, within the projects that are ongoing or planned. Regarding the planned increase in the number of employees, it should be noted that, according to information from PE Termokos, new positions have not yet been filled in both existing and new departments. Also PE Termokos has not offered any recruitment plan for new staff to fill new positions.

Evaluation- Without wanting to provide estimations for the significant increase of the number of employees planned in line with the new Regulation, which is the exclusive competence of the Board of PE Termokos, ERO emphasizes that the addition of new positions should be a process that reflects the significant increase of enterprise operations, as well as considering cost-effectiveness and related benefits.

Based on the review of the information provided and the Regulation in question, it is estimated that, according to the new organization, no significant increase is foreseen in the number of employees in Production/Cogeneration and in the Distribution Department, and emphasizes the fact that so far there have been no additions of relevant positions. Taking into account these facts and considering that the filling of new positions is a process that requires time for the recruitment of professional staff and that should be undertaken in accordance with the gradual expansion of the enterprise operations, ERO considers that the proposed increase is not realistic and allows a 10% increase in this cost compared to allowances for the previous 2021/2022 season; this increase reflects the gradual recruitment of staff in line with the increase in the operations of the enterprise. From what was said above consequently ERO allows the **Cost of staff - 'Direct Labour'** in the amount of **990,093 €**.

- **Bad Debt Cost and Annual Licensing Tax**

- DH Termokos did not present the cost of bad debts under the variable costs, while for the licensing tax for production of thermal energy from heavy fuel oil production plants in the heating plant, was presented the joint amount for the tax of self-production and production from cogeneration.
- Evaluation - Pursuant to provisions of Thermal Energy Pricing Rule, bad debt cost is calculated as a justifiable share of the enterprise revenues (i.e. the billing value from heating sale). This "justifiable share" shall be appointed in a manner to stimulate the enterprise for increasing their efforts in enhancing the share of payment collection from customers but at the same time taking into consideration the fact that a considerable amount cannot objectively be collected, therefore it shall remain a debt that actually will not be realized. From what was stated above, ERO's opinion is that the share of 5% of the bad debt is justifiable and therefore allows the cost of bad debt in the amount of **374,354 €**. With respect to the licensing tax, it should be emphasized that due to the fact that the license for thermal energy production from heavy fuel oil plants has not been extended, then the enterprise is not charged with this tax.

- **Other variable costs**

Under this category, DH Termokos has presented the cost of “loan interest expense”, in the amount of 181,997 €. Regarding this, it should be emphasized that this cost is handled in the return on invested assets and consequently this cost is not recognized under this category.

From what was said above, it results that **variable costs** allowed by ERO are determined in a value of **2,613,200€**.

Fixed costs

- **Cost: Repairs and Maintenance;**
 - DH Termokos, for the cost of maintenance and repairs has planned an amount of 146,300€- which represents an increase compared to the realization of this cost in the previous season. For this increase, DH Termokos has given as a justification the increase of repairs and maintenance works due to network expansion.
 - Evaluation – Taking into account the above mentioned justification, as well as the need to ensure a stable operation of the plants, equipment and the network which provide a quality supply, ERO recognizes the repairs and maintenance cost in the value of **146,300 €**.

- **Cost: Materials and Services**
 - For this category, from DH Termokos is proposed the value of 90,300 €;
 - Evaluation –Taking into consideration that this cost is closely related to the repairs and maintenance cost, as well as based on the above comparisons, it is evaluated that the value proposed by DH Termokos is real and therefore, ERO allows the cost “**Materials and Services**”, in an amount of **90,300 €**.

- **Cost of thermal energy purchase from cogeneration in TPP Kosova B- fixed payment component for reserved capacity**
 - The payment component for reserved capacity proposed by DH Termokos is based on the reserved electric capacity: 46,929 MWh_{EL}/h and the respective pre-calculated charge (price): 20.84 €/MWh_{EL}/h;
 - Evaluation–The proposal of DH Termokos for the reserved capacity is evaluated as real and mainly based on Energy Balances; therefore, from the calculations it results that the **payment component for the reserved capacity is 978,000 €**;

- **Administration costs:**
 - DH Termokos proposed administration cost in the amount of 106,500 € providing respective details. The proposed value is approximate to the value realized in the previous season (109,422 €).

- Evaluation –Based on what was stated above and in order to allow the improvement of services of the enterprise, especially customer service, ERO decided to recognize the proposed cost in the amount of **106,500€**.

