

# ENERGY REGULATORY OFFICE

## Case study in cost recovery and tariff implications (Review of elements in 2011 KEK tariff filing)



Pricing and Tariff Department

[www.ero-ks.org](http://www.ero-ks.org)

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# Licensees' Application Review

- oKosovo Energy Corporation (KEK) requested an increase tariff for 3.9%.
- oTransmission, System and Market Operator (KOSTT) requested an decrease tariff of 3.7%.
- oERO analyzed all categories of costs which were requested in the applications, prior to its proposal published in its Consultation Paper on February 22<sup>nd</sup> 2011
- oThis was followed by an analysis of licensee and stakeholder responses and final proposals, published in a Response Paper



# Methodology Overview

- Allowed costs are determined for each business and KOSTT using a ‘building block’ approach
  - *Allowed costs = opex + depreciation + WACC \* RAB*
- (WACC: weighted average cost of capital / RAB: regulated asset base)
- Cost line items are individually reviewed – typically against actual levels and allowed levels in previous years
- ERO also establishes allowed levels of technical and commercial losses to be recovered from regulated tariffs (collection losses are excluded)
- KOSTT (as TNO) and KEK Networks are required to purchase transmission and distribution losses. They keep the savings from reducing losses below allowed levels (and pay the additional costs of losses exceeding allowed levels)
- A number of adjustments are applied for changes in costs outside the control of licensees. Where licensees fail to make investments for which funds were allowed, the difference is ‘clawed-back’

