



**Republika e Kosovës**  
**Republika Kosova - Republic of Kosovo**

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



# **Consultation Report on Maximum Allowed Revenues**

**Periodic Review for TSO/MO**

**Second Regulatory Period (2018-2022)**

## **STATEMENT**

This Consultative Report has been prepared by ERO for the purpose of providing information to stakeholders of the energy sector. The report does not present any decision of ERO and should not be interpreted as such

**24 August 2018**



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## 1 Introduction

The Energy Regulatory Office (ERO) is conducting the Second Periodic Review of the Second Regulatory Period (SRP2), which includes the period from 1 April 2018 to 31 March 2023, to determine the Maximum Allowed Revenues (MAR) for The Transmission System and Market Operator (TSO/MO) and the Distribution System Operator (DSO).

This **Consultative Report** sets out ERO's proposals for MAR to be covered by KOSTT during the second regulatory period SRP2. The approved MAR will determine the tariffs for the use of the Transmission System, to be charged to the Transmission System Users. Costs resulting from the use of the Transmission System will be included in the end-user charges. Comments on this Consultative Report can be submitted electronically via e-mail at [ero.pricing-tariffs@ero-ks.org](mailto:ero.pricing-tariffs@ero-ks.org) or in printed form at the following address:

Energy Regulatory Office  
Department for Pricing and Awards  
Str. Dervish Rozhaja No. 12  
Prishtina, 10000, Kosovo

The last date for comments is **7 September 2018**.

After reviewing the comments received, ERO will publish the **Final Report along with a response to comments** by 14 September 2018. Comments received for this Consultation Paper will be published together with the Final Report.

## 2 Regulatory approach in the electricity sector

Transmission services provided by KOSTT include:

- The System Operator (SO): who operates with high voltage electricity network with responsibility for investment and maintenance of network assets.
- Transmission System Operator (TSO): who is responsible for interconnecting the network with other networks as well as for the long-term security of the system's capability to meet reasonable requirements for electricity transmission.
- Market Operator (MO): who is responsible for the organization and administration of electricity trading and the determination of payments between producers, suppliers and customers. The Market Operator balances in advance the financial demand and supply.

During SRP2, only the transmission services costs (provided by KOSTT) and distribution services (provided by KEDS) are subject to regulation by ERO. This marks a major change from ERO, where wholesale energy costs and retail supply costs for customers served by the Public Electricity Supplier are also regulated by ERO. In this sense, the price of electricity production by KEK JSC is not subject to regulation, i.e. this price is not approved by ERO from 1 April 2017. This change comes after the 2016 adoption of the new legislation, regulating the energy sector, in accordance with the European Union Directives. With the new laws, regulation of final tariffs has been eliminated for all customers, thus opening the electricity market for competition. However,



ERO will continue for a while to regulate the tariffs for categories enjoying the right to supply universal services by the supplier selected by ERO. It should be noted that all customers have the right to freely choose their supplier under competitive market conditions and in the event of a failure of their supply by these suppliers, then supply will be guaranteed through the Suppliers of Last Resort (SLR)<sup>1</sup>. In addition, ERO monitors the competition of the power supply market on a continuous basis and may intervene when identifying behaviour that harms the competitive market.

### **3 Determination of Maximum Allowed Revenues**

#### **3.1 Methodology**

For each regulated entity, ERO sets the MAR to be applied for each year of the SRP2 period. MAR is initially calculated on an annual basis and can be 'profiled' over the whole period to avoid major year-over-year changes in tariffs. MAR is subsequently updated annually within the SRP2 period for the differences between allowed and realized costs and revenues that are beyond the control of the licensee.

The MAR calculation follows the same approach for each entity and is summarized below. For a more complete description of MAR calculation, processes and methodologies, refer to the Rule for TSO/MO Revenues published on ERO's website:

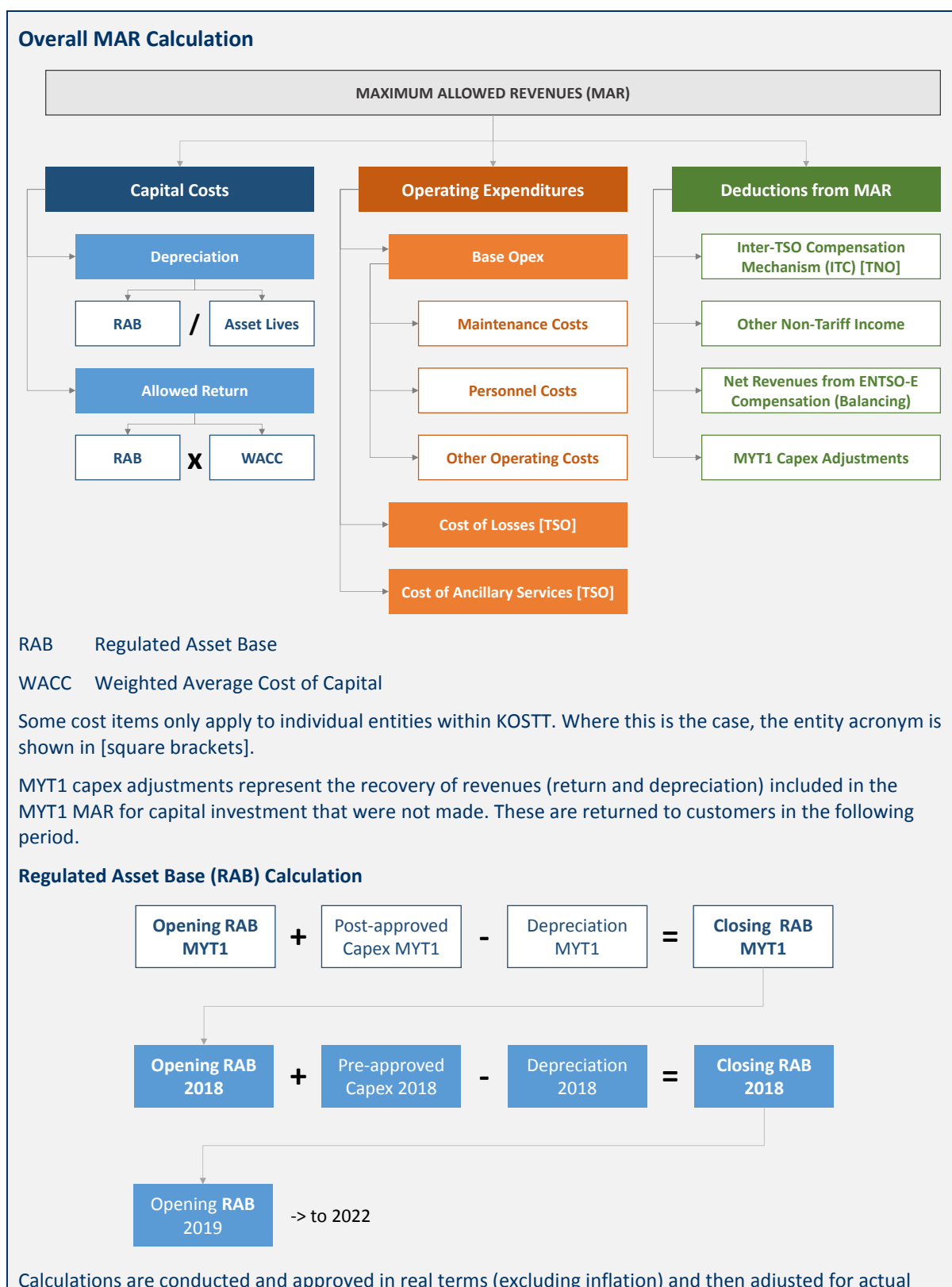
- [http://ero-ks.org/2017/Rregullat/Rregulla%20per%20te%20Hyrat%20e%20OST\\_OT.pdf](http://ero-ks.org/2017/Rregullat/Rregulla%20per%20te%20Hyrat%20e%20OST_OT.pdf)