- **Personnel cost (different from “direct labour”)**

- DH Termokos has proposed an amount of 1,408,478 € for the cost of the staff engaged in administration and other supporting services, a proposal increased by 30% compared to the realization of this cost in the previous season (1,092,569 €), while it is also an increase of about 75% compared to the value allowed for this cost in the review of last season (€ 805,889€). Same as for the personnel cost ‘direct labour’, this increase is justified by the planned increase in the number of staff according to the Regulation on Organization and Settlement of Jobs issued by the Board of PE Termokos at the end of 2019. According to this Regulation, among others, the number of employees is expected to increase (from currently 203 to 248), as well as the addition of some new organizational units, such as the Legal Department and the Department for Capital Development and Investment, which is expected to have 24 employees. According to the new organizational chart, an increase in the number of employees in the Distribution Department is foreseen due to the expansion of the network in other districts (neighbourhoods) of the city, within the projects that are ongoing or planned. Regarding the planned increase in the number of employees, it should be noted that, according to information from PE Termokos, new positions have not yet been filled in both existing and new departments. Also PE Termokos has not offered any recruitment plan for new staff to fill new positions.
- Evaluation – ERO, without wanting to give estimations for the significant increase in the number of employees planned by the new Regulation, which is the exclusive competence of the Board of PE Termokos, emphasizes that the addition of new jobs should be a process that reflects the significant increase of the enterprise operations, as well as considering the cost-effectiveness and related benefits.

From the review of the information provided and the Regulation in question it is estimated that, according to the new organization, it is foreseen the establishment of 2 new departments (each with 12 positions) which have not yet been filled - so the relevant staff has not been recruited, same as other positions planned with the new organizational chart have not been filled. Taking into account these facts and considering that the filling of new jobs is a process that requires time for the recruitment of professional staff and that should be undertaken in accordance with the gradual expansion of the enterprise operations, considers that the proposed increase is not realistic and allows a 10% increase in this cost compared to value allowed for the previous 2021/2022 season; this increase reflects the gradual recruitment of staff, in line with the increase in the operations of the enterprise. From what was said above consequently ERO allows the **Personnel cost - ‘different from direct labour’** in the amount of **886,478 €**.

- **Sales and other administrative costs**

- This cost is proposed by DH Termokos in quite a high amount of 442,750 €; from the provided details it is noticed that this category includes the sub-category “tax profit expenses” in the amount of 220,000 €.

- Evaluation– in relation to this, we must explain that the profit, based on the tariff methodology, is addressed in allowed return, which is calculated based on the Regulatory Asset Base with a reasonable rate of return according to the Weighted Average Cost of Capital (WACC). Therefore, this sub-category as well cannot be included in Sales and other Administrative Costs.
- From what was stated above, ERO has deducted the amount of 220,000 € of the above-mentioned component from the proposed amount, therefore the allowed value for sales and other administrative costs is **222,750 €**.

From what was stated above, it results that **Fixed Costs** recognized / allowed by ERO are determined in the amount of **2,430,328€**.

- Total allowed operational costs for 2022/2023 season:

Allowed operational costs consist of the sum of the fixed and variable costs and are calculated according to the formula written below:

OC= Variable costs + Fixed costs

From the formula it is calculated that:

Allowed operational costs are in the amount of **5,043,528 €**

3.2 Determination of the Regulatory Asset Base (RAB)

Determination of RAB is the main factor for calculating the Annual Depreciation and Allowed Return on Assets, which in fact represents the allowed profit from the regulated business activity.

The Regulatory Asset Base- RAB, pursuant to Annex 2 of Thermal Energy Pricing Rule, is calculated according to the following formula:

$$RAB_t^{end} = RAB_n^{start} + INV_n + WC_n - DEP_{n-1} - DIS_{n-1}$$

Where:

RAB_t^{end} - presents the assets planned for 2022/2023 season ('n)

RAB_n^{start} - The Regulatory Asset Base of initial assets, which actually represents ending RAB realized in the previous season 2021/22 (n-1);

INV_n - New investments, planned and approved by the Regulator for one-year period which includes the heating season 2022/2023;

WC_n - Sufficient Working Capital for the company to carry out its activities;

DEP_{n-1} – Depreciation of assets realized in previous season 2021/22 (n-1); and

DIS_{n-1} - Assets disposed in previous season 2021/2022 (n-1)

3.2.1 Determination of Starting Regulatory Asset Base (RAB_n^{start})

RAB_n^{start} represents the initial basis for the determination of RAB planned for 'n' - 2022/23 season, which, as emphasized above, is actually the ending RAB, executed in the previous season 'n-1' - 2021/22.