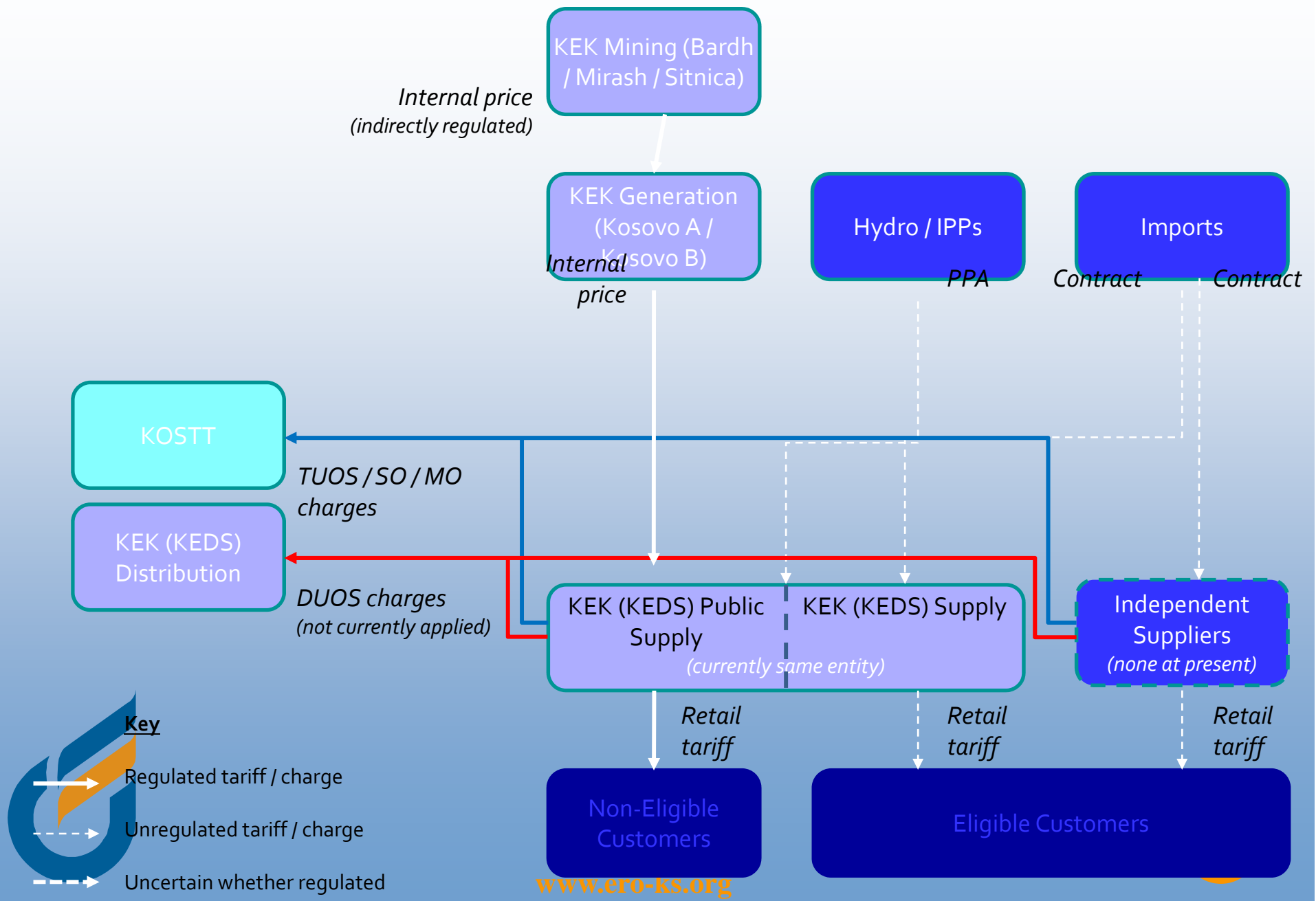


# Calculation of Tariffs

- ERO has developed a Revenue and Tariffs Model to assist in calculating allowed tariffs
- The model calculates cost-reflective tariffs for each customer category, broken-down into
  - customer (standing) charges
  - energy charges
  - demand charges
  - reactive power charges
- The resulting tariffs are then adjusted to give acceptable tariffs meeting social concerns, while leaving allowed revenues unchanged
- The model also calculates TUOS and SMO charge
- DUOS charges and an implied wholesale power price from KEK's Generation business to its Public Supply business are calculated but not currently published
- These will become important as eligible customers increase and tariffs are unbundled



# Current Regulations



# Electricity Balance

ELECTRICITY BALANCE			
		KEK Application	ERO Proposals
<b>Generation</b>			
Kosovo A	GWh	1.384,8	1.370,3
Kosovo B	GWh	3.382,9	3.382,9
HPP Ujmani	GWh	82,0	82,0
<b>Total generation</b>	<b>GWh</b>	<b>4.849,7</b>	<b>4.835,2</b>
<b>Trade</b>			
Imports	GWh	891,2	840,0
Exports	GWh	-194,2	-193,0
<b>Total supply at transmission</b>	<b>GWh</b>	<b>5.546,7</b>	<b>5.482,2</b>
<b>Transmission</b>			
Transmission losses	GWh	172,3	130,5
		3,0%	2,3%
Total transmission-connected sales	GWh	767,8	772,6
KEK internal consumption	GWh	126,4	126,4
<b>Distribution</b>			
Energy available from transmission	GWh	4.480,2	4.452,7
Distribution-connected generation	GWh	42,9	42,9
<b>Total energy supplied to distribution</b>	<b>GWh</b>	<b>4.523,1</b>	<b>4.495,6</b>
Technical losses	GWh	796,7	768,7
		17,6%	17,1%
Commercial losses	GWh	1.013,2	899,1
		22,4%	20,0%
<b>Total distribution-connected sales</b>	<b>GWh</b>	<b>2.713,2</b>	<b>2.827,7</b>
<b>Sales</b>			
Total transmission-connected sales	GWh	767,8	772,6
Total distribution-connected sales	GWh	2.713,2	2.827,7
<b>Total sales</b>	<b>GWh</b>	<b>3.481,0</b>	<b>3.600,3</b>