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<sup>1</sup> The USS and LRS rules are available on the ERO website at: [http://ero-ks.org/2017/Rregullat/Rregulla%20per%20Vendosjen%20e%20te%20Hyrave%20per%20Furnizuesin%20me%20Sherbim%20Universal%20\(%20Rregulla%20per%20te%20Hyrat%20e%20FSHU\).pdf](http://ero-ks.org/2017/Rregullat/Rregulla%20per%20Vendosjen%20e%20te%20Hyrave%20per%20Furnizuesin%20me%20Sherbim%20Universal%20(%20Rregulla%20per%20te%20Hyrat%20e%20FSHU).pdf)



• **Figure 1 - Calculation of Maximum Allowed Revenues**





inflation.

Post-approved capex represents the final capital expenditures<sup>2</sup> (“capex”) approved for addition to the RAB during MYT1 following review by ERO of actual against planned projects and actual against pre-approved costs. Pre-approved capex represents the forecast capital expenditures approved for inclusion in MYT2 revenues. Following the conclusion of the MYT2 period, these will be subject to review of actual outcomes against pre-approved projects and costs and the RAB for the following period will be updated accordingly.

#### Cost of losses calculation

$$\begin{array}{|c|} \hline \text{Unit Cost} \\ \text{(€/MWh)} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Energy} \\ \text{Transmitted} \\ \text{(MWh)} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Loss Allowance} \\ \text{(\%)} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Cost of Losses} \\ \text{(€)} \\ \hline \end{array}$$

Unit costs and volumes of energy transmitted are forecast at the start of the MYT period. Within the period, the allowed cost of losses passed-through to customers is updated annually for differences between actual and forecast costs and volumes. The loss allowance percentage for each year is set ahead of the MYT period and is not adjusted during the period.

## 3.2 System Cost Structure

In 2017, distribution services accounted for about 33% of the average of end-user invoice. The regulated and combined transmission and distribution services accounted for about 40% of the invoice. The single largest component of invoices is the wholesale energy cost (purchase costs from domestic generators and imports) accounting for half of the final invoice. Renewable energy premiums represent payments made to renewable energy generators to cover the difference between their incentive tariff and the wholesale market price representing about 3% of system costs. Other cost components are also the retail supply costs, which account for about 7% of total costs.

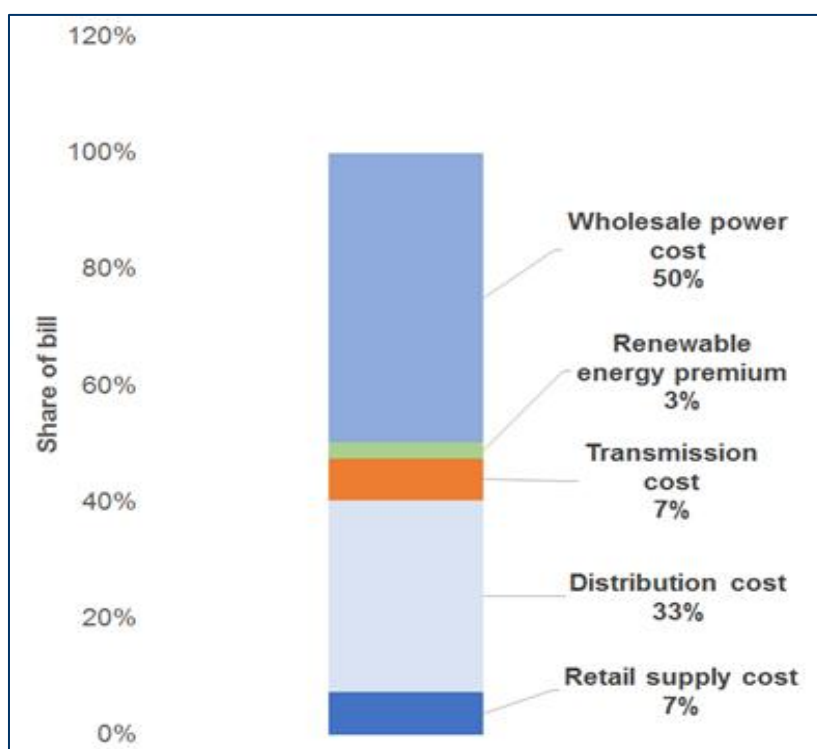
The cost components are shown in the figure below.

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<sup>2</sup> In this paper, the term “capex” is used to refer to expenditures to purchase physical assets. The term “capital costs” is used to refer to the corresponding cost allowance included in MAR. This allowance is the sum of the return on and depreciation of the physical assets and does not equal capex. For example, for an asset with an investment cost of €10 million, a life of 40 years and a WACC of 5%, the capex is equal to €10 million and is spent before commissioning of the asset into service. The annual capital costs, which are incurred in each year in which the asset remains in service, are equal to the sum of: (i) depreciation of the asset of €0.25 million annually (€10 million divided by a 40-year life); and (ii) the return on the asset, equal to €0.5 million in Year 1 (5% WACC multiplied by the opening asset value of €10 million) and declining thereafter as the asset’s value is depreciated over time.



