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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

/Draft for Public Consultation/

Pristina, September 2023



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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 2023/2024 have been considered the following:

- Information provided by DH Termokos in its tariff application for heating season 2023/2024;
- 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 2022/2023 and in the previous seasons.

Procedure of tariff review process:

- **1 June 2023** –ERO issued a notice letter on commencement of tariff review for DH Termokos for heating season 2023/2024; this was followed by ERO's request for data and information, sent on 02 June 2023, which described in detail the data and information that DH Termokos should submit for the tariff review, as well as the Plan and Schedule;
- **22 June 2023** –DH Termokos submitted by e-mail the tariff application for 2022/2023 season with the data and information required for tariff review;
- **28 July 2023** –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;
- **9 August 2023** –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 2023/2024 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 the provision of services, 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 costs 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.

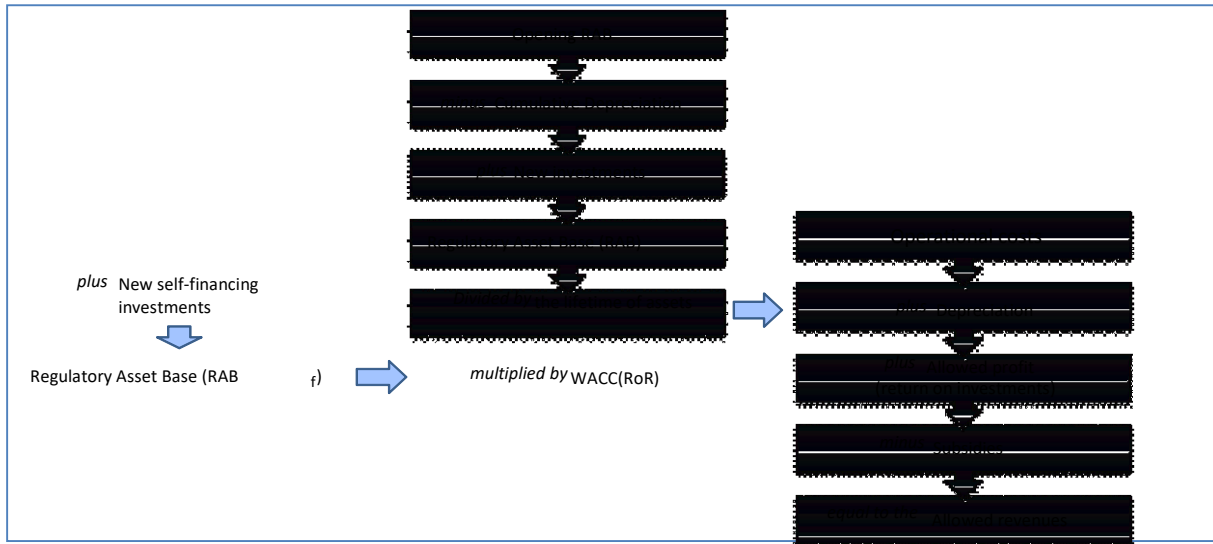


Figure 1: Allowed Revenues Calculation Scheme

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 joint 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 2022/23 (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 2023/2024, 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 2022/2023;
- 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 2023 – 14 October 2024. While as support documents it has submitted: i) Audit Report, as well as statutory and financial statements for 2022; 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 2023/2024 season iv) planning for new connections for 2023/2024 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 2023/2024, based on realizations - consumption metering and heating area of customers in the previous season 2022/2023, 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 season 2023/2024.

3.1 Evaluation and determination of allowed operational costs

The planning for operational costs submitted by DH Termokos for the period 15 October 2023 - 14 October 2024, 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 the ones allowed by ERO (in €)

Operational costs - 2023/2024 season		Proposed by DH Termokos	Allowed by ERO
Variable costs			
1	Own generation	490,904	0
2	Energy purchase from cogeneration – variable comp.	499,797	499,797
3	Water treatment chemicals	72,800	72,800
4	Water	64,000	64,000
5	Electricity (prod. & subst. distr.)	835,000	835,000
6	Personnel cost (direct labour)	1,423,643	1,085,637
7	Annual licensing tax	0	0
8	Allowed bad debt	434,844	434,844
9	Other variables	143,716	0
10	Total variable costs	3,964,704	2,992,078
Fixed costs			
11	Materials, services	90,000	90,000
12	Repair and maintenance	134,300	134,300
13	Energy purchases from cogeneration-fixed comp.	1,086,993	1,086,993
14	Administration expenses	156,000	156,000
15	Personnel expenses (different from direct labour)	1,458,517	972,023
16	Sales and other administrative costs	210,443	210,443
17	Total fixed costs	3,136,253	2,649,759
18	Total operational costs	7,100,957	5,641,837

