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

INDICATIVE VALUES OF WACC OCTOBER2011

Prishtina, December 2011

1 _Introduction

The Pricing Rules applicable to the TSO, DSO, PES and Generation specify the manner in which Maximum Allowed Revenues (MAR) will be calculated so as to enable each company to recover the reasonable costs of providing services to the extent that those costs are justified and prudently asserted. Included in the MAR is the component that allows a return on capital.

The allowed return on capital is in turn calculated as a function of the Regulatory Asset Base (RAB) and the Weighted Average Cost of Capital (WACC).

This consultation paper is intended to provide indicative values of setting the WACC to market participants in electricity sector . Detailed descriptions regarding the calculation of WACC are provided in the Schedules to the pricing rules and it is the pricing rules that ERO will use to determine an appropriate value of WACC for regulatory purposes.

2 Methodology

Since 2006 ERO has used a Weighted Average Cost of Capital (WACC) developed in a position paper[1], referred to in this document as "the 2006 paper". This current paper updates the 2006 paper. Where changes are made, it is to reflect the present situation in Kosovo, including the possible entry of private sector participants (licensees) into the electricity market.

The approach ERO now proposes is to calculate a real pre-tax WACC according to the following formulae:

$WACC = (1 - g) * (rE) / (1 - t) + g * (rD)$

Where

WACC	*is the Weighted Average Cost of Capital*
g	*gearing (debt:debt+equity ratio)*
rE	*real cost of equity (expressed as a %)*
rD	*real cost debt (expressed as a %)*
t	*Kosovo corporate income tax rate*

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[1] Weighted Average Cost of Capital, Position Paper, 28 July 2006, ERO

The gearing (g) is the value proposed by the licensee. The cost of equity (rE) is the value proposed by the licensee, calculated using the Capital Asset Pricing Model (CAPM). The cost of debt (rD) is the average interest rate of existing long-term loans taking into account concessionary financing if applicable. Each of these components is addressed in further detail below.

A significant change made to the 2006 paper methodology is that the cost of debt is now based on the actual cost of debt and is the weighted average interest rate of existing long term loans, expressed in real terms.

Based on the 2006 paper methodology, the real pre tax WACC determined by ERO for the period 2007 and nominal WACC for 2008-2011 are as shown below. In 2010[2] the WACC rate was adjusted upwards to take into account previous inflation.

Table 1: WACC for years 2007-2011

Year	2007	2008	2009	2010	2011
WACC %	10.8	13.8	13.8	13.1	13.1
	Real WACC	Nominal WACC			

Note that in the updated pricing rules a real pre-tax WACC will be used. Whereas previously a nominal rate was used with a non-indexed value of assets to calculate the allowed return on assets, the updated methodology uses the real rate with an indexed asset base, including pre 2006 assets to calculate the allowed return on assets. The reader may refer to the consultation paper on the regulatory asset base (RAB) for additional details.

3 Gearing

The pricing rules specify that the gearing value is to be proposed by the licensee with the final value to be determined by the Regulator. Based on the 2006 paper, the values would be expected to be around 60%. While this value is not presently the case for the incumbent licensees and may not be achievable for private investors at the initial stage, this value is retained as guidance of how ERO expects the market to develop and provides a value that is consistent with commercially viable, efficient electric utilities regionally and internationally with an optimal capital structure.

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[2] ERO has recalculated in 2010 the allowed weighted average cost of capital (WACC) to take account of the reduction in corporate income tax in Kosovo from 20% to 10%.

The value to be determined by ERO will be based on a balanced consideration of the starting or current financing mix of the licensee and the financing mix that might be expected to be achievable in future taking account the financing mix of similar utilities internationally.

4 Cost of Debt

The approach taken in the new method, the cost of debt is based on the actual cost of debt and is the weighted average interest rate of existing long term loans, expressed in real terms.

For the current licensees this new approach is valid and is the most accurate way of determining the actual cost of debt in Kosovo, taking into account that loans include concessionary financing. For the potential investor, this approach removes some of the uncertainty associated with the differences between the market rates of debt and the estimated cost of debt as calculated in the 2006 paper.