**Figure 2 – System cost components**



*Note: The data shown in the figure are for 2017*

## 4 Review Process

The steps so far in the review process have been as follows:

- The SRP2 review started in May 2017 when ERO issued an Initiative Report that specified the process and schedule of review.
- Subsequently, ERO prepared and issued templates for data in May 2017, to be completed by KOSTT and KEDS.
- In June 2017, ERO issued Consultative Reports for Revenue values for MAR calculations covering the proposed Weighted Average Cost of Capital (WACC), allowances for electricity network losses and longevity of assets (used for depreciation purposes). KOSTT and KEDS commented on these proposals in July 2017<sup>3</sup>.
- KOSTT documentation for the revenues allowed for SRP2 have been submitted to ERO on 5 September 2017 as completed data templates, as well as a narrative accompanying explanation and supporting documentation.

<sup>3</sup> Copies of consultation documents about input values are available on ERO's website at: <http://www.ero-ks.org/w/index.php/shqip/tarifat-dhe-imet-mainmenu-95/energjia-elektrike-mainmenu-96/proceset-e-shqyrtimit-mainmenu-174> [Albanian]; <http://www.ero-ks.org/w/index.php/en/tarifat-dhe-imet-mainmenu-95/electricity/price-review> [English]; and <http://www.ero-ks.org/w/index.php/srpski/tarifat-dhe-imet-mainmenu-95/elektricka-energija/konsultativni-proces> [Serbian]



- Between September and November 2017, ERO and its consultants consulted with KOSTT to review their documents and data for resolving discrepancies and consistency shortages in the data provided and to identify the additional data required.
- On 4 April 2018, ERO has published responses to stakeholders' comments on regulatory parameters.
- On 20 August 2018, the Board of ERO made a decision regarding the regulatory parameters for the second regulatory period (SRP2).

The following sections summarize the review conclusions undertaken by ERO on the KOSTT MAR proposals. Based on this, ERO's draft proposals for MAR, to be covered by KOSTT during SRP2, have been presented. Although extensive analysis has been carried out, some ambiguities remain, where additional information from licensees has been requested. These are listed in the relevant sections of this report.

## **5 Operation and maintenance costs SRP2**

### **5.1 Basic Opex**

The basic opex consists of several main categories: maintenance costs, other operational costs and other costs that are outside the control of KOSTT. The approach taken by ERO to set the values for each of these categories for the SRP2 period is the same as that in FRP1 and can be summarized as follows:

- The initial value for SRP2 in 2018 was initially set equal to the allowed value at closing (instead of the realized one) for FRP in 2017, taking into account the need for a higher performance system over the next period, which is also related to many additional legal obligations that the operators will have. This ensures that licensees are not allowed to exceed the expenses that are under the control of the licensee, while the licensees will have incentives to save on certain operating categories.
- This initial value for SRP2 then adjusts to changes in costs arising from regulatory or legal obligations that are considered to be outside the control of KOSTT. For SRP2, ERO has allowed, on an annual basis, € 330,000 additional costs resulting from the obligations related to the unification of Kosovo's and Albania's electricity markets and other KOSTT international obligations, the costs associated with the work experience, the additional costs of OPEX due to the large differences between allowed and realized level based on the inability of KOSTT to reach the 4% efficiency target for FRP1.
- The OPEX estimated for the SRP2 period is divided into several main categories. In the "Repair and Maintenance" and "Other Operational Expenditures" lines, the efficiency factor was applied considering the lines as controllable by KOSTT, while the efficiency factor has not been applied to the "International Market Obligations" line.
- In order to monitor the quality of service and performance, "Repair and Maintenance" costs have been estimated as a separate OPEX line. The basis for estimating these costs is the





average level achieved in 2013-2017 and the necessary costs for the maintenance of the assets.

- The value for 2018 is then foreseen for the remainder of SRP2, adjusting to the expected improvements from annual efficiency. ERO has also issued a special report to explain how these efficiency factors are assigned. For SRP2, ERO proposes to apply an annual efficiency factor of 1.5% starting from 2019 (i.e., KOSTT is expected to reduce opex by 1.5% annually in real terms before inflation).

The separating sharing factor of savings for savings exceeding the efficiency factor for operational costs will be separated between licensees and customers by the 50/50 factor. In the case of spending over the allowed level, the change of such costs will be covered by the TSO/MO itself, except to the expenditures that are outside the control of TSO/MO.

Investment costs, i.e. depreciation and return costs will be adjusted on the reasonable current basis, considering the prices per unit on the market, for the realized investment amounts. If the TSO/MO fails to implement capital projects in accordance with the schedule given in the approved investment plan, then the TSO/MO must notify the regulator.

In order to encourage performance improvement, if the realized losses are lower than the allowed losses, all savings will remain with the licensee, and if target is not reached, the cost will be covered by the licensee.

It should be noted that this approach is different from that proposed by KOSTT in its application where an estimate of operational costs was prepared for each year of the SRP2 period and no continuous improvement in efficiency was assumed. This difference in approach helps explain the major differences that result between KOSTT's request and proposals from ERO.

Proposed allowances for opex, developed as explained above, are presented in the table below:

**Table 1: Basic Opex Proposals**

€000s	SRP2				
	-----				
	2018	2019	2020	2021	2022
	Proposed	Proposed	Proposed	Proposed	Proposed
<b>Proposed by KOSTT</b>					
Repair and Maintenance	1,191	1,327	1,045	967	1,042
Other operational expenses	7,067	7,275	7,568	7,636	7,894
Membership in international organizations	330	330	330	330	330
<b>Total OPEX</b>	<b>8,588</b>	<b>8,932</b>	<b>8,943</b>	<b>8,933</b>	<b>9,266</b>
<b>ERO Proposals</b>					
Repair and Maintenance	1,077	1,061	1,045	1,029	1,014
Other operational expenses	5,940	5,834	5,752	5,671	5,591
Membership in international organizations <sup>4</sup>	330	330	330	330	330
<b>Total OPEX</b>	<b>7,347</b>	<b>7,225</b>	<b>7,127</b>	<b>7,030</b>	<b>6,935</b>

*Note: The efficiency factor does not apply in the line "Membership in International Organizations"*

<sup>4</sup> These costs will be adjusted on an actual basis, depending on the level achieved.