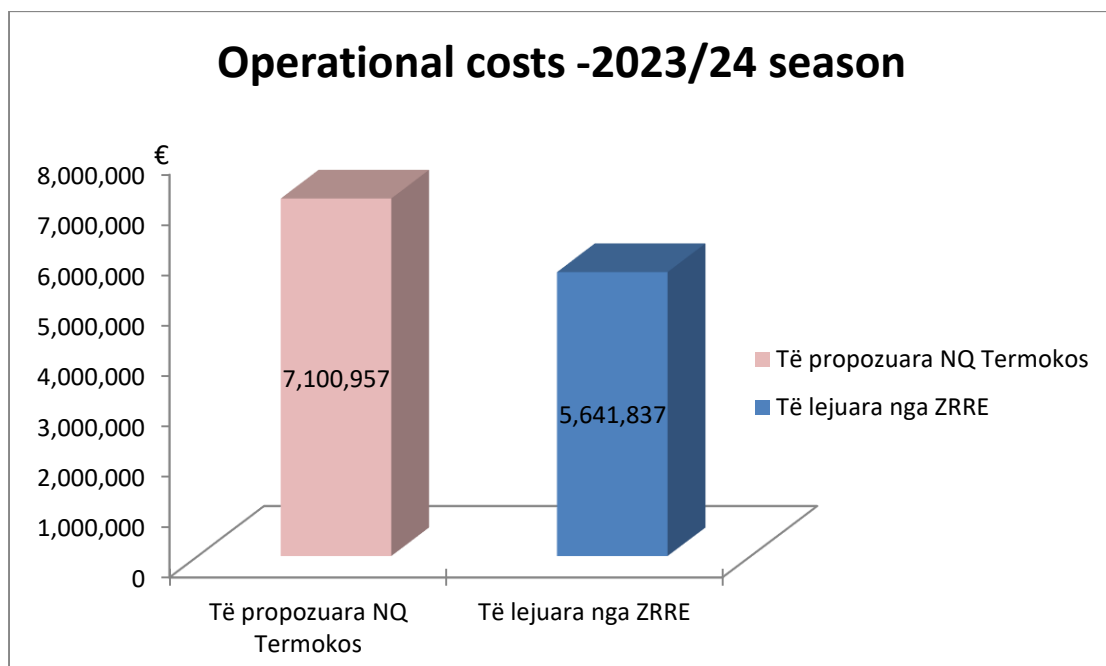
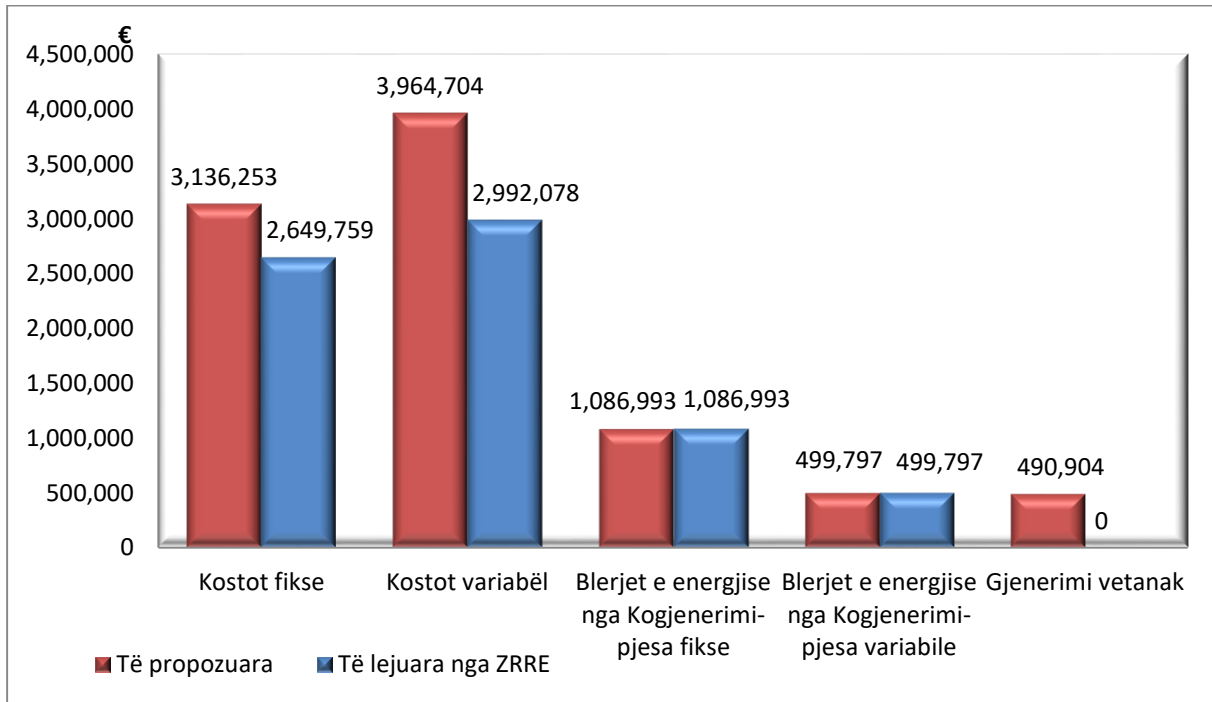




Figure 2: Schematic presentation of operational costs proposed by DH Termokos and allowed by ERO for the heating season 2023/2024

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 1,586,790 €. 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.

More 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: 465,565 €, and
 - Payment component for annual licensing tax: 34,232 €.



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 **499,797 €** which is allowed for 2023/2024 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 **1,586,790 €**.
- **Fuel cost – heavy fuel oil:**
 - The cost of heavy fuel oil proposed by Termokos in the amount of 490,904 € is based on the estimated amount of heavy fuel oil consumption of 700 ton and the purchase price of 701 €/ton as well as the cost of € 300 for oil used for preserving boilers and the cost for heavy fuel oil quality analysis in the amount of 3,423€;
 - Evaluation –Upon the functioning of cogeneration project, the boilers of thermal energy production with heavy fuel oil 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.
 - The process for issuing the environmental permit: i) on 09.08.2022, DH Termokos submitted the application for Environmental Permit and the required documents; ii) on 11.05.2023 supplemented the documentation where among others also send the Report on Measurements and Emissions of Gas and Dust; iii) currently the application is under review and there is no final decision on issuance of the Environmental Permit.
 - Based on what was stated above, due to the lack of the Environmental Permit which so far has not been issued by the relevant ministry, ERO was not able to extend the license for production of thermal energy from heavy fuel oil power plant.

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 64,000 € for the estimated amount of water consumption for replenishment of thermal energy distribution 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 2022/2023 season, the realized cost of water was 76,124 €. Also, the evaluations have taken into account the forecast amount of water for replenishment of primary distribution network and substations as well as the reduction of quantitative water losses (in m³) due to the realization of projects for the rehabilitation of the network and substations. In this sense, ERO accepts the proposed water cost of **€64,000**.

