Republika e Kosovës
Republika Kosova - Republic of Kosovo

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

Consultation Report

Review of the Tariff Structure for Regulated Household Customers supplied by USS

DISCLAIMER

This Consultation Report is prepared by ERO to inform stakeholders and receive comments from the stakeholders. The Report does not represent a Decision of ERO and shall not be interpreted as such.

17 January 2022

Adresa: Rr.Bekim Fehmiu (ish Ndërtesa e Fazitës), kati:2, 10000 Prishtinë, Kosovë
Tel: 038 247 615 lok. 101, Fax: 038 247 620, E-mail: info@ero-ks.org, web: www.ero-ks.org

Table of Contents

Summary

Energy Regulatory Office (ERO) is in the Extraordinary Review Process of tariffs for regulated companies in the electricity sector. The Extraordinary Reviews require a regulatory intervention on the update of tariff parameters to ensure that the allowed revenues covered through approved tariffs fully cover the reasonable costs of providing regulated service to customers. Within this process, ERO will update the Maximum Allowed Revenues (MAR) of the Universal Service Supplier and will regulate the MAR of Transmission System and Market Operator (KOSTT), Distribution System Operator (DSO) based on the amounts determined in this process. This consultation report presents ERO's evaluation of the impact of the Extraordinary Review at the end-user impact level. Alongside this report, ERO will publish its evaluation on Maximum Allowed Revenues (MAR) of KOSTT and DSO.

Comments of stakeholders

ERO strongly believes that public consultation is at the heart of effective regulatory policies. Therefore, ERO provides to the regulated companies and customers the opportunity to review the data and positions presented in this consultation report, with which they may disagree, and comment on them by correcting a factual error, presenting counter-arguments or providing new data which ERO may not have taken into account. The parties who want to express their opinions on ERO's position are invited to submit their written comments at ero.pricing-tariffs@ero-ks.org, by 31 January 2022, 16:00, at the latest.

Comments can also be submitted via post at:

Zyra e Rregullatorit për Energji

Departamenti për Tarifa dhe Çmime

Rr.Bekim Fehmiu (ish Ndërtesa e Fazitës), kati:2

Prishtinë, 10000, Kosovë

Relevant documents

Rule on Determination of Revenues for Universal Service Supplier (USS Pricing Rule)	http://ero-ks.org/2017/Rregullat/USS%20Pricing%20Rule.pdf
Decision of ERO Board, of 2017, on the change of tariff structure for final customers	http://ero-ks.org/2017/Vendimet/V_903_2017_eng.pdf
Rule on Determination of Revenues for Universal Service Supplier (USS Pricing Rule)	http://ero-ks.org/2017/Rregullat/USS%20Pricing%20Rule.pdf
Rule on Maximum Allowed Revenues of Transmission System and Market Operator (Rule on TSO/MO Revenues)	http://ero-ks.org/2017/Rregullat/Rule%20on%20TSO-MO%20Revenues.pdf

Rule on Determination of Maximum Allowed Revenues of Distribution System Operator	http://ero-ks.org/2017/Rregullat/DSO%20Pricing%20Rule_2017.pdf
Application for Extraordinary Review of Maximum Allowed Revenues for USS	https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Pjesemarresit%20ne%20Treg/OSSH/Aplikimi%20per%20Shqyrtim%20te%20Jashtezakonshem%20te%20te%20Hyrave%20te%20Lejuara%20Maksima... 1.pdf
Application for Extraordinary Review of Maximum Allowed Revenues for DSO	https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Pjesemarresit%20ne%20Treg/OSSH/Aplikimi%20per%20Shqyrtim%20te%20Jashtezakonshem%20te%20te%20Hyrave%20te%20Lejuara%20Maksima... 0.pdf
Application of KOSTT for Extraordinary Review of Maximum Allowed Revenues	https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Pjesemarresit%20ne%20Treg/Furnizim/211223_KOSTT_Aplikacioni%20p%C3%ABr%20Shqyrtimin%20e%20Jasht%C3%ABzakonsh%C3%ABm%20e%20t%C3%AB%20Hyrave%20t%C3%AB.....pdf
ERO's letter in relation to the Extraordinary Review	https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Pjesemarresit%20ne%20Treg/Furnizim/Shqyrtim%20i%20Jashtezakonshem%20i%20Te%20Hyrave%20te%20Lejuara%20maksimale%20per%20Operator....pdf
Determination of Maximum Allowed Revenues KEDS 2021-2022 – Responses to Comments	https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Pjesemarresit%20ne%20Treg/OT/Raport%20perfundimtar%20me%20pergjigje_MAR%20KEDS%202021.pdf
Determination of Maximum Allowed Revenues KOSTT 2021-2022 – Responses to Comments	https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Pjesemarresit%20ne%20Treg/OT/Raport%20perfundimtar%20me%20pergjigje_MAR%20KOSTT%202021.pdf
Final Report on Maximum Allowed Revenues of Universal Service Supplier - Responses to Comments	https://www.ero-ks.org/zrre/sites/default/files/Publikimet/Pjesemarresit%20ne%20Treg/OT/Raport%20perfundimtar%20me%20pergjigje_MAR%20KESCO%202021.pdf
Periodic Review for Maximum Allowed Revenues - KEDS	http://ero-ks.org/2018/Raportet/Pergjigje%20ndaj%20komenteve%20te%20KEDS_PRR2_final.pdf
Periodic Review for Maximum Allowed Revenues - KOSTT	http://ero-ks.org/2018/Raportet/Pergjigje%20ndaj%20komenteve%20te%20KOSTT_PRR2_final.pdf

Executive Summary

The Energy Regulatory Office is in the process of extraordinary review of tariffs for activities in the electricity sector. According to secondary legislation of ERO, extraordinary reviews take place when the differences between the input values assumed during the calculation of tariffs and values realized during their implementation, change to the extent that they exceed the materiality threshold of at least 5%.

The second half of 2021 was characterized by an unprecedented increase of prices in European electricity markets, which was affected by the demand for gas in Asia, the low level of gas reserves in European stockpiles and the growing demand for electricity that came as a result of the economic recovery following the initial restrictions of COVID-19. The combined impact of these factors caused the prices of HUPX - the Hungarian Electricity Exchange, taken as a reference due to its geographical proximity and liquidity – to reach 376 €/MWh[1] which represents an increase of 563 % compared to the beginning of the year.

As a net importer of electricity, Kosovo was also affected by rising prices in Europe. In addition to the increase of prices, in 2021, in Kosovo, there was a significant increase of electricity demand, which has affected the security of supply. This is partly influenced by the changes in the tariff structure of 2017, which aimed at simplifying the tariff structure, but which have impacted the reduction of the incentive for energy efficiency and the use of electricity as a cheaper alternative for heating during the winter season.