## 5.2 Loss Costs

To predict the costs of transmission losses, it is required to create an energy balance from which the total volume of revenues in the transmission system can be estimated, allowance of transmission losses and energy purchase costs to cover lost volumes.

The energy balance used for this purpose has been developed by ERO by implementing the following main principles:

- Energy sales to customers connected to the distribution use the forecasts provided by KEDS, as a Distribution System Operator, updated for 2018.
- Electricity losses, calculated using the allowances of losses determined by ERO, and non-billed supplies to northern Kosovo have been added to this consumption to gain the total energy supplied through the distribution system.
- The estimated supply by the generators connected to the distribution is deducted from this total to provide the supply required by the transmission system.
- The supply to customers connected to the transmission is also added to this, as provided by KOSTT, to yield the total of the energy supplied by the transmission system.
- Losses allowed on transmission are then calculated by this using allowances (expressed as percentages) proposed by ERO.

The allowance of transmission losses is based on the ERO Board's decision on the reduction target and the allowed loss curve for the second regulatory period 2018-2022.

The energy balance resulting from the application of the abovementioned principles is presented below.



**Table 2: Energy Balance**

		2018	2019	2020	2021	2022	
<b>Sales at DSO level</b>							
0.4kV	GWh	3,071	3,185	3,229	3,274	3,321	
10kV	GWh	311	289	294	298	302	
35kV	GWh	41	33	33	33	34	
Total	GWh	3,423	3,507	3,555	3,606	3,657	a
Unbilled supplies, North of Kosovo	GWh	263	262	266	270	274	b
<b>Losses in distribution</b>							
Allowance of Losses by ERO		18.80%	18.80%	17.60%	16.40%	15.10%	
Losses	GWh	853	873	816	760	699	c
Calculator for calculating losses	GWh	4,539	4,642	4,638	4,636	4,630	d = a + b + c
Generation connected to distribution	GWh	230	257	310	319	329	e
Input of energy in distribution from transmission	GWh	4,309	4,384	4,328	4,317	4,301	f = d - e
Consumption connected to transmission	GWh	738	739	743	747	752	g
Export	GWh	692	606	606	606	606	h
Output of energy from transmission	GWh	5,740	5,730	5,677	5,670	5,659	i = f + g + h
<b>Losses in transmission</b>							
Allowance of losses by ERO		1.78%	1.78%	1.78%	1.78%	1.78%	
Losses	GWh	104	104	103	103	103	j
Input of energy in transmission	GWh	5,844	5,834	5,780	5,773	5,761	k = i + j

The estimated cost of purchasing losses has used the prices realized in 2017 from the domestic market of 35.43 €/MWh and energy purchases from the import of 44 €/MWh. From this, it results that the purchase price for losses is around 42 €/MWh for 2018, with a decrease trend of about 40 €/MWh in the next four years for SRP2. These values have been applied for the regulatory period for the purpose of calculating the initial cost of losses.

Although the loss cost is updated annually, however, it is necessary to forecast loss costs to determine the initial MARs.

Differences arising from different forecasts of allowed prices and quantities between ERO and KOSTT are not relevant because they will be adjusted on an annual basis, being considered as costs beyond KOSTT's control.

Currently, these costs exclude unbilled energy costs supplied to northern Kosovo. Allocation of responsibility for accepting these costs of uncharged supplies is subject to a legal case that is taking place. ERO will make a decision in accordance with the court's final decision. Below is a proposal for the costs of transmission losses.



**Table 3: Proposals for the cost of losses**

€000s	Unit	FRP	SRP2				
		2017	2,018	2019	2020	2021	2022
		Allowed	Proposed	Proposed	Proposed	Proposed	Proposed
Proposed by KOSTT							
Transmitted energy	GWh	6,551	6,392	6,508	6,561	6,631	6,690
Allowance of losses	%	1.80%	1.86%	1.83%	1.83%	1.83%	1.84%
Losses	GWh	117.9	119	119	120	121	123
Purchase price	€/MWh	35.43	35.32	33.90	34.16	34.16	34.16
Total costs	€000s	4,178	4,199	4,038	4,102	4,145	4,205
ERO proposals							
Transmitted energy	GWh	6,551	5,844	5,834	5,780	5,773	5,761
Allowance of losses	%	1.80%	1.78%	1.78%	1.78%	1.78%	1.78%
Losses <sup>5</sup>	GWh	117.9	104	104	103	103	103
Purchase price	€/MWh	35.43	42	40	40	40	40
Total costs	€000s	4,178	4,369	4,154	4,115	4,110	4,102

Within the SRP2 period, annual adjustments to the allowed cost of losses will be made for the differences between the total transmitted volume of anticipated and realized energy and the average purchase price. Allowed loss (as a percentage) remains unchanged from what is shown here.

### 5.3 Ancillary Services

In the original documents submitted, KOSTT has included allowances for the costs of purchasing secondary and tertiary reserves<sup>6</sup>. These represent payments for resources contracted for power supply in case of deviations that may arise from natural or unexpected causes in the electricity system in order to maintain the frequency of the system and to avoid the fall of the load or even system collapse.

ERO has previously approved the inclusion of KOSTT's MAR reserve purchase costs and proposes that the same be done during SRP2.

KOSTT argues in the documents submitted that having applied for full membership in ENTSO-E<sup>7</sup>, it must meet the requirements of ENTSO-E to maintain tertiary reserves and, consequently, include

<sup>5</sup> The amount of losses on actual basis may vary depending on energy flows

<sup>6</sup> ENTSO-E defines secondary reserves that can be activated within 30 seconds and delivery of energy for 15 minutes. Tertiary reserves are activated within 15 minutes and deliver energy for several hours.

<sup>7</sup> ENTSO-E is the European Association of electricity TSOs. It coordinates the system operations related to the transmission of electricity throughout the Europe. Kosovo's application for full membership in ENTSO-E is



these costs in its allowed revenues. However, considering the current state and the political problems that KOSTT is facing, ERO cannot determine acceptable costs for tertiary reserves at this moment but will approve with annual updates, if there is any potential cost for this service.

The table below shows the proposed costs for ancillary services.