From the regular monitoring of realizations, where the focus is mainly in monitoring the execution of investments in relation to the planned ones, (Monitoring Report of realizations for the 2021/2022 season) the realized values are concluded, from which the final RAB realized in season 'n-1' – 2021/22 in an amount of **50,947,199 €** is calculated, which at the same time represents the starting RAB for 'n' -2022/23 season.

2.2.2 Determination of allowed new investments

Regarding new investments planned for the tariff review period: October 2022- October 2023, it must initially be emphasized that these investments mainly belong to the rehabilitation of the network and substations and network expansion and new substations; DH Termokos presented the total value of **planned new investments** in an amount of **26,776,921 €**; this amount includes the investments from donations and self-financing investments.

Investments from donations

Investments within the projects of international donors such as KfW and MCC are presented in a total amount of **20,787,921 €** - therefore these projects are mainly planned to be funded from donations, whereas a small amount from self-financing, details as follows:

- **KfW project:** Rehabilitation of the network and substations, as well as expansion of the network and new thermal substations, is an ongoing project – it started in 2021; this project includes these components:

- 1) Rehabilitation/modernization of 235 existing sub-stations, installation of 333 new sub-stations, installation of heat reservoirs with a capacity of 2x400 m³, renovation and expansion of the system of circulating pumps of the network, rehabilitation of the pressure maintenance system in the primary distribution network and installation of SCADA; contracting value 7,784,573 €.
- 2) Rehabilitation of the network with a pipeline length of 12,358 m, expansion of the network with a pipeline length of 23,524 m, and network densification with a pipeline length of 5,958 m; contracted value € 6,392,410 pipeline, network expansion and new thermal substations;

Preliminary details have been given for the above-mentioned components, where it should be mentioned that both components are currently being implemented - specifically, the implementation of component '1' started in May 2022 and is expected to be completed in December 2023, while component '2' started in May 2021 and is expected to be completed in December 2022.

Taking into account the realizations in the previous period and the dynamic project implementation plan, DH Termokos has planned that during this tariff review period, the works

worth **€7,382,071** will be carried out.

- **MCC Project:** Installation of thermal energy meters- This project is foreseen in an amount of €10.9 mil, as a donation from MCC- USA, however, the contract for the purchase and installation of equipment granted in April of this year has the value of € 6,905,850.

This project will include the installation of thermal energy meters and thermostatic valves in about 300 collective housing buildings within the service area of DH Termokos, respectively about 14,000 household and commercial customers; specifically, the project in question contains the following components:

- Installation of about 51,000 heat allocators and about 4,300 individual thermal energy meters;
- Installation of 70,000 thermostatic valves in customer radiators (apartments and commercial units), as well as installation of circulating pumps in a limited number of thermal substations;
- Development of the software for billing and reading of thermal energy consumption;
- Assistance on improvement of billing services based on metered consumption.

Based on the project implementation plan, for this tariff review period, DH Termokos submitted the entire contractual value - therefore **€6,905,850**.

- **KfW Project “Solar4Kosova”:** A project initiated within the cooperation of our government with KfW and EBRD, for production of thermal energy from solar energy, with an estimated value of investment of around 65 mil. €. This project is in the feasibility study phase, whereas DH Termokos for the tariff review period 2022/'23 presented the planned value of realization in an amount of **5 mil. €** which is dedicated for preparatory and design works.
- **EU – EIB Project** for the doubling of thermal energy extraction capacities from the cogeneration system: This project is in the initial study phase within the framework of the IPA supported by the EU and EIB (European Investment Bank in cooperation and co-financing with the Municipality of Pristina and DH Termokos; total value of investment is expected to be around €25 million. For the tariff review period 2022/'23, DH Termokos has presented the value of **€1.5 mil** which is planned to be realized mainly for the design of studies.

Self-financing Investments

As mentioned above, DH Termokos is planning self-financing investments in an amount of **5,989,000 €**; of these private investments, a part is co-financing within the aforementioned investment projects by donors, while the rest are individual investments. Self-financed investments are divided according to the company's functional units in production, distribution and joint investments where co-financing in donor projects is also included - the following details:

- **Production** – Heating and co-generation plants planned for a total amount of €1,598,500 for the period 2022/'23. In relation to this, it should be noted that, in the development plan, these investments in production are presented for the period 2022 - 2024 in a total value of €1,450,000. In the production investment planning, the equipment of the heating

- plants and the thermal energy extraction and reception stations (HES and HRC – an integral part of the co-generation system) are included. In particular, it should be noted that the rehabilitation of 2 heavy fuel oil boilers with a total value of €750,000 is planned.
- **Distribution** – Rehabilitation of the network and relevant equipment in an amount of 200,500 €;
 - **Administration and joint services** – with a total value of 1,190,000 € which includes: Construction of the Directorate and Administration Building in the amount of €1,060,000; and computer equipment and software programmes worth €130,000.
 - **Co-financing in donor projects** in the total value of €3,000,000, which includes: Co-financing for the KfW project in the value of €2,500,000 and co-financing in the EU-EIB project in the value of €500,000.