# Electricity Tariff Review 5

		Application 2011							ERO Proposed 2011						
		KEK				KOSTT			KEK				KOSTT		
		Mining	Generation	Networks	Supply	Total KEK			Mining	Generatior	Networks	Supply	Total KEK		
Operating Expenses	€000S	42.244	30.802	16.714	16.490	106.250	7.409	113.659	42.244	30.802	16.714	19.217	108.976	5.339	114.315
Depreciation	€000S	8.899	4.912	1.143	439	15.392	2.039	17.431	8.899	4.912	1.143	439	15.392	2.059	17.451
Return	€000S	22.152	6.663	3.308	1.421	33.544	1.209	34.754	22.152	6.663	3.308	1.421	33.544	1.302	34.846
Imports	€000S				53.166	53.166		53.166				50.114	50.114		50.114
Non-KEK Power Purchases	€000S				3.971	3.971		3.971				3.971	3.971		3.971
Ancillary Services	€000S					0	1.600	1.600					0	0	0
Allocated HQ Costs	€000S	5.551	2.639	1.945	1.926	12.061		12.061	5.551	2.639	1.945	1.926	12.061		12.061
<b>TOTAL ALLOWED COSTS</b>	<b>€000S</b>	<b>78.846</b>	<b>45.016</b>	<b>23.110</b>	<b>77.413</b>	<b>224.384</b>	<b>12.257</b>	<b>236.642</b>	<b>78.846</b>	<b>45.016</b>	<b>23.110</b>	<b>77.086</b>	<b>224.058</b>	<b>8.699</b>	<b>232.758</b>
Sales to Eligible Customers	€000S				0	0		0				0	0		0
Exports	€000S				-4.467	-4.467		-4.467				-4.467	-4.467		-4.467
Other Operating Income	€000S	-1.500	-1.600			-3.100		-3.100	-1.500	0			-1.500		-1.500
Subsidies	€000S				-33.050	-33.050		-33.050				-27.350	-27.350		-27.350
Adjustments	€000S	-1.861	-2.074	-1.809	11.829	6.085	-25	6.061	-1.861	-2.074	-1.809	-13.345	-19.088	-25	-19.113
<b>TOTAL ALLOWED REVENUES</b>	<b>€000S</b>	<b>75.485</b>	<b>41.342</b>	<b>21.301</b>	<b>51.725</b>	<b>189.853</b>	<b>12.232</b>	<b>202.086</b>	<b>75.485</b>	<b>42.942</b>	<b>21.301</b>	<b>31.925</b>	<b>171.653</b>	<b>8.674</b>	<b>180.328</b>
Total Public Supplier sales							GWh	3,481	Total Public Supplier sales						
Required average tariff							€/kWh	5,81	Required average tariff						





# Summary of Allowed Revenues for 2011

## Requested 2011 revenues

Regulated Retail Tariffs		2011
KEK (excluding cross-charges / including HQ costs)		
Mining	€000s	75,485
Generation	€000s	41,342
Network	€000s	21,301
Supply	€000s	51,725
KOSTT (excluding cross-charges)	€000s	12,232
<b>Total (with subsidies deducted)</b>	€000s	<b>202,086</b>
<u>Distribution losses</u>		
Total Energy Entering Distribution	GWh	4,523,1
Technical	%	17.6%
	GWh	796,7
Non-Technical (Commercial)	%	22.4%
	GWh	1,013,2
Sales to Transmission non-eligible customers	GWh	767,8
Sales to Non-eligible customers	GWh	2,713,2
<b>Total Public Supplier sales</b>	GWh	<b>3,481</b>
<b>Average Tariff (with subsidies deducted)</b>	€cent/kWh	<b>5.81</b>

## Allowed 2011 revenues

Regulated Retail Tariffs		2011
KEK (excluding cross-charges / including HQ costs)		
Mining	€000s	75,485
Generation	€000s	42,942
Network	€000s	21,301
Supply	€000s	31,925
KOSTT (excluding cross-charges)	€000s	8,674
<b>Total (with subsidies deducted)</b>	€000s	<b>180,328</b>
<u>Distribution losses</u>		
Total Energy Entering Distribution	GWh	4,495,6
Technical	%	17.1%
	GWh	768,6
Non-Technical (Commercial)	%	20.0%
	GWh	899,1
Sales to Transmission non-eligible customers	GWh	772,6
Sales to Non-eligible customers	GWh	2,827.6
<b>Total Public Supplier sales</b>	GWh	<b>3,600.3</b>
<b>Average Tariff (with subsidies deducted)</b>	€cent/kWh	<b>5.01</b>