**Table 4: Cost proposals of ancillary services**

€000s	SRP2				
	2018	2019	2020	2021	2022
	Proposed	Proposed	Proposed	Proposed	Proposed
<b>Submitted by KOSTT</b>					
Secondary reserves	2,593	2,663	2,733	2,733	2,803
Tertiary reserves	6,832	6,832	6,832	6,832	6,832
<b>Total</b>	<b>9,425</b>	<b>9,495</b>	<b>9,565</b>	<b>9,565</b>	<b>9,635</b>
<b>ERO proposals</b>					
Secondary reserves	2,593	2,663	2,733	2,733	2,803
Tertiary reserves	-	-	-	-	-
<b>Total</b>	<b>2,593</b>	<b>2,663</b>	<b>2,733</b>	<b>2,733</b>	<b>2,803</b>

## 6 Capital Costs SRP2

### 6.1 Regulated Asset Base - opening RAB in SRP2

During FRP1, the incurred capital expenditures by KOSTT differ from those allowed at the time of MAR approval in FRP1. This is for a variety of reasons, including: change of requests, delays in procurement and delivery, identification of lower cost alternatives, overestimation/underestimation of costs, etc. There are also differences between actual and approved projects and programs in FRP1.

For determining the RAB for SRP2, ERO should identify which value of capital expenditure during PRR1 should be included in the RAB. A general regulatory principle is that licensees need to have incentives to realize lower-cost investments and should not derive from inefficiencies that cause greater capital spending than expected. Consequently, ERO has adopted the following approach in determining which investment programs and projects implemented during PRR1 should be included in the opening RAB of SRP2 and at what value<sup>8</sup>:

- For projects not commissioned during SRP1, no costs have been added at the opening RAB of SRP2.

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currently pending the consent of EPS of Serbia, which is the designated operator within the ENTSO-E for the combined system Serbia-Kosovo due to historical reasons.

<sup>8</sup> This approach is followed up and elaborated on the principles set out in the relevant Rule on Price.



- Projects that have not been approved during SRP1 but have emerged as a necessary investment need; KOSTT has sent justification which has been reviewed by ERO and proposes their inclusion at the initial value of RAB in SRP2.

On this basis, ERO proposes to allow the following capital expenditures during PRR1 to be included in the opening RAB in SRP2<sup>9</sup>. However, if in 2017 the financial statements are reported as different compared to the value of investments reported by KOSTT in the initial proposals, this difference will be reflected during the consultation process.

**Table 5: PRP1 capital expenditures included in opening RAB at SRP2**

Period	€000s
PRR1 approved	120,251
PRR1 realized	121,427
<b>Added to the opening RAB for SRP2</b>	<b>121,427</b>

*Note: The Capex realized for PRR1 was € 122,764 million in nominal terms. The figure shown above is after conversion in real terms, in accordance with the approved values*

## 6.2 Capital Expenditures SRP2

ERO has conducted a comprehensive review of capital expenditures proposed by KOSTT for SRP2. ERO with the support of USAID's consultancy, through the project Repower Kosovo, conducted a technical and financial assessment of capital investments of FRP1 and investment estimates in SRP2.

This review has included the following elements:

- An initial review of the proposed projects and programs included in the 5th Annual Transmission Network Investment Plan (5YNIP), which presents the capital expenditure proposed by KOSTT versus those listed in the 10-Year Network Development Plan (10YNDP).
- A review of KOSTT's average unit costs for key investment items versus regional operators to estimate cost justification. This review has concluded that KOSTT's proposed costs are within acceptable limits.
- Detailed cost benefit analysis (CBA) of major projects<sup>10</sup>, which should justify that they are needed and represent the lowest cost option.

After this review, ERO has determined that some projects should be removed from the proposed investment program by KOSTT, pending further consideration of their justifications, while the allowed cost for three further projects is reduced on the basis of that they seem overestimated. Projects that are removed are as follows:

<sup>9</sup> A technical report containing a more detailed list of adjustments made is provided separately for KOSTT.

<sup>10</sup> Based on the Rule on Capital Investment Assessment, the CBA needs to be prepared for projects that exceed 1 million Euros



- *Project ID 010: Installation of TR2 (40 MVA) in SS 110/10 (20) Klina.* Cost-Benefit Analysis shows that this project has net negative benefits, thus as proposed is unjustified.
- *Project ID 012: Repair of 110 kV line Prizren 1-Prizren 3 and Project ID 013: Construction of new 110 kV line Prizren 1-Prizren 2.* Low cost alternatives such as cable replacement and high voltage cable installation; Low flow should be analysed and evidence provided that KOSTT's proposal is acceptable.
- *Project ID 017: Repair of SS Klina and SS Burimi.* Cost-Benefit analysis shows that this project has net negative benefits, so as proposed is unjustified.
- *Project ID 020: Installation of solar panels in substations.* This project was expected to be entirely funded by the grant, but it is linked to a loan-financed investment. Given this, other comparative alternatives are required for the projects in question.
- *Project ID 022: Repair of 110 kV TL equipment in SS Vallaq.* This project was expected to be entirely funded by the grant, but it is linked to a loan-financed investment. Given this, other comparative alternatives are required for the projects in question.

Taking into account KOSTT's financial situation and the necessary investment needs during the consultation process, ERO will consult with KOSTT to see if there is a re-prioritization of investments in the investment plan 2018-2022.

A summary comparison of capital spending over the years as requested by KOSTT's application, and ERO's proposals after adjustments are provided below<sup>11</sup>.

**Table 6: Proposals for Capital Expenditures SRP2**

€000s		----- SRP2 -----				
	Total	2018	2,019	2020	2021	2022
		Proposed	Proposed	Proposed	Proposed	Proposed
Proposed by KOST						
Capital Expenditures	68,174	15,602	18,023	9,877	23,239	1,433
ERO’s proposals						
Capital Expenditures	51,932	11,476	16,478	7,355	15,552	1,071

*Note: Net capex upon the removal of some projects and grants*

### 6.3 Depreciation

Depreciation is calculated differently for pre-FRP1 assets and for assets added to RAB during SRP1 and SRP2. For pre-FRP1 assets, a standard residual useful life is applied to the asset weighted average. Assets added during PRR1 are divided into one of three categories with assumed average useful life of 5, 10 and 40 years. Assets added during SRP2 are divided into one of the six different asset useful lives ranges applicable to each. These categories and the useful lives of related assets

<sup>11</sup> A technical report containing a more detailed list of adjustments made is provided separately for KOSTT.



are presented below and are based on the ERO Board's decision on asset categorization and useful lives.