In another process of evaluating the impact of prices on the Maximum Allowed Revenues for stakeholders in the electricity sector, ERO has evaluated that the cost of supply during the next tariff year is € 446.7 million, while revenues that can be recovered by sales with the existing tariff are € 314 million. ERO's proposal is that additional costs shall be recovered through a two-block tariff structure, separated at the limit of 600 kWh, given that up to this level of monthly consumption, customers can be supplied by domestic capacities and with an average tariff similar to the existing tariff. In this manner, the consumption tariffs in the first block reflect the average cost of electricity supply from domestic capacities. Meanwhile, for customers who consume over 600 kWh, energy must be imported as this cannot be provided by local capacities. Consequently, the tariff for these customers should reflect the import price for the energy consumed over 600 kWh.

The proposal of ERO, that reflects the costs of provision of electricity supply is that tariffs for electricity service shall be increased for 9% for energy tariff component for business customers and for the level of consumption up to 600 kWh of household customers. The level of consumption over 600 kWh, which cannot be covered by domestic capacities, is supplied with the tariff 0.21 eur/kWh for the energy consumed at the high tariff time and 0.09 eur/kWh for the energy consumed at low tariff time. According to this proposal, the invoice with average consumption of 450 kWh will be increased for € 2.29 per month whereas the invoice with the consumption up to the block for 3.06€ per month. The increase for consumption that exceeds the 600 kWh block is more sensitive due to the fact that it reflects the import price and for the monthly consumption of 800 kWh will be increased for €26.98, whereas for monthly consumption of 1000 kWh for €50.89.

[1] 51st week of weekly prices of the HUPX energy exchange

***Table** - The impact of ERO's proposal on electricity invoices in Kosovo*

Customer	A	B	C	D	E
Monthly consumption	300 kWh	450 kWh	600 kWh	800 kWh	1000 kWh
Existing invoice	€ 18.87	€ 27.37	€ 35.86	€ 47.19	€ 58.52
ERO's proposal	€ 20.40	€ 29.66	€ 38.92	€ 74.17	€ 109.42
Difference **(**increase**)**	€ 1.53	€ 2.29	€ 3.06	€ 26.98	€ 50.89

The Ministry of Economy has pledged that it has allocated €75 million to mitigate the impact on electricity tariffs this year due to the extraordinary situation. Subsidies represent revenues for the sector that do not need to be covered by electricity tariffs and consequently, mitigate the increase in electricity tariffs.

The impact of the subsidy from the government decreases the pressure for the increase of the tariff where the tariff for business customers remains with 0% increase, the tariff for household customers with consumption up to 600 kWh remains with 0% increase, whereas the tariff for household customers for the consumption higher than 600 kWh is reduced from 0.21 eur/kWh for the energy consumed during the high tariff time and 0.09 eur/kWh for the energy consumed outside that, to 0.14 eur/kWh for the energy consumed during high tariff and 0.06 eur/kWh for the energy consumed outside that.

The subsidy provided by the Government effectively affects that the tariffs of business customers do not increase and the invoices for household customers do not increase for the consumption that can be provided with the existing tariff from domestic capacities in Kosovo (up to 600 kWh per month).

***Table** Impact of subsidies in final electricity tariffs*

Customer	A	B	C	D	E
Monthly consumption	300 kWh	450 kWh	600 kWh	800 kWh	1000 kWh
Existing invoice	€ 18.87	€ 27.37	€ 35.86	€ 47.19	€ 58.52
ERO's proposal	€ 20.40	€ 29.66	€ 38.92	€ 74.17	€ 109.42
ERO's proposal with subsidy	€ 18.87	€ 27.37	€ 35.86	€ 59.50	€ 83.14
Increase **(**with subsides**)**	€ 0	€ 0	€ 0	€ 12.31	€ 24.62

The increase of the tariff following the subsidy impacts the increase of the invoice in an amount of 12.31 € for the customer with 800 kWh in a month and 24.62 € for the customer with 1000 kWh in a month.

1 Introduction

The Energy Regulatory Office is in the process of extraordinary review of tariffs for activities in the electricity sector. Extraordinary reviews take place when there is a difference between the predicted and realized values of the tariff determination parameters, which exceeds the materiality threshold of at least 5%. Unprecedented increase of prices in the electricity markets in Europe have affected the purchase costs of electricity of the regulated retail electricity supplier in Kosovo - Universal Service Supplier, the purchase costs to recover losses in the transmission and distribution network - increasing the costs of realized import purchase.

In the case of Kosovo, the costs of purchasing electricity have been affected by other significant events. First, the data provided suggest a significant increase in the maximum demand for electricity as well as the volume of energy consumption compared to previous years. In addition to this, there were significant interruptions of supply by the units of TPP Kosova A and TPP Kosova B, which coincided with the electricity peak demand, which were not taken into account in the initial calculation of tariffs.

Extraordinary reviews require regulatory intervention to update tariff parameters in order to ensure that revenues generated through approved tariffs fully cover the reasonable costs of providing regulated service to customers. Electricity imports do not constitute a large part of the costs of purchasing electricity which is required for the supply of regulated customers. However, the combined effect of the increase in import prices, the increase in demand and the sudden interruptions of local generation units, have exceeded the materiality threshold and activated an extraordinary tariff review.

This Consultation Report presents ERO's positions on the restructuring of tariffs required to fulfil the electricity purchase costs to restore electricity supply for customers, reviews the extent to which the current tariff structure led to an inefficient increase of electricity demand and proposes alternative tariff structures which can incentivise efficient consumption, meanwhile maintaining the same tariff levels for efficient customers.

The Consultation Report is structured as follows:

- Part 2 - provides an overview of electricity prices in European markets and the effect on wholesale energy purchase costs in Kosovo;
- Part 3 - reviews previous tariff structures in Kosovo;
- Part 4 - analyses the impact of the change of tariff structure on energy demand in Kosovo;
- Part 5 proposes alternatives of tariff structure which can recover the required revenues to restore the electricity supply; and
- Part 6 - provides ERO's proposal on new tariffs, effective starting from 1 February 2022.