# Capex Reconciliation of KEK

CAPEX RECONCILIATION							
		Mining	Generation	Network	Supply	HQ	Total KEK
<b>Capital expenditures</b>							
Allowed (donor-financed)	€000s	0	0	0	0	0	0
Actual (donor-financed)	€000s	0	0	0	0	0	0
Allowed (other financing)	€000s	73.500	30.000	26.400	465	5.400	135.765
Actual (other financing)	€000s	56.000	18.600	6.515	446	3.951	85.512
<b>Depreciation</b>							
Asset life	years	25	16	30	5	5	n/a
Allowed	€000s	1.470	938	440	47	540	3.434
Actual	€000s	1.120	581	109	45	395	2.250
Adjustment	€000s	-350	-356	-331	-2	-145	-1.184
<b>Return</b>							
WACC		13,10%	13,10%	13,10%	13,10%	13,10%	n/a
Allowed	€000s	4.814	1.965	1.729	30	354	8.893
Actual	€000s	3.668	1.218	427	29	259	5.601
Adjustment	€000s	-1.146	-747	-1.302	-1	-95	-3.292
<b>Total adjustment</b>							
Total before interest income/costs	€000s	-1.496	-1.103	-1.634	-3	-240	-4.476
Short-term interest rate		8,15%	8,15%	8,15%	8,15%	8,15%	n/a
<b>Total after interest income/costs</b>	€000s	<b>-1.618</b>	<b>-1.193</b>	<b>-1.767</b>	<b>-3</b>	<b>-259</b>	<b>-4.841</b>



# Allowed Revenues KOSTT

ALLOWED REVENUES		ETR4 Approved	ETR5 Approved
Operating Expenses	€000s	7.847	5.339
Depreciation	€000s	1.857	2.059
Return	€000s	934	1.302
Purchase of Losses	€000s	5.582	3.868
Ancillary Services	€000s	1.624	0
<b>TOTAL ALLOWED COSTS</b>	<b>€000s</b>	<b>17.844</b>	<b>12.567</b>
Adjustments	€000s	235	-25
<b>TOTAL ALLOWED REVENUES</b>	<b>€000s</b>	<b>18.080</b>	<b>12.542</b>
Volumes entering transmission	GWh	4.309	4.496
<b>REQUIRED AVERAGE CHARGE</b>	<b>€/kWh</b>	<b>0,42</b>	<b>0,28</b>
<b>Change</b>			<b>-33,5%</b>



# Reconciliation of KOSTT Allowed Revenues

RECONCILIATION OF ALLOWED REVENUES	€000s
<b>KOSTT Application</b>	<b>17.418</b>
Reduction in losses	-1.318
Personnel cost growth limited to CPI	-639
Maintenance set at 2010 actual	-1.248
Transfer of maintenance to capex	113
Reduction of Purchase of ancillary services	-1.600
Other overheads set at 2010 approved plus insurance	-184
<b>ERO Proposed</b>	<b>12.542</b>



# Import Cost

Import Reconciliation		
Allowed Imports (ETR <sub>4</sub> )	€000s	59.763
Actual Imports (ETR <sub>4</sub> )	€000s	39.664
Difference	€000s	20.099
Allowed Subsidies	€000s	50.000
Actual Subsidies	€000s	39.021
Difference	€000s	-10.979
<b>Reconciliated Amount</b>	<b>€000s</b>	<b>9.120</b>