In order to provide guidance to potential investors regarding the expected future values of WACC, which includes the cost of debt, ERO will still retain the 2006 paper methodology to estimate future values. This is summarized below.

$$rD = Rf + DRP$$

where:

rD real cost of debt

Rf risk free rate

DRP debt risk premium for the borrower

The 2006 paper estimated a risk free rate of 5.5% for Kosovo based on a group of reference countries. The risk free rate for Kosovo comprises two elements; the risk free rate in mature markets plus a country risk premium. ERO retains this approach based on similar updated data.

The second component is the debt risk premium (DRP) and estimated at 2-2.5% in the 2006 paper. In addition to the above components, the 2006 paper adds a further premium to the cost of debt of 0.4% to reflect the fact that smaller companies are unable to obtain loans at the interest rates available to large corporations. This premium is now updated to 0.5%.

Conditions in the international financial markets are expected to be difficult in the short to medium term so that accurate estimates of costs of debt are difficult.

5 Cost of Equity

The 2006 paper uses the simplified capital asset pricing model (CAPM) for determining the cost of equity and this methodology is retained.

$$re = Rf + \beta*(ERP)$$

where:

$$ERP = (Rm - Rf)$$

re   real return on equity

Rf   real risk free rate   as for debt above – 5.5%

Rm   market equity risk premium   (investing in the market as a whole)

ERP   equity risk premium

β   Beta is the coefficient representing the individual stock risk relative to the market risk

The return on equity Re is a value proposed by the licensee and determined by ERO and is calculated using CAPM as indicated above.

Rf is the risk free rate for Kosovo as indicated above – 5.5%

ERP is the additional premium required by investors over the risk free rate. The 2006 paper estimate for ERP was 5-6% , and ERO increased this figure in 6.5%. This estimated value is more realistic for Kosovo conditions..

Beta (β) is the covariance of return on the market as a whole and return on the individual equity asset. For power utilities it is normally less than unity. It is estimated at between 0.8 and 1.0 in the 2006 paper and this range is estimated as 1 %.

6 Return on Equity for Publicly Owned Companies

The assumed parameters in calculating return on equity, shown above , show return on equity from commercial investors (DSO). Therefore for other liscencees(public companies) ERO will take in consideration applications and benchmarks with similar companies and financing costs of capital in Kosovo and other European countries .

Goverment of Kosova , is the only owner of public regulated companies , can declare that return on equity from government for public companies is different from the one that was estimated from ERO. In this case, ERO will amend WACC in order to reflect return on equity as the one requested from the Goverment.

7 Indicative estimation of WACC

After receiving and reviewing the comments, ERO has set indicative targets of WACC for liscencees in electricity sector in Kosovo. ERO has also reviewed the parameters applied in other regional regulators(see the attachment) and came to a conclusion that they are not so different from the ones that are proposed from ERO.

Taking into account gearing of 50%, and setting Beta at 1, WACC results in 14.5 in nominal value.

Gearing of 50% represents ERO's view regarding longterm capital structure which is in accordance with the effective functioning of an operator of energy system and is comparabale with international levels.

ERO has shown its calculation of WACC below.

Table 2: Indicative WACC calculation

Component	Value	Notes
Risk-free rate		
Nominal	10.0%	a
US CPI (Oct 2011)	3.5%	b
Real	6.5%	c=a-b
For Calculation	6.5%	D
Gearing	0.50	E
Cost of debt		
Debt risk premium	2.3%	F
Small company premium	0.5%	G
Cost of debt	9.3%	h=d+f+g
Cost of equity		
Equity risk premium	5.8%%	I
Equity beta	1.00	J
Post-tax cost of equity	12.3%	k=d+i*i
Corporate tax rate	10.0%	L
Pre-tax cost of equity	13.7%	m=k/(1-l)
WACC		
Real pre-tax WACC	11.5%	n=e*h+(1-e)*m
Eurozone HCIP (Sep 2011)	3.0%	n
Implied nominal pre-tax WACC	14.5%	o=n+o