**Table 7 Categorization and useful life of KOSTT assets**

Asset type	Asset's useful life (years)
Buildings, roads, sewer networks, water supply, wells, elevators	50
HV network, pillars	40
Low voltage network, substations, transformers, etc.	30
Trucks, bins and work machinery	10
Control and Telecommunication, various equipment, fire protection	8
Furniture, office equipment	7
IT equipment, software, patents, licenses, vehicles, etc.	5

The depreciation resulting from the above proposed capital investments (additions) to SRP2 are presented in the table below.

**Table 8: Proposals to allow depreciation**

€000s	SRP2				
	2018	2019	2020	2021	2022
	Proposed	Proposed	Proposed	Proposed	Proposed
Opening RAB	222,749	224,145	229,885	226,095	230,058
Additions	11,476	16,478	7,355	15,552	1,071
Impairment/settlements	-59	-59	-59	-59	-59
<b>Depreciation</b>	<b>10,021</b>	<b>10,679</b>	<b>11,085</b>	<b>11,530</b>	<b>11,898</b>
Closing RAB	224,145	229,885	226,095	230,058	219,173

## 6.4 Allowed Return

The ERO Board has decided that the Weighted Average Cost of Capital (WACC) for KOSTT for SRP2 should be 8.3% (calculated on a real basis).

**Table 9: Allowed return proposals**

		SRP2				
		2018	2019	2020	2021	2022
		Proposed	Proposed	Proposed	Proposed	Proposed
Average RAB	€000s	84,297	94,190	101,381	102,903	101,115





		SRP2				
		2018	2019	2020	2021	2022
		Proposed	Proposed	Proposed	Proposed	Proposed
(excluding grants)						
WACC – proposed		8.3%	8.3%	8.3%	8.3%	8.3%
<b>Return – lower</b>	<b>€000s</b>	<b>8,497</b>	<b>9,220</b>	<b>9,729</b>	<b>9,768</b>	<b>9,528</b>

## 7 Deductions from MAR

### 7.1 Non-tariff revenues

In the submitted documents, KOSTT has identified three sources of non-tariff incomes. The first source represents incomes from the inter-OST compensation mechanisms (ITC mechanism) which compensates KOSTT for the energy transmitted to its system as a result of the international electricity trade. The second represents revenues from activities not related to electricity transmission, such as leasing of assets. ERO proposes to accept KOSTT's projections for these revenues.

The third source of non-tariff revenues included by KOSTT in the submitted documents represents net revenues from the ENTSO-E compensation mechanism. These represent the revenues incurred for unplanned electricity exports from Kosovo to neighbouring countries as a result of excess supply in Kosovo in relation to demand. In recent years, Kosovo has generally had 'excessive' supply (supply exceeds demand in Kosovo), therefore net revenues from this mechanism have been positive. KOSTT plans to continue this throughout the SRP2.

ERO proposes that the third source of non-tariff revenues be removed from the calculation of MAR, although the compensation mechanism is administered by KOSTT and the resulting net incomes are not maintained by it. Instead, they are distributed to market participants at the end of each month so that KOSTT's current revenues from this mechanism are zero.

**Table 10: Proposals of non-tariff revenue**

€000s	PRR1		SRP2				
	2017	2017	2018	2019	2020	2021	2022
	Allowed	Realized	Proposed	Proposed	Proposed	Proposed	Proposed
<b>Proposed by KOSTT</b>							
ITC mechanism	-	160	397	397	397	397	397
Non-tariff revenue	-	326	57	57	57	57	57
ENTSO-E Compensation	-	1,500	1,500	1,500	1,500	1,500	1,500
<b>Total</b>	-	<b>1,986</b>	<b>1,954</b>	<b>1,954</b>	<b>1,954</b>	<b>1,954</b>	<b>1,954</b>
<b>ERO's proposals</b>							
ITC mechanism	-	160	397	397	397	397	397



€000s	PRR1		SRP2				
	2017	2017	2018	2019	2020	2021	2022
	Allowed	Realized	Proposed	Proposed	Proposed	Proposed	Proposed
Non-tariff revenue	-	326	57	57	57	57	57
ENTSO-E Compensation	-	-	-	-	-	-	-
<b>Total</b>	<b>-</b>	<b>486</b>	<b>454</b>	<b>454</b>	<b>454</b>	<b>454</b>	<b>454</b>

## 8 Regular adjustments of 2017 and PRR1

This section presents the calculations regarding the regular annual adjustments of 2017 and capital investment adjustments of FRP1. Calculation of these adjustments will be included in the determination of allowed revenues for the regulatory period 2018-2022.

### 8.1 Adjustments to the Inflation Rate

In order to make the calculation of adjustments related to the inflation rate, ERO has taken into account the inflation rate published by Eurostat for the Eurozone countries, which for the year 2017 was 1.4%<sup>12</sup>.

This rate applies to adjusting operating costs, depreciation costs and return on equity. Following the application of the inflation rate of 1.4% to the above-mentioned costs, the cost value of 0.25 million euros is derived. Details of these calculations are presented in Table 11.

**Table 71: Adjustments of costs for inflation**

Line	Unit	Allowed	HICP	Adjusted costs
OPEX	mill €	6.47	1.40%	0.09
Depreciation	mill €	7.64	1.40%	0.11
Return	mill €	3.95	1.40%	0.06
<b>Total</b>	<b>mill €</b>	<b>18.05</b>		<b>0.25</b>

### 8.2 Adjustments to ancillary services

In 2017, KOSTT has been allowed to purchase reserves for ancillary services for operation as a separate regulatory area (according to the ENTSO-E rules) since June 2015, although these costs have not been realized during 2015-2016. Due to the non-realization of these costs in the previous years' reviews, ERO has deducted them. The value of these costs adjusted for 2017 is EUR -4.44 million.