Summary of ERO evaluations on allowed new investments

Investments from donations

ERO has continuously followed the development of these investment projects and within the cooperation with the parties involved in these projects was informed precisely on the details of these projects. It should also be emphasized that all the presented projects have also been included in the Ten Year Development Plan 2022-2031 of DH Termokos, which is approved by ERO.

A number of these projects, especially the projects from donors have a duration of over a year, therefore it was required the evaluation of the works that are planned to be realized during the tariff review period, which is evaluated to have been based mainly in the dynamic plans of realizations of these projects. In this regard, it should be mentioned that these two projects (of KfW and MCC) have been proposed and allowed in the last tariff review for the 2021 - '22 season in the values: 5.5 mil € respectively 1.5 mil €. During the regular monitoring of the realization of investments of the 2021 / '22 season, it was found that the level of realization of investments of the KfW project was complete above 95% whereas the MCC investment project has not been realized at all mainly due to of delays in the tendering process for the selection of contractors for carrying out the works.

Concretely:

- **KfW Project** – both above-mentioned components are under the realization process and generally the progress of the project continues according to the plan without any significant obstacles that would affect the implementation. The planned realization value for the tariff review period 2022/'23 reflects the realization of investments in the previous period and the implementation plan for the execution of works in the following period. Consequently, ERO assesses that the amount presented by DH Termokos is based on realistic planning and recognizes the planned investment for the tariff review period in the amount of **€7,382,071**.
- **The MCC Project** – Regarding this project, it should first be emphasized that the contract for the purchase of equipment and the execution of the installations was granted in April of this year, which in the following months was followed by preparatory and logistical

activities to start the installation works in September. It is estimated that the beginning of the heating season will represent an obstacle for the installation of equipment, especially the installation of thermostatic valves in radiators and circulating pumps in substations, which will affect the postponement of the works. As for the issue of ownership of these assets, it should be noted that, for metering equipment, there is a legal definition of the obligation for installation and the right of ownership of the company in such equipment. While thermostatic valves are considered as customer assets, representing a significant part of assets planned for investment. Based on these evaluations, ERO for this project recognizes the investment value of **€4,143,510**, emphasizing that the updates - corrections will be made according to the ascertained realizations of the investment and the factual registration of these assets in the list of the company's assets.

- **KfW Project 'Solar4Kosova'** – Since this project is in the initial study phase, it is estimated that the investment realization planning for this project in the tariff review period does not reflect the usual duration needed to complete the study and development phase of the project. Also, the dedication of funds for investment belongs to preparatory and design works that are not necessarily considered specific investment in assets. Based on these evaluations, ERO for this period does not accept the value presented for this investment project.
- **The EU-EIB project** for the doubling of thermal energy extraction capacities from the cogeneration system – also this project is the initial study phase and the company's planning is considered unrealistic considering the usual duration for the preparation of the study. Also, the presented value is dedicated exclusively to the design of the preliminary study. Therefore, ERO for this tariff review period does not accept the value presented for this investment project.
- From what was described above, the **allowed new investments from donations** for the tariff review period (October 2022 - October 2023) are in the total amount of **€11,525,581**.

New self-financing investments

Initially, it should be emphasized that the investments presented by DH Termokos are mainly in accordance with the ten-year development plan with some deviations in terms of time and respective values. It should also be mentioned that during the monitoring of the realization of investments for the previous period, ERO has determined that the realization of investments with self-financing was quite small, 48.6%. However, most of the planned investments are mainly related to the continuous improvement of operations and sustainable supply, with the exception of some investment projects. Specifically, the following assessments:

Investments in thermal energy production plants:

- The total value of investments in thermal energy production plants – co-generation plants and heating plants – exceeds the value of relevant investments in the Development Plan and also the deadlines do not match.

-Planned investments in thermal energy production plants, namely co-generation plants HES and HRS, are within regular investments to maintain the co-generation and operation level and to ensure quality supply of thermal energy.

- Investments in heavy fuel oil boilers, in this phase, are evaluated to be an unreal planning due to the fact that these plants are under the process of obtaining the environmental permit and for this reason ERO has not been able to grant the license for the activity of thermal energy production from these plants. ERO Evaluates that in this phase, only the investments related to the fulfilment of environmental criteria are necessary.