Annex: Regional WACC parameters

The table below lists the parameters used in recent WACC decisions for electricity distribution by a number of regional regulators and the indicative values used by ERO in this paper. In ERO's view, the values proposed by ERO are in line with or higher than those used by other regulators in the region.
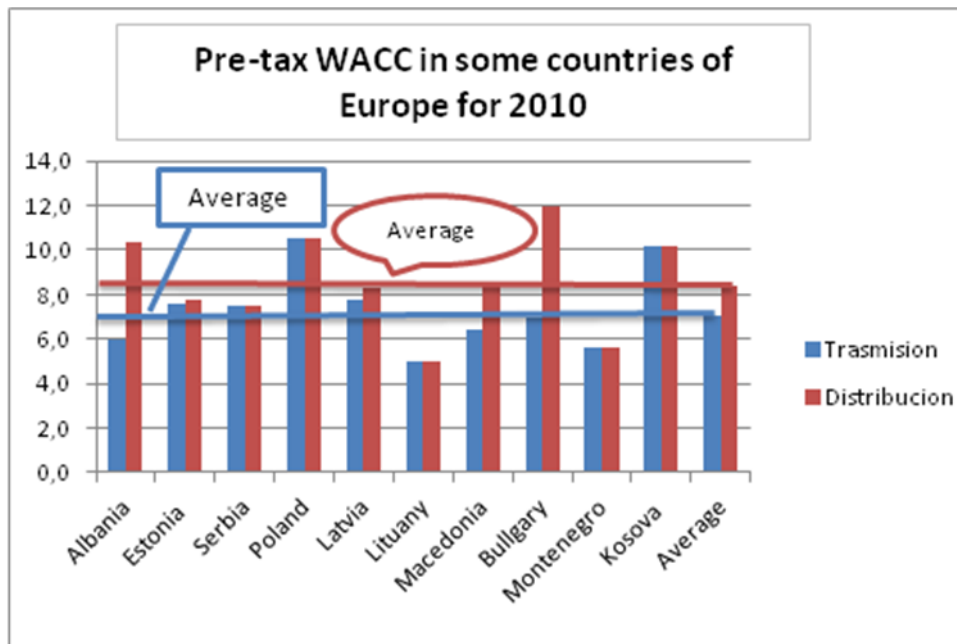
Table 3: Indicative WACC calculation

Component	Kosovo (indicative)	Albania (2010)	Macedonia (2009-11)	Moldova (2010)	Serbia (2010)
Risk-free rate					
Nominal	10.0%	7.43%	7.89%[a]	10.28%[a]	--
Real	6.5%	--	--	--	4.0%
Basis for calculation	*See main text*	1-year govt bond yield	Govt bond yield	n/k	Govt bond yield - inflation
Gearing	50%	60%	50.6%	35%	60%
Cost of debt					
Debt risk premium[b]	2.3%	0%	-0.21%[a]	-1.15%[a]	1.1%
Cost of equity					
Equity risk premium	5.8%	5.60%	0.36%[c]	5.26%	8.51%
Equity beta	1.00	1.32	1.00	0.977	0.705
Basis for calculation	CAPM	CAPM	CAPM	n/k	CAPM

Source: Presentation at ERRA Tariff/Pricing Committee meeting, 14-15 October 2010, Istanbul.

a   The data provided by Macedonia and Moldova is inconsistent, as it implies a negative debt risk premium. Therefore, the values provided for the risk-free rate must be treated with caution.
b   Calculated as cost of debt less risk-free rate. For Kosovo, this includes the small company premium.
c   The reason for this extremely low value is not clear.

WACC in some European countries

In the graph below is presented WACC(before tax) for System Operators of Transmision and Distribution for some members of ERRA.From which we can see that Kosovo in comparison with those countries have a higher value of WACC with the exception of Bullgaria and Poland (for DSO).

Source: Presentation on Tarrif Committe Meeting for Tarriffs and pricing ERRA, 14-15 October 2010, Istanbul.