2 The trends of prices and their effect on energy purchase cost

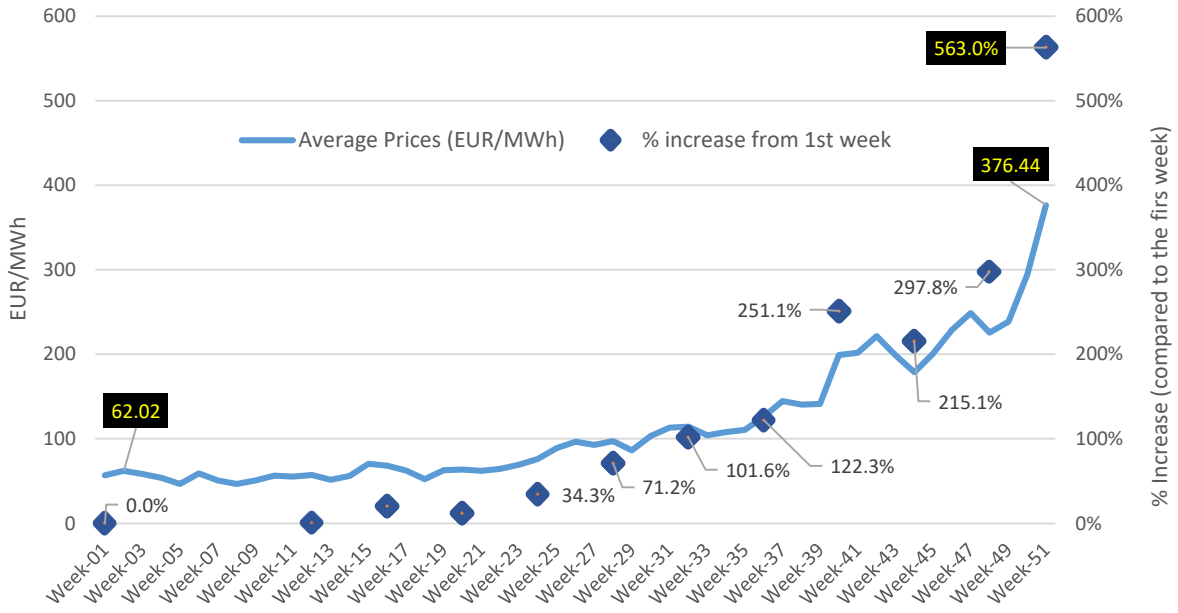
This part of the Consultation Report provides a summary of the level of prices and trends in European energy markets. While the purpose of this section is not to identify the causes of the energy crisis in Europe, ERO considers it necessary to identify the main factors behind the price increase and explain their impact on the costs of purchasing electricity in Kosovo.

2.1 The trends of prices in European energy markets

The second half of 2021 was characterized by a rapid increase of prices in European energy markets. Research findings suggest that this is driven by a number of factors. Rising demand for natural gas from Asia and low stockpiles in Europe led to a significant increase in natural gas prices[2]. Since gas-fired power plants are usually the marginal power plants needed to equalize demand in the electricity markets, the increase in natural gas prices resulted in a similar increase in electricity prices. Studies identify other important factors such as increased overall energy demand as global economies recover from the COVID-19 pandemic and reduced gas supply, which also contributed to increased prices.

Figure 1 DAM Prices (day-ahead prices) in Hungarian Energy Exchange (source-HUPX)

Average prices -% increase from 1st week -



The combined effect of these factors resulted in an unprecedented increase of electricity prices in European energy markets. The average weekly price of the Day-Ahead Market in the Hungarian Energy Exchange, a market usually referred to by the region due to its liquidity and geographical proximity,

[2] Publication of REKK on the factors behind natural gas prices
https://rekk.hu/downloads/academic_publications/rekk_policybrief_en_2021_08.pdf

reached 376,44 EUR/MWh in the 51st week of 2021. Compared to the average for the first week of 2021 (62.02 EUR/MWh), this represents an increase of 563%. Similar increases occurred in other European energy exchanges, where the majority of forecasts suggest that price levels are unlikely to fall significantly before the end of the first quarter of 2022.

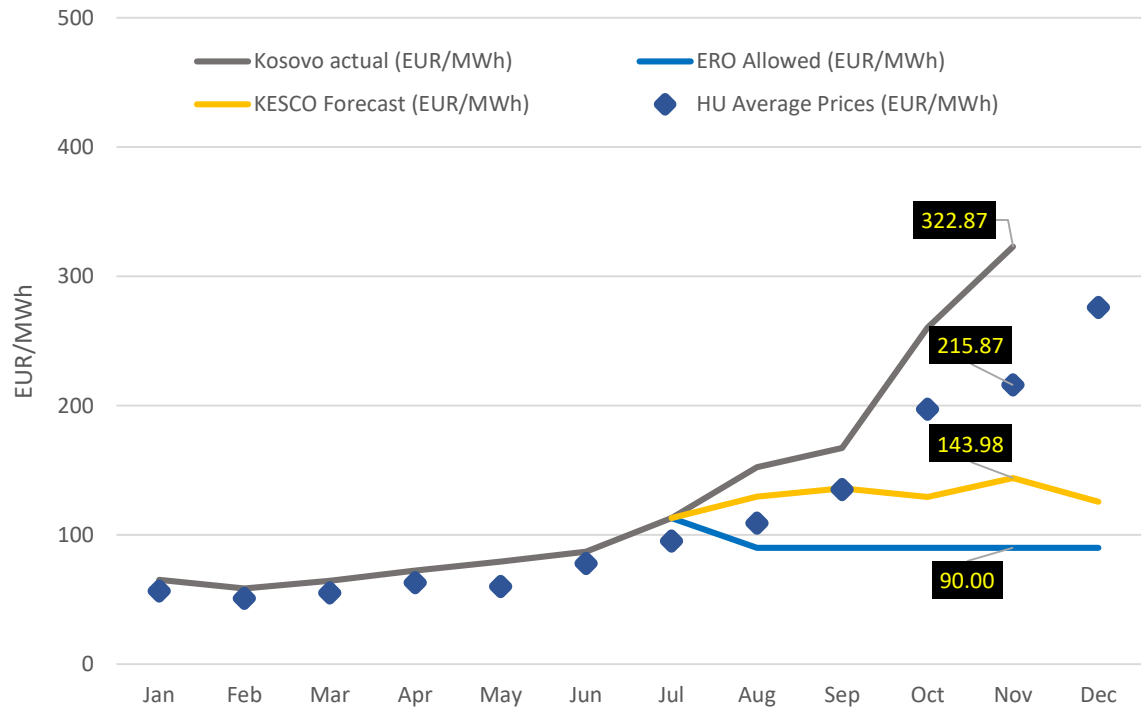
2.2 The effect on the Universal Service Supplier from energy purchase cost

As a net importer of energy, Kosovo has also been affected by increased European electricity prices. The Universal Service Supplier created wholesale energy purchase costs, which were significantly higher than the allowed costs of ERO and the projection required by the Supplier itself.

Figure 2 Comparison of the forecast and actual monthly cost of import

Kosovo - actual Allowed by ERO

KESCO - Forecast HU Average Prices –



The difference between forecast and realized costs is presented in Figure 2. The cost proposed by ERO for the imports included in tariffs, based on the forecasts of prices in August was 90 EUR/MWh for the remaining months of the year. The own forecast of the Universal Service Supplier varied between 125 EUR/MWh and 143 EUR/MWh. The actual energy purchase costs in November reached 322.87 Euros, which constitutes an increase of 257% compared to ERO's forecast, included in the current tariffs, and an increase of 142% compared to the forecast of the Universal Service Supplier.