Based on these evaluations, investments in thermal energy production facilities in the amount of **€810,000** are recognized.

Investments in distribution network:

- Planned investments in the distribution network include network rehabilitation - which specifically includes pipelines and associated equipment such as circulating pumps for substations, regulating valves, thermal energy meters, etc. It is evaluated that these investments are required to ensure safe operation and improvement of services. As such, the investments in the distribution network are fully recognized at the presented value of **€200,500**.

Investments in administration and joint services:

- Among other new self-financing investments, among others, the construction of the Central Administrative Office Building of DH Termokos is also planned. The presented value of this investment is € 1,000,000 for execution of works and € 60,000 for supervising the execution of works. Regarding this investment, it should be noted that initially for the construction of the facility was presented the amount of 530,000 €, and then after the compilation of the detailed project, the concept for construction of the facility changed by significantly increasing the size of the facility and storeys, which of course resulted in a value significantly greater than the planned initial value (€2,200,000). ERO would like to emphasize that the relevant changes to pre-approved investments must be well-reasoned and substantiated. Regarding the realization of this investment, it should be said that, in the tariff review for the 2019/2020 season, ERO has recognized the investment for the construction of the facility in the amount of 530,000, of which only €67,980 (12.83%) was realized for the drafting of the Feasibility Study: Evaluation of the situation and facilities of PE "Termokos" JSC. and the design of the detailed construction project. While in the review for the past seasons 2020/'21 and 2021/22, a value of €482,000 was allowed, which was not realized at all during these periods due to delays in the tendering process. Taking into account what was said above, ERO decides to transfer the allowed investment amount in the previous review of €482,000 to the current tariff review for the 2022/2023 season. Therefore, for this one-year tariff review period, it allows the investment value for the construction of the new facility of **€482,000**.
- Within the framework of new investments in information technology equipment, ERO accepts the proposed amount of **€38,000**.

- Referring to these evaluations, ERO accepts the value of **€510,000** for investments in administration and shared services.

Co-financing in donor projects:

ERO evaluates that the amount presented by DH Termokos does not reflect the relevant implementation plans for donor projects and accepts the amount of **€1,200,000** as co-financing for the KfW project: Rehabilitation of the network and substations and expansion of the network and new substations.

From what was said above, the **allowed new investments with self-financing** for the tariff review period (October 2022 - October 2023) are in the total value of **€2,730,500**.

The total value of allowed new investments and the division by financing manner:

Based on the evaluations presented above, ERO accepts or namely allows New Investments planned for the tariff review period (October 2022 - October 2023) in a total amount of **€14,256,081**.

Referring to the financing details described above, the division of allowed new investments by financing manner is as below:

- (Allowed new investments) _{DONATION} = 11,525,581€ and
- (Allowed new investments) _{SELF-FINANCING} = 2,730,500 €.

3.2.3 Determination of Working Capital

According to respective provisions of Thermal Energy Pricing Rule-Annex 2, Working Capital is usually determined to allow circulating monetary means for a period no longer than a month, respectively the amount of average monthly revenues. Consequently, ERO determines the ratio 1/12 in the revenues from the sale of heat realized in the previous season 2021/2022 – 7,487,083 € and allows the **working capital** in the amount of **623,924 €**.

3.2.4 Annual Depreciation of Assets- realized in previous season 2020/21 (n-1)

Annual depreciation realized in season 'n-1'- 2021/22 is calculated based on Regulatory Asset Base (RAB) realized in that season and the weighted average depreciation rate, concretely, from the RAB Value realized in 2021/22 (50,947,199 €) is deducted the value of realized Working Capital (601,022 €) and the sum (50,346,177 €) is multiplied with the weighted average depreciation rate (3.29%). Therefore, the **Annual Depreciation realized in season 2021/22** is calculated in the amount of **1,655,355 €**.

3.2.5 Disposals

Disposal means the assets that the regulated enterprise has removed from usage- the assets that have been damaged to the extent that cannot be repaired in order to be reused again, the assets that eventually have been sold/leased (when they were evaluated as unusable) etc.; According to

the formula given at the beginning of chapter 3.2, the value of disposed assets is subtracted (deducted). Given that for this tariff review no disposal of assets was reported, the value for disposals is 0€.