- **Cost of water treatment chemicals**
 - DH Termokos has proposed the cost of water treatment chemicals in the amount of €72,800, which is a significantly higher cost than the cost realized in the previous season. The increase in this cost is related to the current KfW project that also includes the chemical water treatment plant.
 - Evaluation- considering the amount of water that shall be treated, water flows (losses) and especially the needs for these chemicals for water softening in the new plant that is being implemented, ERO accepts the proposed value of **€72,800**.

- **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 electricity price, the number of substations due to the increase of customer base, namely the increase of heating area and new equipment. It is also planned to put into operation the fifth pump of the distribution network with a power of 315kW as well as the third pump of the co-generation system with a power of 950kW, which will obviously affect the increase in electricity consumption.
 - Evaluation –ERO recognizes the presented cost of electricity in the value of **835,000 €** 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 the personnel cost - "direct labour", in the amount of €1,423,634. This is a significantly higher value (by 13.5%), than the realization in the last season 2022/2023 (€1,254,322). If we refer to the total personnel cost, a significant difference is also observed between the value of this cost in the planned Regulatory Statements (total personnel cost: €2,882,160) and in the statutory financial statements for the calendar year 2022 (€2,468,058) ;so it is an increase of over



€400,000 or approximately 17%. For this forecast, ERO, in the written comments, has requested details for the calculation of this cost, namely the number of workers, the average salary and other elements of the personnel cost, such as contributions/taxes, etc., and has also requested relevant explanations and justifications for the anticipated increase. After our comments, DH Termokos has provided some missing details and a short explanation, where it is stated that the staff cost planning was based on the staff cost of 2022 and with a projected increase in 2023, mainly due to inflation. In this regard, it shall be noted that also in the realizations of this cost in the last season 2022/'23, a significant over-realization of this cost was found in relation to the relevant allowances - specifically for the cost of personnel directly engaged in production and distribution over- the realization was 27%, which is an unjustifiable excess in relation to the allowance.

- Evaluation - ERO evaluates that the proposal of this cost is accompanied by few relevant details and explanations and that the reasonableness of the proposed increase is not based on real facts. Taking this into account and considering inflation in the period 2022-2023, ERO allows an increase of 9.65% from what was allowed in the previous tariff review 2022/2023; the determined percentage reflects the average rate of inflation in the country for the period January 2022 - July 2023 according to KSA¹.
- Based on what was stated above, ERO allows the Personnel Cost – ‘Direct Labour’ in the amount of 1,085,637€.

- **Other variable costs, bad debt cost and annual licensing tax**

- Under the category of other variable costs DH Termokos presented the cost of “loan interest expense” in the amount of 143,716 €.
- Evaluation - In line with the provisions of Thermal Energy Pricing Rule, the loan interest expense is handled in the return on invested assets, where through WACC and value of RAB (see ERO Report on allowed revenues) is determined the Return on Assets; consequently, this cost is not allowed in this category.

Whereas the bad debt cost is calculated as a reasonable share in the revenues of the enterprise (i.e the value of billing from the sale of heat). “This “reasonable share” shall be set in such a manner to incentivize the enterprise to make more efforts in increasing the level of collection of payments from customers, however take into account that an objectively amount cannot be collected, therefore it will remain as a debt which cannot be realized. Based on what was said above, ERO considers that the level of bad debt of 5% is justifiable therefore allows the **bad debt cost** in the amount of **434,844 €**. With regards to the licensing tax, it shall be emphasized that due to the fact the license for thermal energy generation from heavy fuel oil power plants was not extended, the enterprise as such is not charged with this tax.

Based on what was said above, it results that **Variable Costs**, allowed by ERO were set in the amount of **2,992,078€**.

Fixed costs

¹ Kosovo Statistics Agency – Publication: Harmonized Index of Prices, July 2023



- **Cost: Repairs and Maintenance**
 - DH Termokos, for the cost of maintenance and repairs has planned an amount of 134,300€ - 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 **134,300 €**.

- **Cost: Materials and Services**
 - For this category, from DH Termokos is proposed the value of 90,000 €;
 - 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 **90,000 €**.

- **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: 52,184 MWh_{EL}/h and the respective pre-calculated charge (price): 20.83 €/MWh_{EL}/h, which is the actual price for reserved electric capacity, according to thermal energy supply agreement KEK – Termokos;
 - 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 **1,086,993 €**;

- **Administration costs:**
 - DH Termokos proposed administration cost in the amount of 156,500 € providing respective details. The proposed value is for 28,271 € higher than the realized value in the previous period (128,229 €); this increase was planned to cover additional expenses as a result of the increase of customer service related expenses, where there is a considerable increase of the number of customers.
 - 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 **156,500€**.

- **Personnel cost (different from “direct labour”)**
 - For the cost of administration personnel and other support services, DH Termokos has proposed the value of €1,458,517 - a proposal higher by about 12% compared to the realization of this cost in the previous season (€1,303,420). If we refer to the total personnel cost, a significant difference is also observed between the value of this cost in the planned Regulatory Statements (total personnel cost: €2,882,160) and in the statutory financial statements for the calendar year 2022 (€2,468,058); so it is an increase of over €400,000 or



approximately 17%. For this forecast, ERO, in the written comments, has requested details for the calculation of this cost, such as provision of the number of workers, the average salary and other elements of the personnel cost, such as contributions/taxes, etc., and has also requested relevant explanations and justifications for the anticipated increase. Following the comments of ERO, DH Termokos has provided some missing details and a short explanation, where it is stated that the staff cost planning was based on the staff cost of 2022 and with a projected increase in 2023, mainly due to inflation. In this regard, it should be noted that also in the realization of this cost in the last season 2022/'23, a significant over-realization of this cost was found in relation to the relevant allowances - specifically for the cost of personnel engaged in management, administration and other services of the enterprise, the over-realization was 47%, which is an unjustifiable excess compared to what was allowed.