3 Review of previous tariff structures

This part of the report reviews and compares the tariff structures applied in Kosovo and the impact that the change of tariff structure had on electricity consumption and the maximal demand in Kosovo.

3.1 The desirable elements and the results of a new tariff structure

There are a number of objectives that regulators seek to achieve through the end-user tariff. Among the important elements of tariff design are (i) the cost recovery objective - tariffs should be set at a level that covers the reasonable costs of providing regulated service; and (ii) the cost-reflection objective - which seeks to avoid unnecessary discrimination and cross-subsidization between different groups of customers, which means that the tariffs paid by customers should, as far as practicable, reflect the costs that they charge the system. Other desirable outcomes are that tariffs are transparent, predictable, easy to understand, and should promote system efficiency.

These objectives can be achieved by setting different modelling elements in the tariff structure that affect customer behaviour, therefore system costs.

3.2 Tariff structure implemented in Kosovo

The model of the tariff structure implemented in Kosovo was changed in 2017 and had an impact on the energy demand and system costs. The changes in the tariff structure are discussed in this part of the report.

3.2.1 The first tariff structure (2007-2017)

The tariff structure implemented for customers in Kosovo from 2007 to 2017 contains some design elements which were considered to be appropriate and adapted to the circumstances of that time in Kosovo. The structure, which was applicable in Kosovo until 2017, is presented in table 1:

Table 1. *The electricity tariff structure for the tariff group 0.4 kV – 2 tariff rate meter, for customers of household economies*

Tariff Group	Voltage level of supply	Tariff Element	Unit	Time of day	High season	Low season
	The 0.4 kv 2 rate meter (household economy)	Fixed customer tariff	€/customer/month		2.50	
		Active energy (P), for consumption				
		<200 kWh/month (first block)	€c/kWh	High Tariff	5.55	3.99
			€c/kWh	Low tariff	2.79	1.99
		200-600 kWh/month (second block)	€c/kWh	High Tariff	7.70	5.51
			€c/kWh	Low Tariff	3.86	2.76
		>600 kWh/month (third block)	€c/kWh	High Tariff	11.17	8.00
			€c/kWh	Low Tariff	5.58	4.01
		<200 kWh/month	€/customer/month		25.75	
		200-600 kWh/month	€/customer/month		46.60	
		>600 kWh/month	€/customer/month		78.53	

The tariff structure determines three critical elements of projections which were really useful for the Kosovo power system demands:

- **Time-of-use element**–tariff levels varied depending on consumption time in order to encourage customers to shift consumption as far away from peak hours as possible. Off-peak consumption improves system efficiency as it helps to avoid capital expenditures to accommodate peak system consumption, therefore reducing system costs.

- **Seasonality element –**tariff levels in an adequate manner have reflected the differences in the energy purchase costs between winter and summer, by strengthening the incentives for the efficient use of electricity during winter.

- **An element with progressive tariff block –** the level of tariff increases for higher amounts of electricity consumption. For example, the consumption block 0-200 kWh/month had a lower tariff, which increased for the consumption between 200-600 kWh and then increased again for the level of consumption above 600 kWh. The progressive tariff block had a dual purpose: (i) to ensure that customers were able to consume at least a certain volume of electricity at affordable prices; and (ii) encouraged rational consumption and contributed to energy efficiency.

As it has already been mentioned, the tariff structure was ideally suitable for the circumstances in Kosovo, reflecting projection elements which took into account the social characteristics as well as the characteristics of the power system in the country.

3.2.2 The tariff structure implemented from 2017

The biggest criticism of the previous tariff structure, mainly by customers, certain members of civil society and the Parliamentary Committee on Economy, was that the tariff was difficult to be understood by customers. In an effort to answer to these requests, following a public consultation process in 2017, ERO Board decided to approve a new tariff structure (ERO's Decision on the change of tariff structure) http://ero-ks.org/2017/Vendimet/V_903_2017_eng.pdf), presented in the table below.

Table 2. *Electricity tariff structure for the tariff group 0.4 kV – 2 tariff rate meter – for customers of household economies (in force since 2017)*

Tariff Group	Voltage level of supply	Tariff element	Unit	Time of day	Tariff
5	0.4 kV - 2 rate meter (household economy)	Customer fixed tariff	€/customer/month		1.74
		Active Energy (P), of which	€c/kWh	High tariff	6.75
			€c/kWh	Low tariff	2.89

The tariff structure approved by ERO removed the seasonality and tariff elements of the progressive block of tariff design. Although this achieved the objective of making the tariff simpler and easier to understand, it had significant drawbacks as it removed efficiency incentives. A comparison of modelling elements, objectives and their implementation in different structures is provided in the table below.

Table 3. *Elements of tariff structure modelling and implementation in Kosovo*

Tariff Model Element	Description	Objective	Structure 2004-2017	Structure 2017-2021
Time of use	The tariff differs between the on peak and off peak hours of the day, with higher tariff on peak hours.	Incentivize the off-peak consumption, improvement of system efficiency and energy factors. Consumption of energy on peak requires additional investments of capacity which increases the system cost.	Yes	Yes
Seasonality	The tariff differs according to different seasons of the year, with higher tariffs during the winter season.	The tariff, in an adequate manner, reflects the difference in energy purchase cost, by sending the proper signals to customers.	Yes	No
Progressive Tariff Block	The tariff increases with the increase of consumption blocks	Provides a certain amount of electricity to be consumed at affordable prices. Promotes energy efficiency.	Yes	No

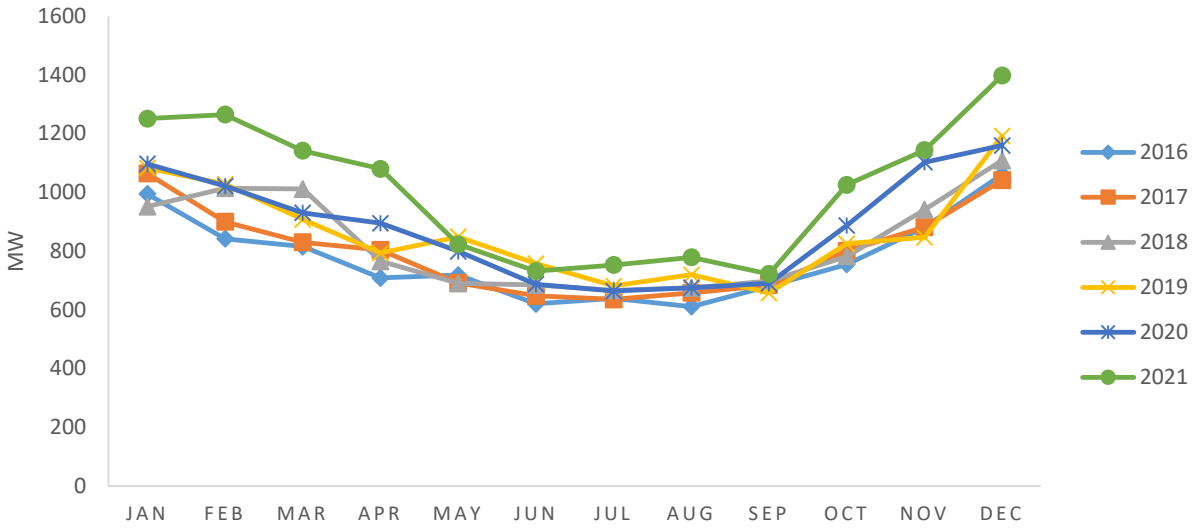
4 The impact of the change of tariff structure on electricity demand

This part of the report provides an overview of the impact of changing the tariff structure on the electricity demand profile in Kosovo. It should be noted that the analysis is based on a limited number of observations with only 3 years of full implementation, one of which is characterized by a significant structural shock imposed by the Covid-19 pandemic. However, even in such conditions, general trends and tendencies are easily observed and can be attributed to the change in the tariff structure.