Summary of the determination of RAB and RAB_f

The following table presents the summarized integral components and respective values of Regulatory Asset Base (RAB) and the Regulatory Base of Self-financed Assets (RAB_f)

Table 2: RAB and its components - DH Termokos, heating season 2022/2023

Regulatory Asset Base (RAB) - DH TERMOKOS Heating season 2021-2022		Allowed by ERO [€]
3.2.1	Starting Regulatory Asset Base (RAB _n ^{start})	50,947,199
3.2.2	New investments (INV _n)	14,256,081
3.2.3	Working Capital (WC _n)	623,924
3.2.4	Annual Depreciation of Assets- realized in season 2019/20 (DEP _{n-1})	-1,655,355
3.2.5	Asset Disposal- in season 2021/22 (DIS _{n-1})	0
	Regulatory Asset Base (RAB)	64,171,849

In relation with the Regulatory Asset Base of self-financing assets (RAB_f), it should be emphasized the same formulations as for general RAB are applied, but in this case the values of self-financing assets are considered; details as follows:

Table 3: RAB_f and its components - DH TERMOKOS , heating season 2022/2023

Regulatory Base of Self-financed Assets (RAB _f)- DH TERMOKOS Heating Season 2022-2023		Allowed by ERO [€]
3.2.1	Regulatory Asset Base of self-financed assets- starting (RAB _{f-n} ^{start})	10,951,432
3.2.2	New investments (self-financed- without donations) (INV _{f-n})	2,730,500
3.2.3	Working Capital (WC _n)	623,924
3.2.4	Annual Depreciation of self-financed assets- realized in season 2021/22 (DEP _{f-n-1})	-295,726
3.2.5	Disposal of self-financed assets –in season 2021/22 (DIS _{n-1})	0
	Regulatory Base of Self-financed Assets (RAB_f)	14,010,130

3.3 Evaluation and Determination of Annual Depreciation

The Determination of Annual Depreciation for season 2022/23 ('n') is based on the total RAB value determined in table 2 (chapter '3.2') and in the weighted average of the depreciation rate based on the asset categorization, presented in the following table '4'. Table 4 presents a summary of RAB categorization according to asset categories, respective lifespan, namely the depreciation rate for each asset category, as well as the weighted average depreciation rate.

Table 4: Categorization of assets (RAB) and weighted average depreciation rate

Depreciation Rate/ Weighted Average Depreciation Rate- New Investments			
Land	Assets Lifespan	Years	N/A
	Depreciation Rate	%	0
	Investment value	Euro	0
Buildings	Assets Lifespan	Years	35
	Depreciation Rate	%	2.86%
	Investment value	Euro	0
Plants, electro-mechanical installations and equipment	Assets Lifespan	Years	25
	Depreciation rate	%	4.00%
	Investment value	Euro	0
Grid – Pipes, fitting and integral equipment	Assets Lifespan	Years	35
	Depreciation rate	%	2.86%
	Investment value	Euro	14,256,081
IT equipment, Cont. syst. equipment., and office mini inventory	Assets Lifespan	Years	5
	Depreciation rate	%	20.00%
	Investment value	Euro	0
Total new investments	Assets Lifespan	Years	N/A
	Weighted Average Depreciation Rate	%	2.86%
Weighted Average Depreciation Rate (Existing Operational Assets + New Investments)			3.22%

As it can be seen from the table above, the weighted average depreciation rate (DR_{WA}) is calculated 3.22%. Based on the total value (RAB minus Working Capital) and weighted average depreciation rate, the annual allowed depreciation is calculated, as follows:

$$\text{Allowed annual depreciation (DEP}_n) = (\text{Total RAB-WC}_n) * DR_{WA} = 63,547,925 \text{ €} * 3.22 \% = \mathbf{2,043,471\text{€}}$$

3.4 Determination of Allowed Return on RAB (Allowed profit)

As previously mentioned, calculation/determination of Allowed Return is calculated based on the Regulatory Base of Self-financed Assets (RAB_f) and Rate of Return (RoR), therefore, it includes the following two components:

- Determination of Regulatory Base of Self-financed Assets (RAB_f) ; and
- Calculation of allowed Rate of Return (RoR), determined in the WACC value.

The first component - RAB_f is calculated in chapter 3.2 – table ‘3’, whereas the calculation of the second component- RoR is determined in the following chapter:

3.4.1 Calculation of Allowed Rate of Return (RoR)

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 for a profit that allows to continue the investment in their assets, in order to be able to rehabilitate and expand them.

A reasonable RoR is considered to be the rate of the “Weighted Average Cost of Capital” (WACC), which is calculated in the components of capital base, taking into account the weights of the sums of these capital components. In other words, WACC is the sum of weighted average cost of equity and cost of debt.