- Evaluation –ERO evaluates that the proposal of this cost was accompanied with little details and relevant explanations and that the justification of the proposed increase was not based on real facts. Taking this into account, as well as the inflation in the period 2022-2023, ERO allows an increase of 9.65% compared to what was allowed in the previous tariff review 2022/2023; the set percentage reflects the average inflation rate in the country for the period January 2022 – July 2023, according to KSA².

Based on what was said above, ERO allows Personnel Cost – ‘Direct Labour’ in the amount of **972,023€**.

- **Sales and other administrative costs**

This cost was initially proposed by DH Termokos in the amount of €223,635; from the details provided, it has been noted that under this position the sub-component "Tax profit expenses" in the amount of €13,192 is included. In the comments of the ERO, it is noted that the profit, including the profit tax, based on the tariff methodology, is addressed in the Allowed Return, which is calculated based on the Regulatory Asset Base with a reasonable rate of return according to the Weighted Average of Cost of Capital (WACC). Therefore, this sub-component cannot be included in ‘Sales and other administrative costs’. In the re-submission of the improved application, DH Termokos has deducted the value of €13,192 of the above-mentioned component according to our comments, and the re-proposed amount is €210,443.

- Evaluation –Based on the provided details and the improvement according to ERO comments as described above, ERO allows the re-presented value of **210,443 €** for ‘Sales and other administrative costs’.

From what was stated above, it results that **Fixed Costs** recognized/allowed by ERO are determined in the amount of **2,649,759 €**.

Total allowed operational costs for 2023/2024 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

² Kosovo Statistics Agency – Publication: Harmonize Index of Prices, korrik 2023



From the formula it is calculated that:

Allowed operational costs are in the amount of **5,641,837 €**

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 (RABnstart)

RAB_n^{start} represents the initial basis for the determination of RAB planned for 'n'- 2023/24 season, which, as emphasized above, is actually the ending RAB, executed in the previous season 'n-1'- 2022/23.

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 2022/2023 season) the realized values are concluded, from which the final RAB realized in season 'n-1' – 2022/23 in an amount of **63,265,590 €** is calculated, which at the same time represents the starting RAB for 'n' -2023/24 season.

3.2.2 Determination of allowed new investments

Regarding the new investments planned for the tariff review period: October 2023 - October 2024, it should first be noted that these investments mainly belong to the continuation of the rehabilitation of the network of substations and the expansion of the network of new substations, as well as the installation of thermal energy meters at apartment level; also the projects for new plants are planned – The plant for the production of thermal energy from solar energy (KfW-EU-EBRD Project: 'Solar4Kosova') and plants for doubling the co-generation capacity (EU-EIB Project); DH Termokos presented the total value of **planned new investments €27,212,511**; this amount includes investments from donations and self-financed investments.



Investments from donations

Investments within the projects of international donors such as KfW, EBRD, EIB and MCC are presented in the total value of **23,638,511 €** - therefore these projects are planned in majority to be funded by donations **15,384,372 €** and co-financing in the amount of **8,254,139 €** - 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 to be realized in 2021; this project includes these components:
 - 1) Rehabilitation/modernization of 235 existing substations, installation of 333 new substations, 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 and chemical treatment of water in the primary distribution network and installation of SCADA; contract value after additions €8.4 million.
 - 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; value of the contract after additions €7.6 million;

Preliminary details have been given for the above-mentioned components, where it should be mentioned that both components are currently being implemented - specifically: Construction of 2 heating tanks; pressure retention and chemical water treatment systems; as well as the expansion of the heating network in other areas of the city.

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 €6,754,139 will be carried out. It should be noted that in this amount DH Termokos has included the value for the execution of works €6,541,724 and the value €212,414 for consultancy services.

It should also be noted that the entire above-mentioned amount will be financed by DH Termokos as co-financing, which means that no donation is foreseen for this project in this tariff review period.

- **MCC Project:** Installation of thermal energy meters - This project was expected to be worth \$10.9 million, as a donation from MCC - USA, while with the transition to the "Prishtina Heat Save" project, €2 million was added to this amount by the Municipality of Pristina and 1 mil. € financing from DH Termokos. The initial contract for the purchase and installation of equipment granted in April 2022 was €6,905,850; while currently the contract with additions is worth €9,315,170.

In fact, in the accompanying explanations, DH Termokos has presented the total value of the project after additions of €11,688,551, divided into:

- Contract for the purchase of services in the amount of : 9,315,170 €; and
- Contract for consultancy services: 2,373,381 €

In this regard, it should be noted that only contracts for the purchase and installation of equipment will be taken into account in ERO evaluations.

This project has included the installation of thermal energy meters and thermostatic valves in over 300 collective housing buildings within the service area of DH Termokos, respectively about 14,000 domestic and commercial customers; Specifically, the project in question, after additions, contains the following main components:



- Installation of about 64,000 heat allocators and about 5,100 individual thermal energy meters;
- Installation of 85,500 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 thermal energy consumption reading system and billing based on the measured consumption, which includes software, and remote communication devices between the software and the measuring devices - data recording and control devices;
- Circulating pumps, balancing valves and pressure control valves;
- Assistance in improving billing services based on metered consumption.