4.1 The increase of consumption peak

The most noticeable change in the demand profiles for electricity is observed in the demand profile during the winter months of 2021 compared to previous years. The maximum hourly peak in January 2021 was almost 286 MW higher than the average over the previous 4 years. It should be noted that the maximum hourly rate also depends on other factors such as weather conditions, but the difference between 2021 and all previous years, especially during the winter months, suggests an increase in electricity consumption and electricity use for heating.

Figure 3. *Maximum peak per hour of the distribution system for each month.* [3]



4.2 The number of customers who consume more than the block of 600 kWh/month

The removal of the block-tariff also encouraged a more inefficient use of consumption. This can be concluded through an analysis that compares household energy consumption data before 2017 and after 2017, when the tariff structure changed from progressive blocks to flat tariff. The analysis will focus on customers' electricity consumption and their relocation near the 600 kWh/month block.

As Figure 4 suggests, the average share of individual household customers consuming over 600 kWh/month experienced a decline from 2013-2017 when block tariffs were set. From 2017 - 2021 the share of customers who exceeded the threshold of 600 kWh/month increased and returned to the levels of 2013. The increase is noticed in both high and low season tariffs. In 2017, the seasonal factor, the time-of-use, was also removed, so the increase of customers exceeding the 600 kWh/month threshold was higher for the high season (which coincides with winter).

An increase in consumption beyond the limit of 600 kWh can be attributed to many factors, such as the removal of time-of-use, seasonal, increase in the price of wood pellets and wood for heating, increased socio-economic development, etc.

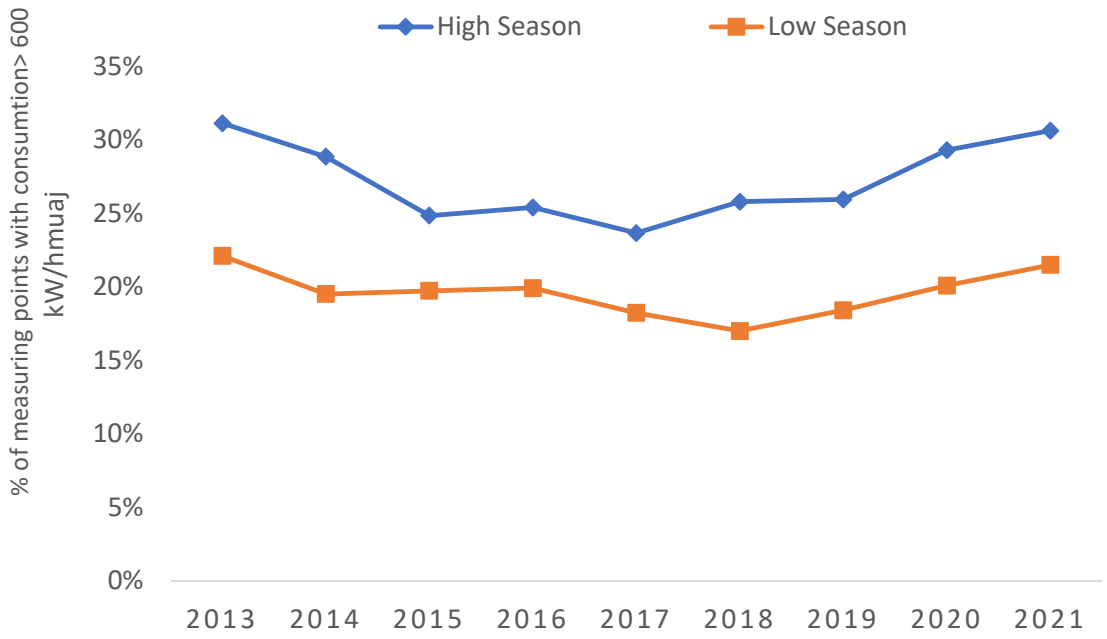
Taking into account what was stated above, it can be noticed that while the effect of removing the BTN structure from tariffs on household behaviour cannot be measured accurately, its effect towards reducing efficiency incentives for customers is evident.

[3] Data provided from KEDS

Figure 4. *Average share of individual customers of household economies who consume >600 kWh, (%)*