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

$$ERP = (r_m - r_f)$$

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:

$$WACC_{pre-tax} = [(D/V) * k_d] + [(E/V) * k_e]$$

where:

D/V	Debt share of the total capital base (as a percentage)
E/V	Equity share of the total capital base (as a percentage)
V	Total capital base, which is the total of equity and debt
k_d	Cost of debt
k_e	Cost of equity

The cost of Debt (k_d) is a contractual commitment and the interest rate the enterprise pays in actual loans (credits) :

Cost of equity (k_e) is calculated as follows:

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

Where:

r_f risk-free rate and it is derived from the estimates on Government bonds return

β_e "Beta": risk measure for the respective company

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

"The risk premium" is determined by "beta" and by the expected market risk premium that investors will demand from the market as a whole. The "beta" factor measures the unpredictability of a company's return relative to the stock market as a whole.

Below we estimate/calculate the cost of debt and the cost of equity for the district heating enterprises in Kosovo in order to come to a pre-tax WACC.

Cost of Debt

For this heating season and the following ones, ERO decides to have a D/V ratio in the value of 60/100 (60% debt and 40% equity). This 60% ratio should be used in the estimations/calculations of commercial pre-tax WACC for district heating season 2022 /2023 and for the following seasons, if no significant change is noticed.

Currently, DH Termokos has a loan from KfW with the interest rate of 8.79% for investments in the cogeneration project. With respect to this, it shall be emphasized that that the majority of investments of the cogeneration project was funded by donations (German Government, European Commission and central and local institutions); whereas the amount of 5,000,000 € is a loan from KfW with an annual interest rate of 8.97% and return term of 11 years. Consequently, the cost of debt shall reflect the current loan and is fixed in the amount of **8.79%**.

Therefore, cost of debt is:

$$k_d = 8.79 \%$$

Cost of Equity

The cost of equity is expressed with the following formula:

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

where:

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

Risk Free Rate (r_f) is currently evaluated in the range from 1.1 up to 3.0 %, based on the local and international financial trends of governmental bonds (treasure bonds). The low limit presents the level of interests for Kosovo long-term treasury bonds, whereas the high limit represents the 10-year average of interest from Hungary's treasury bonds- which represent the riskiest emitter of the long-term traded debt among regional comparators. Based on this, ERO fixed the **Risk Free Rate** in an amount of **2.3%**.

Recent regulatory authority decisions estimate the equity risk premium in a range from 3.5 to 5%. Given that DH Termokos is a public enterprise it is considered that the equity risk is minimal and consequently it is assumed that the **value of ERP is equal to 4.5%**.

The average asset beta for EU electricity networks 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 Kosovo district heating industry, it seems reasonable to assume that demand growth – which is the main driver of revenue growth – will be more unpredictable than the GDP growth – which is the main driver of stock market growth – than in developed and larger countries. The addition of a single major customer in the district heating will mean an increase in district heating demand compared to previous demand, while the impact on GDP may be much lower. In order to take into account the potentially more volatile nature of the revenues of district heating enterprises compared to GDP growth, we consider that the cost of equity is above the average set by the EU regulators and we consider that a reasonable “ β_e ” for district heating companies in Kosovo is as below: **$\beta_e = 1$**

Post-tax cost of equity is as follows:

$$k_{e \text{ post tax}} = 2.3\% + (1 * 4.5 \%) = 6.80\%$$

Pre-tax cost of equity is found by multiplying the above figure of the post-tax cost of equity with the tax wedge, as below:

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

Where:

t Tax rate on corporate profit

The corporate tax (t) in Kosovo is 10% and the tax wedge is:

$$1/(1-0.10) = 1.11$$

Pre-tax cost of equity is:

$$k_{e \text{ pre-tax}} = 6.80\% * 1.11 = 7.55 \%$$

As a consequence of the above calculations, it is calculated the pre-tax WACC – rounded to two decimals – as below:

$$WACC_{\text{pre-tax}} = [8.79\% * 0.6] + [7.55\% * 0.4] = 8.30\%$$

Calculation of Allowed Return on RAB_f (Allowed Profit) for DH Termokos

Based on the calculated $WACC_{pre-tax}$ of 8.30 % as mentioned in 3.4.1, we are now able to calculate the Allowed Return or Allowed Profit for DH TERMOKOS, according to the formula below:

$$RET = RoR \times RAB_f$$

Therefore, the Allowed Return on RAB_f is equal to $14,010,130\text{€} \times 8.30\% = 1,162,311\text{€}$.