Following our comments, DH Termokos has also provided the details of all the equipment, where the amounts of the equipment and the relevant monetary values are presented separately. Their amount is €8,791,731, which does not match the presented contract value of €9,315,170. Following are the project equipment details:

<u>Name</u>	<u>Amount [piece]</u>	<u>Amount after additions [piece]</u>	<u>Value after add. [€]</u>
<u>Metering equipment and billing/reading system</u>			
Allocators (HCA)	64,000	64,000	1,651,200
Individual meters	5,100	5,100	953,547
Reg. and cont. equipment.	1,100	2,871	895,417
Comp. sys. of reading/billing	1	1	735,446
Subtotal			4,235,610
<u>Thermal substations equipment</u>			
Circulating pumps	110	337	346,826
Balancing valves	70	70	12,527
Pressure regulating valves	105	1,670	304,254
Subtotal			663,607
Thermostatic valves	70,000	85,500	3,892,513
Total			8,791,731

Following our comments, based on the total realized value of the project according to the payments made, for this tariff review period, DH Termokos submitted the entire remaining unrealized (unpaid) value only of the contract for the purchase and installation of the equipment – therefore €1,384,372, as a donation for this project.

- **KfW Project ‘Solar4Kosova’**: The project initiated within the cooperation of our Government with the EU, KfW and EBRD, for the production of thermal energy from solar energy, with an estimated investment value of about 80.5 million. €. This project is planned to be financed in a combination of grant-loan-co-financing as follows:
 - EBRD: loan 22 mil. €;
 - KfW: loan 21.6 mil. €;
 - KfW: grant 10 mil. €;
 - European Commission: grant 22.5 mil. €; dhe
 - Termokos: Co-financing 4.4 mil. €.



This project foresees the installation of solar panels for water heating in an area of 58.000 m², with a thermal capacity of 50 MW, and the construction of a heating energy tank with a capacity of 400.000 m³. With the realization of this project, it is planned the connection of about 12.000 new customers to the heating network in the "Arbëria" and "Tophane" neighborhoods.

Regarding the developments for this project, DH Termokos has sent the additional explanations, where it is emphasized that: The Feasibility Study and ESIE (Environmental and Social Impact Evaluation), worked by CES-iC and financed by KFW, have been completed. The location in the Hade e Re area of 25 ha of land has been defined and approved for the installation of solar panels and the heating tank.

Preparatory works that are being carried out are: Preparation of documentation for Environmental Permit, preparation of documentation for expropriation, clarification of ownership for the solar plant between the Municipality of Pristina and Obiliq).

Currently, the selection of the consulting company is in process, whose task is to prepare the terms of reference for the tender, announce the tender for contractors and select the contractor company. It is planned that in the months of September-October 2023, the consultancy for this project will be chosen. While there are real expectations that the contractor for the execution of the works will be selected in the second half of 2024, upon which the works will also begin.

DH Termokos, for the tariff review period 2023/'24, has presented the planned realization value in the amount of **€10 million**, which is dedicated to the preparatory and design works as well as the commencement of works, in which case various payments shall also be made including advances.

- **EU-EIB Project** for the doubling of thermal energy extraction capacities from the co-generation system: this project is in the initial study phase within the IPA supported by the EU and the EIB (European Investment Bank in cooperation and co-financing with the Municipality of Pristina and DH Termokos); the total investment value for the extraction capacity plants is expected to be around €26.5 million. However, in the medium term, as a complete project that also includes network expansion, it is planned to have a total investment value of around €50 million; for covering this part of the investment, it is expected that donors or other financiers with favorable conditions will be found in the future.

This project is currently supported by the European Commission with € 17.5 million grant (committed), European Investment Bank (EIB) with €1.5 million for a feasibility study, as well as the Municipality of Pristina with €5 million and Termokos with €2.5 million. €, as co-financier of the project.

Regarding the development of the project, according to the accompanying explanations from DH Termokos, the Feasibility Study and the Decarbonization Plan are currently being completed, by the international consulting company the "ERI-ITA" consortium, and the preparation of the conceptual design has begun.

For the tariff review period 2023/'24, DH Termokos presented the value of €4 million that is planned to be realized mainly for the design and preparatory works, as well as for the commencement of the execution of works within the project.



Self-financing Investments

As mentioned above, DH Termokos also plans self-financed investments, where it has presented self-financed investments in a total value of **€11,828,139**; from these:

- co-financing within investment projects from donors: 8,254,139 €;
- investments of individual projects: 3,574,000 €.

Self-financed investments of individual projects are divided according to the functional units of the enterprise in production, distribution and joint investments, as well as co-financing in donor projects details as follows:

- **Production** –The co-generation facilities and equipment planned for a total value of €731,000 for the period 2023/24. In the planning of investment in production, the equipment of the plants of the thermal energy extraction and reception stations (HES and HRC – an integral part of the co-generation system), as well as other equipment such as electromotor pumps, heat exchangers are included.
- **Distribution**- Rehabilitation and repair of the distribution network and thermal substations in a total value of €340,000, which includes pipes and fittings and other related equipment, heat meters, circulating pumps, equipment of the pressure retention system, terrain vehicles and excavators, etc.
- **Administration and joint services** –in a total value of €2,503,000 which include: Construction of the Directorate and Administration Building in the amount of €2,433,000; and computer equipment and software licenses worth €70,000.
- **Co-financing in donor projects** in a total amount of **8,254,139 €**, which includes the co-financing for:
 - Current project of KfW: Rehabilitation and expansion of the distribution network and new substations, where the value of 6,754,139€ was presented;
 - The MCC project for the installation of heating meters, the value of co-financing is planned to be 1 million. €; and
 - The EU-EIB project of doubling co-generation capacities is planned for a co-financing 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.

Concretely:

- **MCC Project** - Regarding this project, it should first be noted that in the previous tariff review 2022/'23, ERO has recognized the amount of €4,143,510; taking into account the issues related to the ownership of the assets - specifically the legal obligation of the enterprise for the



installation and ownership of the metering devices, the investment value was recognized only for the metering devices and the computer system of meter reading and billing based on the metered consumption, as well as the devices and related instruments. During the monitoring of the realization of these investments, it has been concluded that this component has been realized completely, €4,286,579, that is, with a small over-realization, which has been recognized and will be corrected in this tariff review.