### 8.3 Adjustments to costs of losses

Adjustment to loss costs to the DSO is done through the formula below:

<sup>12</sup> [https://www.ecb.europa.eu/stats/ecb\\_statistics/escb/html/table.en.html?id=JDF\\_ICP\\_COICOP\\_ANR&period=2017-12](https://www.ecb.europa.eu/stats/ecb_statistics/escb/html/table.en.html?id=JDF_ICP_COICOP_ANR&period=2017-12)



$$(LSSCat-1 - LSSCft-1) * (1 + I_t) + (LSSCat-1 - LSAC t-1) * LSSFt$$

The value of the adjusted loss cost is EUR 9.26 million which is due to the higher realized energy flows versus those forecasted and the average purchase price for 2017 losses in the distribution network. Calculation details are given in table 12.

**Table 12: Adjustments to loss costs**

DSO MAR	Unit	SHTe11 Allowed	SHTe11 Realized
<b>Indexing parameter</b>			
$I_t$	%		14.87%
<b>Allowed losses (LSSCt)</b>			
LSSAt	%	1.80	1.80
REUEt	GWh	6,389.50	6,681.20
WHEAt	€/MWh	35.43	43.89
LSSCat-1	mil€		5.28
LSSCft-1	mil€	4.17	
LSACt-1			5.17
LSSFt			0.50
<b>Adjusted costs</b>			<b>1.23</b>

Where:

$LSSA_t$	allowed losses, presented as the percentage of the energy entering the distribution system in the relevant year $t$
$REUE_t$	energy units (MWh) or (GWh) entering the distribution system in the relevant year $t$
$WHEA_t$	average of the wholesale energy cost (€ / MWh) in the relevant year $t$
$LSSCa_{t-1}$	realized cost of allowed losses in the relevant year $t-1$ , (calculated using allowed losses)
$LSSCf_{t-1}$	estimated loss cost in the relevant year $t-1$ , (calculated using allowed losses)
$I_t$	interest rate for the relevant year $t$ , calculated based on EURIBOR plus $S\%$ , where $S$ is the value to be determined by the Regulator during periodic reviews reflecting the premium payable by the licensee for short-term loans over the EURIBOR rate
$LSAC_{t-1}$	cost of realised losses by OST during the purchase of energy from the FPPE as a compensation for the energy lost in the distribution network in the relevant year $t$ (not calculated using allowed losses)



$LSSF_t$  is the loss-sharing factor in the relevant year  $t$ , determined during periodic reviews.

#### 8.4 Adjustments to the supply costs to northern Kosovo

During 2017, the supply cost of northern Kosovo is envisaged to be covered through transmission tariffs, in order for these costs to be distributed to all customers. Following the decision of the Court of Appeal for these costs to be removed from the final customer tariffs, ERO on 1 December 2017, through its guidelines, reviewed the transmission tariffs and reflected this change in the reduction of tariffs of the end customer by 2.5%. The value of these adjustments after applying the interest rate is EUR -3.05 million. Details of the calculation of adjustments to these costs are given in the table below:

**Table 83: The supply adjustments to northern Kosovo**

Description	Unit	Allowed	Realized	Adjustment
System losses	MWh	245,970	137,966	-108,004
Price of supply	€/MWh	35.43	43.89	-8.46
a) System costs	mil€	8.71	6.06	-2.65
Interest rate	%	14.87	14.87	-
b) Interest value	mil€			-0.40
<b>Total (a+b)</b>	<b>mil€</b>			<b>-3.05</b>

#### 8.5 The supply adjustments from KEK to KOSTT

After the expiration of the multi-year regulatory period 2013-2016 for KEK JSC, respectively the price deregulation of KEK JSC, ERO made adjustments for not conducting the allowed investments. This KEK adjustment is reflected in the deduction of KOSTT revenues, which are attributed to the expected loss coverage in the amount of EUR 10.7 million or in the amount of energy of 302 GWh. Since not the entire foreseen amount was provided to KOSTT by KEK, there were implications on KOSTT's costs as well. Therefore, ERO applied this adjustment/compensation to KOSTT, whose value after the application of the interest rate is EUR 6.82 million. Details of the calculation of adjustments to these costs are given in the table below:

**Table 9: The supply adjustments from KEK**

Description	Unit	Allowed	Realized	Adjustment
a) Revenues foreseen by KEK	mil€	10.71	4.77	5.94
Interest rate	%	14.87	14.87	-
b) Interest value	mil€			0.88
<b>Total (a+b)</b>	<b>mil€</b>			<b>6.82</b>



## 8.6 Adjustments to the corrective factor of revenues

The difference between Allowed Revenues from ERO for SHTE11 (2017) and Revenues realized by TSO/SO during the same period is calculated according to the following formula:

$$KREV_t = (AAC_{at-1} - ARR_{t-1}) * (1 + I_t)$$

With:

$AAC_{at-1}$  Actual Allowed Cost as determined in Relevant Year t-1

$ARR_{t-1}$  is the Actual Regulated Revenues in Relevant Year t-1

$I_t$  Interest rate for the relevant year t, calculated based on EURIBOR plus S%, where S is the value determined by ERO during periodic reviews reflecting the amount payable by the licensee for short-term loans.

Instead of the actual allowable costs  $AAC_{at-1}$  the allowed MAR is assumed since the adaptation costs, i.e. the current allowable costs, are carried forward in the forthcoming period, therefore  $AAC_{at-1}$  is considered to be equal to the allowed MAR.

The allowed MAR used for calculating the KREV was EUR 18.55 million, or MAR without KEK's revenue on behalf of losses, since they were initially deducted when determining the MAR 2017. In this meaning the designed tariffs aimed to cover revenues of EUR 18.55 million.

Revenues realized, or the  $ARR_{t-1}$  component represents revenues realized after the application of tariffs and unregulated revenues from other services (other operating revenues, imbalance revenues, transit revenues), namely it does not include revenues realized by KEK, since, as stated above, they are included as input costs when determining MAR.

The difference between MAR allowed by ERO of € 18.55 million and the realized (ARR) income by TSO/SO of € 19.13 million € will fit in SRP2. The value of this adjustment, after indexing the inflation rate, results to be EUR -0.66 million.



## 8.7 Summary of adjustments

The summary of adjustment results is presented below in table 15. The total value of these adjustments is EUR -0.69 million.