High season

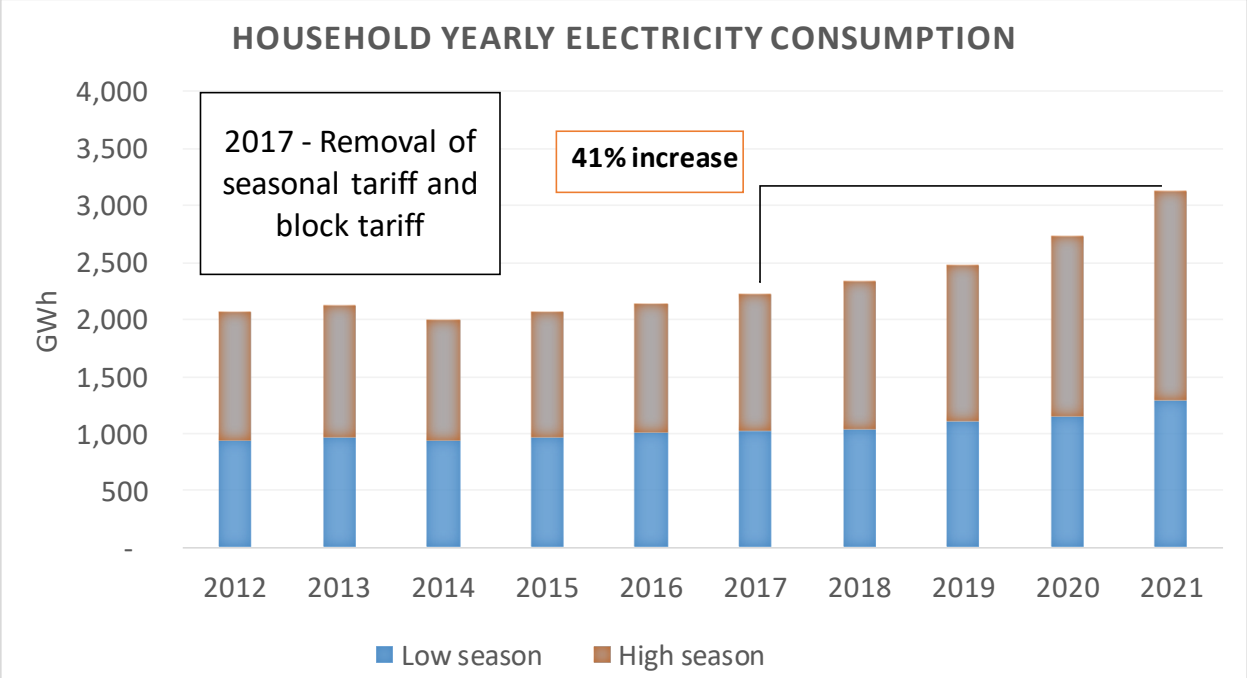
Low season



4.3 Increase of electricity consumption (volumes)

The total volumes of the consumed electricity have also increased. From 2017 to 2021, Kosovo has had a significant increase in energy consumption in household economies, especially during the season of high demand (winter). Figure 5, suggests that this increase is 41%. Until 2017, there was no significant increase in electricity demand in household economies. Therefore, we can conclude that the removal of the block tariff and the removal of the seasonal tariff, led to lower electricity prices during the winter as well as to higher amounts of consumption (> 600 kWh/month), and consequently to increased consumption, which enabled households to switch to electricity for heating as a more economical method.

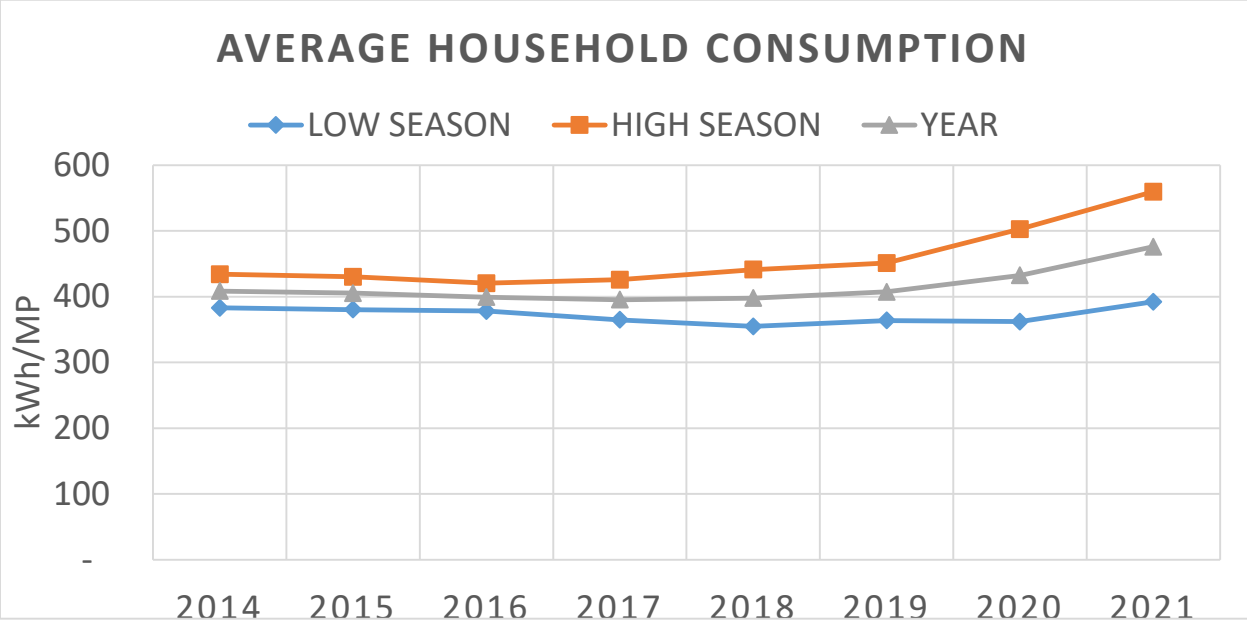
Figure 5. Annual consumption of electricity for household economies in Kosovo



4.4 Increase of average consumption of household economies

It can be argued that the overall increase in consumption may be a result of the connection of new customers to the system. However, the data suggest that average consumption per metering point has also increased, especially in the high winter season months.

Figure 6. *Average consumption for the customer of household economy in Kosovo*



5 Return of efficiency incentives through a new tariff structure

ERO concludes that the increase in the consumption profile observed in 2021 can be largely attributed to the change in the tariff structure in 2017. This has had a significant negative impact on the system, resulting in increased demand for capital expenditures, increased system costs, and has had an impact on electricity purchase costs. Therefore, ERO emphasizes that the additional costs imposed by the increase in energy prices should be reviewed according to various proposals of the tariff structure. These are discussed in this part of the Consultation Report.

5.1 Recovering the revenue requirement

During tariff processes, ERO determines the Maximum Allowed Revenues which are required to cover the justifiable costs for provision of the regulated service. Such allowed revenues can be recovered through:

- **Volumetric tariff with linear tariff** –charges all customers with the same price for each unit of electricity regardless of the capacity reached or the volume consumed. This approach would be in line with the current tariff structure.

- **Progressive Tariff Block (PTB) –**charges the unit of electricity (volume rate) depending on which block the consumption falls. The customer always pays the first block of consumption in the amount of the first block and the remaining part in the subsequent blocks. The progressive tariff block offers customers a price signal and an incentive to move towards more energy efficient consumption. PTB can be used to balance affordability, energy efficiency and cost recovery. However, their drawback is its complexity and if not designed properly, they can have undesirable effects on low-income households or on customer understanding.

- **Volume Differentiated Tariffs (VDT)** –charges a specific fixed tariff for each unit of electricity, however this tariff changes based on the overall monthly consumption of the customer. VDT can be difficult to be understood by customers and are not easily accepted.

A survey from the World Bank suggests that 19% of surveyed countries use flat-rate tariffs, 60% use PTB, 8% use VDT, and 13% use a combination of capacity and volume tariffs for households.

5.2 Recovery of allowed revenues through the linear tariff

The predetermined option to ensure cost recovery is the continuation of the application of a fixed tariff for all household consumption. As mentioned above, linear tariffs are simple to understand and customers respond well to the signals provided by such a tariff model. However, this would mean a significant increase in the resulting household tariff for all customers, as summarized below. Furthermore, one of the main drawbacks of this tariff structure is that it reduces incentives to use electricity for heating.