However, in this tariff review, DH Termokos within the framework of this project has presented the additional investment value of €1,384,372, where all equipment is included. For this reason, ERO, in its comments, requested additional details for each group of devices, which details were then sent by DH Termokos (presented on pg. 17). In this breakdown according to equipment groups, it is calculated that the value of the metering devices, the reading/billing system and the data recording and control instruments is €4,235,610 - approximately the realized amount ascertained in the Monitoring Report for the last season 2022/' 23. So for this grouping of equipment, no additional investment is observed which should be recognized for this tariff review. Whereas, since thermostatic valves are considered as customer assets, as in the previous tariff review, they have not been recognized as new investments.

In the detailed information on page 17 is shown the grouping of thermal substation equipment in the amount of € 663,607; taking into account the impact on the efficient operation of the system and the saving of thermal energy, ERO recognizes the value of the purchase and installation of these devices as a new investment planned for the 2023/'24 season - € 663,607. It is worth re-emphasizing that the updates - corrections will be made according to the ascertained realizations of the investment and the actual registration of these assets in the list of the company's assets.

- **KfW Project 'Solar4Kosova'** –DH Termokos, for the tariff review period 2023/'24, has presented the planned realization value in the amount of €10 million, which is dedicated to the preparatory and design works as well as the commencement of the works, in which case various payments must also be made including advances.

In evaluating the plans for this project, we refer to the current status of this project described in detail above (see page. 18), which is in the preparatory and tendering phase for the selection of the consulting company, which is expected to be finalized in September-October 2023. The consulting company will further prepare the tender specification and lead the selection process of the company for the execution of the works - it is planned that the selection process of the leader of the works will be finalized at the beginning of the second half of 2024, upon which, the execution of works shall also begin.

Taking into account the current status of the project and the relevant plans for the completion of the preparatory phase and the commencement of works, ERO evaluates that the proposed amount of €10 million for the tariff review period does not really reflect these plans, both in terms of duration and volume of work that can be carried out in this period. It should also be reiterated that the dedication of funds for the investment of preparatory and design work is not necessarily considered a specific investment in assets. Based on these evaluations, ERO for this period does not recognize the value presented for this investment project; ERO evaluates that the amount of **2.5 mil.€** reflects a more realistic planning referring to the current status of the project and forecasts for the completion of the preparatory phase and the commencement of works, and recognizes this amount as a new investment for the tariff review period 2023/'24.

- **EU-EIB Project** for the doubling of thermal energy extraction capacities from the co-generation system - for this project DH Termokos presented the value of 4 mil. € that is planned to be



realized in the tariff review period 2023/'24; these tools are provided for the feasibility study and the decarbonization plan, preparatory and design works, and for the commencement of the realization of the works.

Referring to the current status of the project (see page 17-18) – the study phase is in progress, while the preparatory and design phase has begun, ERO evaluates the company's planning as unrealistic, taking into account the usual duration of the preparatory and design phase until execution of works. Therefore, ERO for this tariff review period recognizes the value of **€1 million** 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 value of **€4,163,607**.

New self-financing investments

- **Co-financing investments in donors' projects**

NQ Termokos presented a total amount of €8,254,139 as co-financing for donor projects, as follows:

- **Current project of KfW:** Rehabilitation and expansion of the distribution network and new substations, for which the sum of € 6,754,139 has been presented. This amount is divided into 2 components:
 - T1: Thermal substations, heating tanks, as well as water treatment and pressure maintenance systems in the amount of €5,171.61;
 - T2: Rehabilitation and expansion of the distribution network in the amount of €1,370,053; and
 - Consultancy services in the amount of 212,415 €.

This project, which started to be realized 2 years ago, has had significant additions from the initial estimated value of the project. The additions to the project are mainly due to the addition of works for further expansion of the network in the 5 districts of the city, which also include new substations, and also for works on heating tanks and water treatment and pressure maintenance systems. After the amount planned as a donation has been spent, DH Termokos in cooperation with donors have agreed to continue additional works with co-financing from DH Termokos.

Regarding investment plans and additions, specifically as follows:

- The initial planning of the project in the preparatory phase of the project was about € 14 mil., much of which was included in the Development Plan 2019-2029 approved by ERO;
- In the updated Development Plan 2022-2031, also approved by ERO, the planned amount of investment was € 16 million;
- While currently in this tariff review with the additions to the works within this investment project, the planned amount of investment has reached about €19 million.

Given that the last additions were not presented in the Development Plan, namely, they were not presented for updating the plan, ERO has requested detailed explanations and relevant documents to prove the technical and financial reasonability of these investment additions. DH Termokos submitted some of the explanations and details, but which did not include all the required documents and analysis, and especially the cost-benefit analysis as well as the technical and financial reasonability on the basis of which it was decided for the additional works of this investment project.



Based on what was stated above, ERO will refer to the planned investment value in the updated Development Plan 2022-2031 of €16 million. From this amount, it will deduct the realizations of this investment project in the values found in the Monitoring Reports for the previous periods 2021/2022 and 2022/2023, in a total value of €12,618,376. Therefore, the remaining value of **€3,381,624** is recognized for the tariff review period 2023/2024.

- **MCC Project:** Installation of thermal energy meters - for this project DH Termokos presented the amount of co-financing of €1 mil., for which proposal it gave a brief explanation that this planned amount will be used for the purchase and installation of thermal energy meters in addition to the current project.

DH Termokos has not provided any information or other data for this proposal of its own additional investment, such as the number of meters, the number of buildings, namely customers, the number and location of other buildings, details that are necessary for a meritorious evaluation of the proposed investment.