# Electricity retail tariffs

Tariff Group	Voltage level of supply	Tariff elements	Unit	Time-of-day	Proposed	
					High season	Low season
					1 October - 31 March	1 April - 30 September
0'	220kv	Standing (customer) charge	€/customer/month		167.67	
		Standing (demand) charge	€/kW/month		13.26	
		Active energy (P), of which:	€/kWh		2.05	
0	110kv	Standing (customer) charge	€/customer/month		83.83	
		Standing (demand) charge	€/kW		5.59	5.59
		Active energy (P), of which:	€/kWh	High tariff	6.49	1.92
			€/kWh	Low tariff	2.70	1.58
		Reactive energy (Q)	€/kVArh		0.00	0.00
1	35kv	Standing (customer) charge	€/customer/month		11.08	
		Standing (demand) charge	€/kW		5.81	5.81
		Active energy (P), of which:	€/kWh	High tariff	6.79	2.94
			€/kWh	Low tariff	3.59	2.65
		Reactive energy (Q)	€/kVArh		0.66	0.66
2	10kv	Standing (customer) charge	€/customer/month		4.58	
		Standing (demand) charge	€/kW		5.01	5.01
		Active energy (P), of which:	€/kWh	High tariff	7.61	3.39
			€/kWh	Low tariff	4.10	3.09
		Reactive energy (Q)	€/kVArh		0.66	0.66
3	0.4kV Category I (large reactive power consumers)	Standing (customer) charge	€/customer/month		2.58	
		Standing (demand) charge	€/kW		2.91	2.91
		Active energy (P), of which:	€/kWh	High tariff	8.45	4.69
			€/kWh	Low tariff	5.33	4.43
		Reactive energy (Q)	€/kVArh		0.66	0.66
4	0.4kV Category II	Standing (customer) charge	€/customer/month		2.92	
		Active energy (P)	€/kWh	Single tariff	10.41	6.73
		Active energy (P), of which:	€/kWh	High tariff	12.53	8.21
			€/kWh	Low tariff	6.26	4.10
5	0.4kV (domestic 2-rate meter)	Standing (customer) charge	€/customer/month		2.08	
		Active energy (P), for consumption:				
		<200kWh/month (First Block):	€/kWh	High tariff	4.64	3.33
			€/kWh	Low tariff	2.33	1.66
		200-600 kWh/month (Second Block):	€/kWh	High tariff	6.43	4.60
			€/kWh	Low tariff	3.22	2.31
		>600 kWh/month (Third Block):	€/kWh	High tariff	9.33	6.68
			€/kWh	Low tariff	4.66	3.35
6	0.4kV (domestic, 1-rate meter)	Standing (customer) charge	€/customer/month		2.08	
		Active energy (P), for consumption:				
		<200kWh/month (First Block):	€/kWh	Single tariff	4.14	2.96
		200-600 kWh/month (Second Block):	€/kWh	Single tariff	5.73	4.10
		>600 kWh/month (Third Block):	€/kWh	Single tariff	8.31	5.96
7	0.4kV (domestic unmetered)	Estimated Consumption:				
		<200kWh/month	€/customer/month		21.50	
		200-600kWh/month	€/customer/month		38.92	
		>600kWh/month	€/customer/month		65.58	
8	Public lighting	Standing (customer) charge	€/customer/month		2.92	
		Active energy (P), for consumption:	€/kWh	Single tariff	8.42	8.42

High Tariff applies 07:00-22:00 Monday-Saturday during the High Season and 08:00-23:00 Monday-Saturday during the Low Season  
Customers registered as social cases are charged at a zero rate



# KOSTT tariffs and charges

Tariff group	Voltage level of connection	Tariff elements	Unit	Existing	Tariff
Generator	400kV / 220kV	Use of system (capacity) charge	€/kW/year	0,000	0,000
		System operator charge	€/MWh	0,934	0,483
		Market operator charge	€/MWh	0,018	0,015
Generator	110kV	Use of system (capacity) charge	€/kW/year	0,000	0,000
		System operator charge	€/MWh	0,934	0,483
		Market operator charge	€/MWh	0,018	0,015
Generator	Distribution	Use of system (capacity) charge	€/kW/year	0,000	0,000
		System operator charge	€/MWh	0,287	0,108
		Market operator charge	€/MWh	0,018	0,015
Supplier	400kV / 220kV	Use of system (capacity) charge	€/kW/year	4,057	3,225
		System operator charge	€/MWh	0,934	0,483
		Market operator charge	€/MWh	0,018	0,015
Supplier	110kV	Use of system (capacity) charge	€/kW/year	8,832	6,650
		System operator charge	€/MWh	0,934	0,483
		Market operator charge	€/MWh	0,018	0,015



Thank You