5.3 Recovery of allowed revenues through a progressive tariff block

The previous structure of block tariff (PBT) in Kosovo resembled a social tariff, where electricity volumes <200 kWh/month were with lower prices than system costs, electricity volumes from 200 – 600 kWh were at approximately average costs, and the volumes higher than 600 kWh had higher costs, in order to subsidize the consumption under 200 kWh. The block tariff was in force until 2017 and ensured that all customers in the system had access to electricity up to 200 kWh at affordable prices. The 200 kWh/month limit was determined taking into account the minimum basic need for electricity (without heating). In a similar manner, the block limit of 600 kWh/month was set taking into account the minimum basic need for electricity with heating.

The Law on Electricity (Article 49) states that the funding for support of vulnerable customers must be provided in a non-discriminatory manner and in particular should not be funded by electricity customers. In addition, the ERO Rule on Determination of Revenues for Universal Service Supplier (USS Pricing Rule), Article 20, point 5 states that block tariffs can be used to encourage efficient electricity consumption. They can also be used for social reasons, but only in cases where the Regulator is not convinced, based on the available evidence, that other subsidy mechanisms adequately protect vulnerable customers. This means that a BTN tariff structure can be used, but only to encourage efficient consumption.

Furthermore, the use of block tariffs as social tariffs is based on the assumption that households with lower incomes consume less energy than households with higher incomes. In some cases, this assumption is not accurate. The customers with higher incomes may afford to live alone or in small households therefore consuming less electricity per metering point, while lower incomes customers may not be able to do so.

Therefore, also in accordance with the Methodology of ERO, vulnerable customers shall be protected based on the targeted subsidy mechanisms and not through Block-Tariffs.

5.4 Projection of the progressive tariff block

The effective design of a progressive tariff block (PTB) is decisive for its success. An inadequate design of the structure may lead to undesirable effects in the market, such as such as distortion of the price signal, cross-subsidies, increasing the burden on vulnerable groups, etc.

The design of BTNs revolves around the number of blocks, the size of the blocks, and the unit price for each block. Based on the World Bank Survey, the number of blocks across countries for household tariffs ranged from 2 - 8. ERO proposes a 2-block tariff for Kosovo. Since BTN is not intended as a social tariff block, but to accurately reflect import costs and promote efficiency, a 2-block system is considered simpler to be understood by customers, while also meeting the criteria of cost recovery, stimulating energy efficiency and providing clear price signals to customers.

5.5 Determination of the block size

There are no internationally established standards for determining the size and boundaries of the block. Taking into account the local context of Kosovo, ERO proposes the establishment of the block through the division of average production capacities of the last 5 years by KEK equally to all customers.

5.5.1 Allocation of average production capacities of the last 5 years by KEK to all customers equally

Kosovo electricity market is unique in its structure. Therefore, the tariff structure shall reflect and also include the effects of this unique market.

The production and consumption of electricity in Kosovo is mainly based on the energy generated and provided by KEK to USS. According to the Bulk Supply Agreement (BSA) between KEK and KEDS/KESCO, KEK sells the electricity with priority to KESCO for USS, KEDS for DSO losses and KOSTT for TSO losses. The remaining part of electricity is sold at the competitive market.

The proposed methodology is for the energy produced by KEK to be allocated equally to all USS customers, given that USS has priority over the relatively cheap electricity produced by KEK. The rest of the energy required for the needs of USS is covered by imports or contracts with prices higher than the production of KEK. The second block (consumption more than is allocated by KEK) should somehow reflect this increased cost of imports. This method makes customers aware of the general prices of imports, the lack of domestic capacity to produce electricity at low cost, therefore aiming to increase efficiency in the use of electricity.

The allocation in this case is based on the average historical production capacities of KEK provided for USS, during the last 5 years (2017 - 2021). This is then distributed equally to all Metering Points under the USS, including Metering Points for customers connected at 35 kV, 10 kV, households, businesses and public lighting). The average annual electricity generation distributed for each metering point is ~ 600 kWh/month which is also the proposed level of BTN with this methodology.

According to KEDS data, the consumption of 600 kWh is exceeded by 31% of household customers during the winter season and 21% of customers during summer.

5.6 ERO's proposal for the tariff structure

Taking into account what was stated above, ERO proposes to apply to household customers a tariff structure with a block set at 600 kWh where the first block reflects a tariff that covers the average system costs and the tariff above the block that reflects more closely the cost of imported energy.

6 Tariffs proposed by ERO

In a divided process of the extraordinary review, published on ERO's website, alongside this report, ERO has evaluated that the Maximum Allowed Revenues that cover the reasonable costs of electricity service are €446.7 million. This part of the Consultation Report provides ERO's proposal on the level of electricity tariffs that will be applicable for the period 1 February 2022-31 March 2023 to cover the level of justifiable costs, and is structured as follows:

- Part 6.1 presents the evaluation of ERO for the tariffs that reflect the cost of service.
- Part 6.2 presents the evaluation following the subsidy of the Government of the Republic of Kosovo;

6.1 The determination of the tariff at a level that reflects system costs

As stated above, the level of Maximum Allowed Revenues to cover the system costs, which is also related to the high costs of import, is evaluated in a separate report of ERO and reaches the level of €446.7 million. The existing level of tariffs, applied according to the existing tariff structure, may generate €314 million. The recovery of the difference between the required system costs and those that can be generated by the existing tariffs, i.e. the difference of € 132.7 million, would mean a linear increase of tariffs in the amount of 42%.

However, in line with the proposal provided in Part 5 of this report, ERO proposes that additional costs shall be covered through progressive block tariff. This ensures that the tariff of the block for consumption up to 600 kWh, which can be covered by generation capacities in Kosovo, shall reflect the average costs of the system similar to the existing tariff, whereas the tariff for consumption above 600 kWh- for which energy has to be imported – shall reflect the cost of import of this energy

According to electricity sales data, cost recovery would mean the following application of tariffs:

- An increase of 9% of energy components of business customers' tariffs;

- An increase of 9% of energy tariffs of household customers for the level of consumption up to 600 kWh; and

- Application of the tariff of 0.21 €/kWh for the energy consumed during the high tariff time and 0.09 €/kWh for the energy consumed at low tariff.

6.1.1 The impact of the tariff proposal on the invoices of household customers

This part of the report provides an analysis of the impact of ERO's proposal on the invoices of household customers for different levels of consumption:

A. The customer with consumption 300 kWh/month –According to the legislation in Kosovo, it is evaluated as the energy required to cover the essential needs of a family of 4 members. During the year, 20.5% of customers do not exceed this threshold in any month of the year.

B. The customer with consumption 450 kWh/month –presents the average consumption of a household customer during the year. Based on KEDS data, the average consumption (from 2012-2020) from the households that consume more than 300 kWh/month is ~ 460 kWh/month. The average consumption in 2021 for household customers who consume more than 300 kWh/month is around 440 kWh/month. During the year, 44% of customers do not exceed this threshold in any month of the year.