It has also not been clarified whether this investment will be within the current contract for the purchase and installation of heating meters. In this aspect, it is also necessary to re-emphasize the discrepancy, namely the difference between the presented value of the contract and the amount calculated from the presentation of the details (see page. 17), which causes confusion if this co-financing is calculated in the current contract.

From what was said above, due to these ambiguities and in the absence of basic data and information, ERO does not recognize this co-financing for this tariff review.

DH Termokos must provide real data and information for this addition to the project or as a new project, depending on how it will be conceived, and propose it in the regular update of the Development Plan. These are the basic prerequisites for a project/addition of the project to be recognized in the tariff review.

- **EU-EIB Project.** for the doubling of thermal energy extraction capacities from the co-generation system - for this project DH Termokos presented the value of €500,000 as a co-investment, while for this co-financing plan it did not specifically present any data or information.

From what was stated above (page. 17 and 18) about the current status of this project, ERO evaluates that this proposal for co-financing is premature and therefore does not recognize the amount proposed for the one-year period of this tariff review.

From what was described above, for this tariff review, ERO allows the amount of **€3,381,624** as co-financing for donor projects.

- **Investments with self-financing of individual projects**

First of all, it should be emphasized that the investments presented by DH Termokos are mainly in line 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 concluded that the realization of self-financed investments was below the planning - 61.57%. 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 evaluations are presented:

- **Investments in thermal energy production plants** –for the tariff review period 2023/'24 have been proposed by DH Termokos in the total value of €731,000, where they are mainly investments in co-generation facilities and equipment. In the planning of investments in production, the equipment of the plants of the thermal energy extraction and reception stations (HES and HRC – an integral part of the co-generation system) are included, as well as other equipment such as electromotive pumps, heat exchangers and other equipment.

The planned investments in thermal energy co-generation plants - HES and HRS, are within the framework of regular investments to maintain the level of co-generation operation and ensure quality supply of thermal energy. Consequently, ERO allows the proposed amount of **€731,000** for investments in facilities of thermal energy production from co-generation.

- **Investments in distribution network**–DH Termokos for the tariff review period has proposed the amount of €340,000, for investment in the distribution network and thermal substations, which includes pipes and fittings and other related equipment, heat meters, circulating pumps, equipment of the pressure maintenance system, terrain vehicles and excavators, etc.

It is evaluated that these investments are necessary to ensure safe operation and improvement of services. As such, ERO recognizes the investments in the distribution network in the presented value of **€340,000**.

- **Investments in administration and joint services** – DH Termokos has proposed investments in the total value of 1,503,000 € which are divided into:
 - Investments for construction of the administration building and directorate in the amount of 2,433,000 €; and
 - Investments in equipment and computer programmes in the amount of 70,000 €.

For the progress of the investment in the administration building, an explanation was provided, showing that after the decision of the PRB, this project was re-tendered in March 2023 and after the re-evaluation at the end of July this year, the contract was signed with the selected operator; according to the contract, the duration for the execution of the works is 18 (eighteen) months, which means that the deadline for the completion of the construction is February 2025.

In relation to this investment, it should be noted that continuously from season to season there is an increase in the estimated value for the construction of the facility from the initial value that has now reached €2,443,000.

As for the realization of this investment, it must be emphasized that, for the past several seasons consecutively, funds were allowed for this investment, but there was no realization due to delays in the preparation and development of the project. Specifically, in the tariff review for the previous season 2022/'23, ERO allowed the value of €482,000, which was not realized at all during this period due to delays in the tendering process.

Taking into account what was said above, ERO decides to pass through the allowed investment amount in the previous review of €482,000 to the current tariff review for the 2023/2024 season.



Therefore, for this one-year tariff review period, it allows the investment value for the construction of the new facility in the amount of **€482,000**.

Within new investments with information technology equipment, ERO recognizes the proposed amount of **€70,000**.

Referring to these evaluations for investments in administration and joint services, ERO recognizes the value of **€552,000**.

Based on what was stated above, the self-financing investments of individual projects of DH Termokos are determined at **€1,623,000**.

Considering the 2 components of new investments with self-financing: co-financing in donor projects **€3,381,624** and investments with self-financing of individual projects **€1,623,000**, the total allowed value of new investments with self-financing of **€5,004,624** is calculated.

The total value of the allowed new investments and the division according to the financing method:

Based on the evaluations presented above, the ERO recognizes or allows the new investments planned for the tariff review period (October 2022 - October 2023) in a total amount of **€9,168,231**.

Referring to the financing details described above, the division of allowed new investments according to the financing method is as follows:

- (Allowed new investments)_{DONATION} = 4,163,607 €; and
- (Allowed new investments)_{SELF-FINANCING} = 5,004,624 €.

3.2.3 Determination of Working Capital

According to the relevant provisions of the Thermal Energy Pricing Rule - Annex 2, working capital is usually determined to allow working capital for a period not longer than one month, respectively the value of average monthly income. Therefore, ERO determines the ratio 1/12 in the revenues from the sale of heat realized in the previous 2021/2022 – €8,696,879, and allows **working capital** in the amount of **€724,740**.

3.2.4 Annual depreciation of assets – realized in season 2022/23 ('n-1')

The annual depreciation realized in the season 'n-1' - 2022/23 is calculated based on the Regulatory Asset Base (RAB) realized in that season and the weighted average depreciation rate; more specifically, from the value of RAB realized in 2022/23 (€63,265,590) the value of realized working capital (€623,924) is subtracted, and the obtained amount (€62,641,666) is multiplied by the weighted average depreciation rate (3.22%). Therefore, **the annual depreciation realized in the season 2022/23** in the amount of **€2,018,555** is calculated.