**Table 105: Summary of adjustments for 2017**

Components of adjusted costs	mil€
Adjustments to the inflation rate	0.25
Ancillary services	-4.44
Loss costs	1.23
Supply of northern Kosovo	-3.05
Supply of KEK to KOSTT	6.82
Unregulated revenue	-0.83
KREV	-0.66
<b>Total</b>	<b>-0.69</b>

## 8.8 Adjustments to capital investments at PRR1

There are a number of capital projects that were included in the approved PRR1 investment plan but which have not been implemented. In such cases, ERO applies the adaptation of the 'recovery' of allowed depreciation and allowed return related to these projects that were included in MAR of PRR1. Customers will be compensated for these adjustments during SRP2. This prevents KOSTT from benefiting from the proposal of investment projects where their costs are included in the MAR but which did not actually implement. Adjustments to the first regulatory period (PRR1) are calculated on the basis of assets that include grants and those that do not include grants. As in other adjustments, calculations are made taking into account the time value of money.

The value of adjustments (PRR1) is – EUR 5.61 million. Calculation details are provided below:

**Table 6: Depreciation and return adjustments for PRR1**

Allowed	Unit	2013	2014	2015	2016	2017	
Depreciation	mil€	5.24	6.64	7.01	6.97	7.64	
Return	mil€	1.62	3.34	3.57	3.26	3.95	

Current	Unit	2013	2014	2015	2016	2017	
Depreciation	mil€	5.11	5.49	6.35	7.42	8.21	
Return	mil€	1.56	1.78	2.49	3.48	4.43	

Adjustments	Unit	2013	2014	2015	2016	2017	Total
Depreciation	mil€	(0.13)	(1.15)	(0.66)	0.46	0.58	(0.90)
Return	mil€	(0.06)	(1.56)	(1.08)	0.22	0.48	(2.01)
HICP			0.70%	0.43%	0.21%	0.20%	
It	%	15.58%	15.25%	14.87%	14.90%	14.87%	
Non-levelled	%	(0.38)	(4.71)	(2.63)	0.89	1.21	(5.61)
<b>Levelled</b>	<b>%</b>	<b>(1.12)</b>	<b>(1.12)</b>	<b>(1.12)</b>	<b>(1.12)</b>	<b>(1.12)</b>	<b>(5.61)</b>



## 9 Maximum allowed revenues including adjustments

The maximum allowed revenues for the second regulatory period presented in Table 16 will now be adjusted to reflect the adjustments of 2017 and adjustments of the first regulatory period in relation to capital investments. In order for the adjustments not to affect the TSO/SO's financial liquidity, the value of these adjustments is distributed throughout the regulatory period 2018-2022.

### 9.1 MAR proposed for SRP2 by entity

Based on the above estimated operational and capital costs, following is the proposal for the KOSTT MAR (including OST/MO). For the purposes of determining transmission tariffs, these costs should be divided between three functions of KOSTT: those of the Transmission System Operator (TSO), the System Operator (SO) and the Market Operator (MO). The basis for this division is as follows:

- Existing assets as the opening of SRP1 are allocated between the three functions. RAB of the resulting SRP1 is further continued using the allowed capital expenses by function during PRR1 (adjusted as discussed above) and the estimated depreciation to give the opening RAB at SRP2 by function.
- Capital expenditures during SRP2 are allocated by function based on the nature of the projects in question. Allowed return and depreciation by function for SRP2 is calculated using the resulting RAB. The same WACC is applied to all functions.
- Base Opex is allocated between functions by using the allocation factors provided by KOSTT.
- Loss costs and ancillary services are allocated to the OST function, which is responsible for purchasing system services.
- Non-tariff revenues are allocated to the TSO as the asset operator used to provide transit services and other services to third-parties<sup>13</sup>.
- The Fund's costs for renewable resources managed by the Market Operator will be dealt with during regular annual adjustments.
- The remaining revenues from KEK related to the CAPEX updates have been distributed over 5 years in order to maintain the financial liquidity of the companies.

The proposed MAR resulting by function, per year during SRP2 is shown below.

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<sup>13</sup> If revenues from the ENTSO-E compensation mechanism are then included in the MAR calculation then these will be allocated to the TSO function.



**Table 117: MAR proposed for SRP2 by entity**

€000s	SRP2				
	2018	2019	2020	2021	2022
	Proposed	Proposed	Proposed	Proposed	Proposed
<b>Transmission System Operator (TSO)</b>					
Base Opex	5,510	5,432	5,354	5,277	5,202
Ancillary Services Costs	-	-	-	-	-
Depreciation	8,687	9,195	9,548	10,000	10,316
Allowed return	8,016	8,748	9,313	9,431	9,270
Non-tariff revenues	-454	-454	-454	-454	-454
Adjustments of 2017	-103	-103	-103	-103	-103
Capex adjustments - PRR1	-1,036	-1,036	-1,036	-1,036	-1,036
The revenues remaining from KEK (5 years)	-3,329	-3,329	-3,329	-3,329	-3,329
<b>Total</b>	<b>17,291</b>	<b>18,451</b>	<b>19,292</b>	<b>19,785</b>	<b>19,866</b>
<b>System Operator (SO)</b>					
Base Opex	1,573	1,555	1,538	1,521	1,504
Loss costs	4,369	4,154	4,115	4,110	4,102
Ancillary Services Costs	2,593	2,663	2,733	2,733	2,803
Depreciation	1,310	1,439	1,470	1,442	1,458
Allowed return	470	453	391	308	219
Non-tariff revenues	-	-	-	-	-
Adjustments of 2017	-27	-27	-27	-27	-27
Capex adjustments - PRR1	- 85	- 85	-85	-85	-85
<b>Total</b>	<b>10,203</b>	<b>10,152</b>	<b>10,135</b>	<b>10,003</b>	<b>9,975</b>
<b>Market Operator (MO)</b>					
Base Opex	264	238	235	232	228
Ancillary Services Costs	-	-	-	-	-
Depreciation	23	46	67	88	124
Allowed return	10	19	25	29	38
Non-tariff revenues	-	-	-	-	-
The renewable resources fund <sup>14</sup>	5,773	n/a	n/a	n/a	n/a
Adjustments of 2017	-6.9	-6.9	-6.9	-6.9	-6.9
Capex adjustments - PRR1	-0.3	-0.3	-0.3	-0.3	-0.3
<b>Total</b>	<b>6,063</b>	<b>296</b>	<b>320</b>	<b>342</b>	<b>383</b>
<b>Total KOSTT</b>	<b>33,557</b>	<b>28,899</b>	<b>29,746</b>	<b>30,129</b>	<b>30,223</b>

<sup>14</sup> These costs will be adjusted annually and are neutral to TSO and DSO network tariffs.