C. The customer with consumption 600 kWh/month –represents the minimum basic consumption of a customer with electric heating during the winter, based on the analysis during the setting of blocks in previous tariffs, 69% of customers do not exceed this threshold in any month during the year, and 79% of customers do not exceed this level during the summer months.

D. The customer with consumption 800 kWh/month – presents a customer with consumption above the proposed block.

E. The customer with consumption 1000 kWh/month –presents a customer with a higher consumption of electricity.

If we assume that the energy consumption high tariff/low tariff ratio is equal to the realized average, the impact of ERO's proposal on household tariffs is as in the following table:

Table 4 *The impact of the tariff proposal on the monthly invoice of household customers, according to consumption levels*[4]

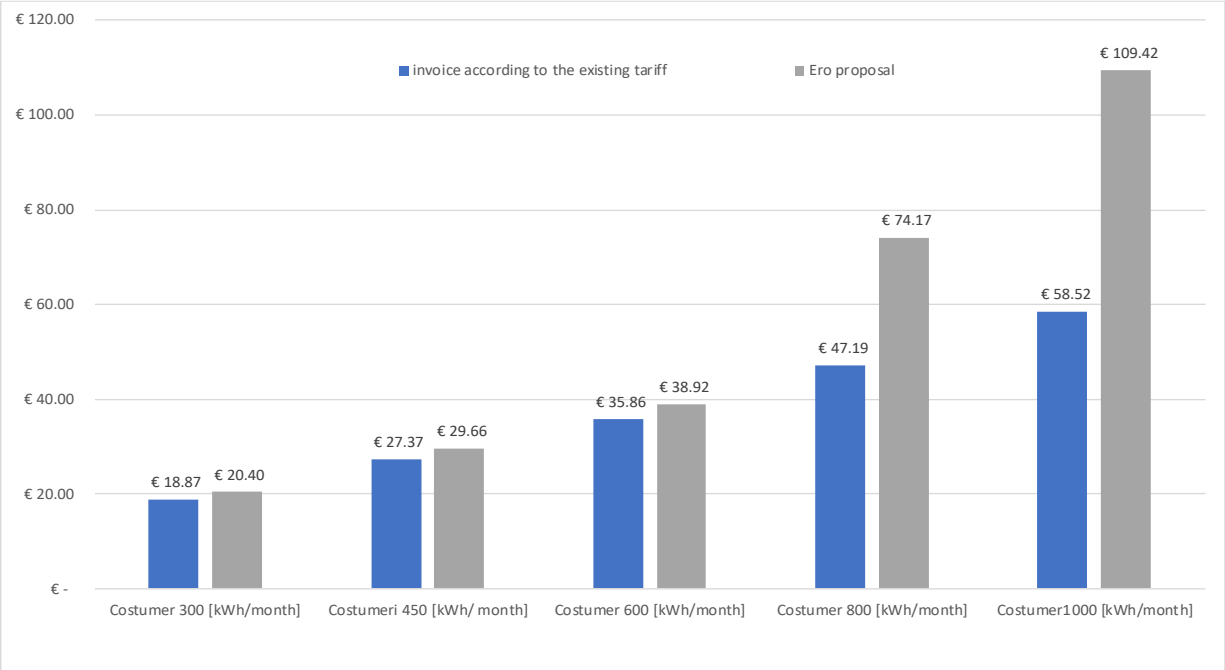
Customer	A	B	C	D	E

[4] All values include VAT

Monthly consumption	300 kWh	450 kWh	600 kWh	800 kWh	1000 kWh
Existing invoice	€ 18.87	€ 27.37	€ 35.86	€ 47.19	€ 58.52
ERO's proposal	€ 20.40	€ 29.66	€ 38.92	€ 74.17	€ 109.42
Difference **(**increase**)**	€ 1.53	€ 2.29	€ 3.06	€ 26.98	€ 50.89

As a result of the changed tariff, the average invoice in Kosovo increases by 2.29 euros per month, the invoice of the customer that consumes in the block is increased for 3.06 euros per month, the invoice of the customer with 800 kWh is increased for 26.98 euros per month, whereas the invoice of the customer with 1000 kWh is increased for 50.89 euros per month.

Figure 7 *The impact of the tariff proposal on the monthly tariff of household customers (all prices with VAT)*



The tariff structure with block (600 kWh) proposed by ERO, supports the customers with low level of consumption and incentivises energy efficiency for the customers above the block. The difference at the tariff level and costs is a direct reflection of the fact that consumption up to 600 kWh per month for each customer can be provided by generation capacities in Kosovo and does not require a big share of import. To supply the customers who consume more energy than the one which can be provided with domestic capacities (600 kWh), the energy shall be purchased from import and the tariff for consumption above 600 kWh shall reflect the import price.

6.2 The subsidy from the Government of the Republic of Kosovo

The Ministry of Economy has pledged to allocate €75 million to mitigate the impact of the energy crisis on electricity tariffs. The subsidies represent revenues for the sector that does not need to be covered by electricity tariffs and, consequently, mitigate the increase in electricity tariffs.

Therefore, if the additional revenues to be covered by the tariff increase are € 132.7 million and the Government pledges to cover €75 million, this means that the effective difference to be covered by the new tariffs is € 57.7 million.

The impact of the subsidy from the government reduces the pressure to increase the tariffs as follows:

- The tariff for business customers remains with 0% increase;
- The tariff for household customers remain with 0% increase up to the consumption 600 kWh; and
- The tariff for household consumption for the consumption over 600 kWh is reduced from 0.21 eur/kWh for the energy consumed during the high tariff time and 0.09 eur/kWh for the energy consumed outside that, to 0.14 eur/kWh for the energy at high tariff and 0.06 eur/kWh for the energy outside that.

6.2.1 The impact of tariff proposal on the invoices of household customers

The subsidy provided by the Government effectively affects that the tariffs of business customers do not increase and the invoices for household customers do not increase for the consumption that can be provided with the existing tariff from domestic capacities in Kosovo (up to 600 kWh per month).

Table 5 *The impact of the subsidy on final electricity tariffs*

Customer	A	B	C	D	E
Monthly Consumption	300 kWh	450 kWh	600 kWh	800 kWh	1000 kWh
Existing invoice	€ 18.87	€ 27.37	€ 35.86	€ 47.19	€ 58.52
ERO's proposal	€ 20.40	€ 29.66	€ 38.92	€ 74.17	€ 109.42
ERO's proposal after the subsidy	€ 18.87	€ 27.37	€ 35.86	€ 59.50	€ 83.14
Increase **(**after the subsidy**)**	€ 0	€ 0	€ 0	€ 12.31	€ 24.62

The increase of the tariff following the subsidy affects the increase of the invoice in an amount of € 12.31 for the customer with 800 kWh per month and €24.62 for the customer with 1000 kWh per month.

Figure 8 *The impact of tariff proposal on the monthly invoice of household customers following the subsidy from the Government of Kosovo (all prices with VAT)*