Table 5: Allowed Return (Allowed Profit) in RAB_f for DH TERMOKOS for the heating season 2022 – 2023

Allowed Return (Allowed Profit) on RAB_f for DH TERMOKOS		Allowed by ERO[€]
RABf	Regulatory Asset Base – self-financed	14,010,130
RoR	Rate of Return at WACC level	8.30%
	Allowed Return or Allowed Profit	1,162,311

3.5 Determination of Network Losses Cost

The allowed cost of network losses is used to cover the enterprise costs caused due to the loss of thermal energy during transmission and distribution. In accordance with Article 1 of Thermal Energy Pricing Rule, this cost is calculated as the quotient of the amount of network losses and generation of thermal energy that enters the network (share of overall network losses), multiplied by generation total variable cost.

From what was said above, based on the data presented by DH Termokos as well as its evaluations, ERO has carried out the Thermal Energy Balance for DH Termokos for heating season 2022/2023, through which it determined the amount of network losses of **29,713 MWh**, being the amount of transmission network losses TPP Kosova B- DH Termokos (6,157 MWh) and the amount of distribution network losses (23,556 MWh). Expressed in percentage, the total share of network losses is 9.83%- the share of transmission network losses 2.0% and share of distribution network losses 7.83%. Also, from the Thermal Energy Balance is derived the amount of net production (generation) and net purchases of thermal energy – in a total amount of 301,027 MWh MWh.

Based on the above mentioned values and variable operational cost (2,613, 1200 €), the **cost of network losses** in the amount of **257,936 €** is calculated.

3.6 Adjustment

Adjustment is used to correct eventual changes between the planning for the tariff review for the period (season) 'n-1' and realizations that have actually occurred during that period (season) and those changes are included (corrected) in the next review.

Concretely, adjustment includes the change between planning and actual realization of these components: i) Revenues; Operational Costs; Annual Depreciation; and return on RAB_f.

The total adjustment value for the previous season 2021/22 is calculated: **-15,635 €**. Therefore, this value is deducted from the value of allowed revenues for season 2022/23.

3.7 Calculation of Maximum Allowed Revenues - Summary

Total Allowed Revenues are calculated with the following formula:

$$\text{MAR} = \text{OC} + \text{DEP} + \text{RTN} + \text{LOS} +/\text{- ADJ}$$

First of all, it should be noted that in calculation of Maximum Allowed Revenues are considered the operating costs deducted for the allowed cost of losses (so-called net operating costs in the amount of **4,785,593 €**)

Consequently, the value of MAR is equal to **8,233,676 €** as presented in detail in Table 6.

Table 6: Allowed Revenues for DH Termokos for heating season 2021-2022

Allowed Revenues for DH Termokos for heating season 2022-2023		Allowed by ERO [€]
OC	Allowed Operational Costs (net)	4,785,593
DEP	Annual Depreciation	2,043,471
RTN	Allowed Return on RAB _f	1,162,311
LOS	Allowed Cost of Losses	257,936
ADJ	Adjustment- the difference between allowance and realizations	-15,635
MAR	Maximum Allowed Revenues	8,233,676

In order to be in compliance with the tariff structure which estimates the division in thermal capacity component (fixed component) and thermal energy amount component (variable component), the division of MAR is made according to the share: fixed part 15% and variable part 85%. Consequently, division of MAR in fixed part and variable part for heating season 2020/2021 is as follows:

Fixed part of Maximum Allowed Revenues (MAR_f) **1,235,051 €; and**
Variable part of Maximum Allowed Revenues (MAR_v) **6,998,625 €.**

4. Thermal Energy Balance

Thermal energy balance is a significant component of tariff review because it determines the projections for production/purchases of thermal energy, network losses and finally customer supply. This is why projections of the Balance are influential in the planning of respective costs and consequently influence the determination of allowed revenues and tariffs.

The summarized components of Thermal Energy Balance for DH Termokos for heating season 2021/2022 in tabular and graphical form are presented below:

Table 7: Summary of Thermal Energy Balance

Thermal Energy Balance - DH Termokos sea. 2022/2023		Proposed by DH Termokos	Allowed by ERO
Thermal Energy Gross Production	MWh	6,724	0
Gross purchase of thermal energy. (entry in Distr. Trans.)	MWh	307,854	307,854
Net Purchases of Thermal Energy. (Exit from Dist. Trans)	MWh	301,697	301,697
Amount of Losses in Transmission Network	MWh	6,157	6,157
Share of Losses in Transmission Network	%	2.00%	2.00%
Gross production + Gross purchases of Thermal Energy	MWh	314,578	307,854
Amount of Losses in Trans. Net + Own-consumption	MWh	6,827	6,827
Net production + Net purchases of thermal energy (Entry in Dist. Net.)	MWh	307,751	301,027
Amount of losses in Distribution Network	MWh	24,082	23,556
Share of losses in Distribution Network	%	7.83%	7.83%
Supply/ Consumption of thermal energy	MWh	283,669	277,471