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 2023/2024

Regulatory Asset Base (RAB) - DH TERMOKOS Heating season 2023-2024		Allowed by ERO [€]
3.2.1	Starting Regulatory Asset Base (RAB _n ^{start})	63,265,590
3.2.2	New investments (INV _n)	9,168,231
3.2.3	Working Capital (WC _n)	724,740
3.2.4	Annual Depreciation of Assets – realized in season 2022/23 (DEP _{n-1})	-2,018,555
3.2.5	Assets Disposals – in season 2022/23 (DIS _{n-1})	0
Regulatory Asset Base (RAB)		71,140,006

In relation to 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 2023/2024

Regulatory Base of self-financed assets (RAB _f)- DH TERMOKOS Heating season 2023-2024		Allowed by ERO [€]
3.2.1	Regulatory Asset Base of self-financed assets- starting (RAB _{f-n} ^{start})	12,960,802
3.2.2	New investments (self-financed- without donations) (INV _{f-n})	5,004,624
3.2.3	Working Capital (WC _n)	724,740
3.2.4	Annual Depreciation of self-financed assets- realized in season 2021/22 (DEP _{f-n-1})	-352,482
3.2.5	Disposal of self-financed assets –in season 2021/22 (DIS _{n-1})	0
Regulatory Base of Self-financed Assets (RAB_f)		18,337,684

3.3 Evaluation and Determination of Annual Depreciation for the season 2023/2024

The Determination of Annual Depreciation for the season 2023/24 ('n') is based on the total RAB value determined in table 2 (chapter '3.2') and in the weighted average 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) Weighted Average Depreciation Rate

Depreciation Rate/ Weighted Average Depreciation Rate- New Investments				
Land	Assets Lifespan	Years	N/A	
	Depreciation Rate	%	0	
Buildings	Assets Lifespan	Years	35	
	Depreciation Rate	%	2.86%	
Plants, electro-mechanical installations and equipment	Assets Lifespan	Years	25	
	Depreciation Rate	%	4.00%	
Grid – Pipes, fitting and integral equipment	Assets Lifespan	Years	35	
	Depreciation Rate	%	2.86%	
IT equipment, Cont. syst. equipment., and office mini inventory	Assets Lifespan	Years	5	
	Norma e Zhvlerësimit	%	20.00%	
Total new investments	Assets Lifespan	Years	N/A	
	Weighted Average Depreciation Rate	%	2.86%	
	Total New Investments	Euro	9,168,231	
Weighted Average Depreciation Rate (Existing Operational Assets + New Investments)			%	3.26%

As it can be seen from the table above, the weighted average depreciation rate (DR_{WA}) is calculated 3.26%. Based on the total value (RAB minus Working Capital) and weighted average depreciation rate, the annual allowed depreciation is calculated, as follows: **€2,293,501**

Allowed annual depreciation (DEP_n) = (Total RAB - WC_n) * NZH_{MP} = 70,415,266 € * 3.26 % = 2,293,501 €

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:

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

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:

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 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:

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

Calculation of Allowed Return on RAB_f 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:

$$\text{RET} = \text{RoR} \times \text{RAB}_f$$

Therefore, the Allowed Return on RAB_f is equal to 18,337,683€ * 8.30% = 1,521,335 €.

Table 5: Allowed return (Allowed profit) in RAB_f for the heating season 2023/2024

Allowed Return in RAB _f for DH Termokos		Allowed by ERO [€]
RAB _f	Regulatory Asset Base – self-financed	18,337,683
RoR	Rate of Return at WACC level	8.30%
	Allowed Return in RAB _f	1,521,335

3.5 Determination of the cost of network losses

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 2023/2024, through which it determined the amount of network losses of **33,617 MWh**, being the amount of transmission network losses TPP Kosova B- DH Termokos (6,847 MWh) and the amount of distribution network losses (26,770 MWh). Expressed in percentage, the total share of network losses is 10.0%- the share of transmission network losses 2.0% and share of distribution network losses 8.0%. 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 334,620 MWh MWh.

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

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 taken place 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 2022/23 is calculated: **-89,104 €**. Therefore, this value is deducted from the value of allowed revenues for season 2023/24.

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 **5,341,247 €**)

Consequently, the value of MAR is equal to **9,712,940 €** as presented in detail in Table 6.

Table 6: Allowed Revenues for DH Termokos for heating season 2023-2024

Allowed Revenues DH Termokos for the season 2023/2024		Allowed by ERO [€]
OC	Allowed Operational Costs (net)	5,341,247
DEP	Annual Depreciation	2,293,501
RTN	Allowed Return on RAB _f	1,521,335
LOS	Allowed Cost of Losses	300,590
ADJ	Adjustment- the difference between allowance and realizations	-89,104
MAR	Maximum Allowed Revenues	9,367,568



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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 2023/2024 is as follows:

Fixed part of Maximum Allowed Revenues (MAR_F) **1,405,135 €;** and
Variable part of Maximum Allowed Revenues (MAR_V) **7,962,433 €.**

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 2023/2024 in tabular and graphical form are presented below:

Table 7: Summary of Thermal Energy Balance

Thermal Energy Balance – DH Termokos season. 2023/2024		Proposed by DH Termokos	Allowed by ERO
Thermal Energy Gross Production	MWh	6,675	0
Gross purchase of thermal energy (entry in Trans. Net.)	MWh	342,327	342,327
Net Purchases of Thermal Energy. (Exit from Trans. Net.)	MWh	335,480	335,480
Amount of losses in transmission network	MWh	6,847	6,847
Share of losses in transmission network	%	2.00%	2.00%
Gross production + Gross purchases of Thermal Energy	MWh	349,002	342,327
Amount of Losses in Trans. Net + Own-consumption	MWh	7,707	7,707
Net production + Net purchases of thermal energy (Entry in Dist. Net.)	MWh	341,295	334,620
Amount of losses in Distribution Network	MWh	27,304	26,770
Share of losses in Distribution Network	%	8.0%	8.0%
Supply/consumption of thermal energy	MWh	313,992	307,850