



# **WACC**

## ***calculation methodology review***

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## REASONS FOR A REVIEW OF THE WACC METHODOLOGY

- The current WACC methodology adopted by AEEGSI was first introduced in the second electricity transmission and distribution regulatory period (2004).
- At the time, yields on Italian government bonds were a reasonable proxy for risk-free rates and it was generally assumed that market risk premium and interest rates were non correlated.
- Over the last six years, since the start of the global financial crisis, a number of unusual events have affected capital markets and macroeconomic condition across the globe, including the Eurozone countries.
- AEEGSI see the need to review the current WACC calculation methodology also to avoid that different market conditions at the time of the price revision lead to unjustified differentiations of allowed returns among regulated services.



## GENERAL APPROACH

Decision 597/2014/R/COM stated the general approach to be followed in the WACC calculation methodology review:

- the **allowed rate of return** is calculated as a **weighted average cost of capital**
- the allowed rate of returns will be calculated as *real* and *pre-tax*
- the cost of equity is calculated according to the ***Capital Asset Pricing Model (CAPM)***

## WACC REGULATORY PERIOD

AEEGSI intends to unify the WACC parameters, except  $\beta$  and gearing, for **all regulated activities of electricity and gas sectors**.

Unified WACC parameters will be set by AEEGSI for a period of time, called '**WACC regulatory period**'.

The proposed length of the 'WACC regulatory period' is **six years**.

**Sector specific WACC parameters** ( $\beta$  and gearing) to be normally set at the beginning of each sectorial price review.



## COST OF EQUITY

AEEGSI initial view is to calculate the cost of equity adding to the traditional CAPM formulation a specific term reflecting the **country risk premium (CRP)**

$$K_e = RF + \beta * ERP + CRP$$

where:

- RF is the risk free rate
- $\beta$  is a measure of the systematic risk of an activity
- ERP is the market risk premium



## RISK FREE RATE

To be consistent with the notion of a risk-free asset, AEEGSI proposed to estimate RF with reference to yields on government bonds, issued by Eurozone countries, rated at least “AA”.

Ten-year real yields estimated on the basis of current nominal spot values would be negative.

AEEGSI considers that negative yields are not consistent with economic expectations.

Therefore AEEGSI has indicated two different possible approaches:

- **forward looking approach 'corrected'**, with lower bound for the real RF of 0,5% rounding to the nearest half a percent (0,5%);
- **backward looking approach**: looking at the levels of nominal yields observed before the crisis (around 1,5%).



## MARKET RISK PREMIUM

AEEGSI envisaged the adoption of a backward looking approach, considering the difficulty in implementing solutions based on forward looking approaches, which, under a pure theoretical point of view, would be preferable.

Two options are under consideration:

- **ERP formulation:** ERP is estimated on the basis of long term evidences of the differential between total market return (TMR) and RF;
- **TMR formulation:** TMR is estimated on the basis of long term evidences of TMR. RF is estimated as described in the previous slide (forward looking or backward looking approach). ERP is obtained per difference.



## COUNTRY RISK PREMIUM

**CRP** reflects the compensation investors require to operate in a certain country.

Rating differentials among countries affect also companies ratings. **CRP** affects both cost of debt and cost of equity.

Two approaches to estimate *CRP* can be followed:

- evidence from **corporate debt markets**;
- evidence from **equity markets**.

According to initial evaluations **CRP** was estimated to vary between 0,5% and 1%.



## ACTIVITY SPECIFIC PARAMETERS

AEEGSI initial proposal was to estimate specific  $\beta$  for each regulated activity, considering evidences coming from Eurozone equity markets related to companies with high credit rating, in a period of about two years.

In AEEGSI's opinion  $\beta$  estimate cannot be considered as a pure mechanistic exercise. It is necessary to analyse the results and evaluate the coherence with the general regulatory framework evolution.

AEEGSI stated that it is oriented to set the **gearing** level taking into account the actual levels for regulated companies and considering the perspective of a gradual alignment towards the average levels adopted by other regulators.



## COST OF DEBT

From a theoretical point of view, cost of debt can be estimated adding to RF a *spread* determined on the basis of debt  $\beta$ . The implementation of this approach, however, presents some practical difficulties.

AEEGSI is examining the structure and the stratification of regulated companies' medium and long term debt.

AEEGSI is oriented to set the cost of debt in order to reflect the cost of efficiently incurred debt, considering the global sustainability, giving incentive to define efficient debt portfolios, taking into account evidences from capital markets.



## INFLATION

AEEGSI is oriented to directly estimate real cost of equity and real cost of debt, in order to avoid the problems emerged in the current regulatory periods, as a consequence of using a fixed inflation rate to deflate nominal rates.

AEEGSI considers that the right way to deflate nominal rates is using the inflation rate incorporated in nominal rates.



## MID-PERIOD REVIEW

In case a **TMR formulation** is adopted to set cost of equity, AEEGSI is oriented to review every two years the CRP level.

For the CRP review two approaches are possible:

- **trigger** approach: CRP will be reviewed only in case yields on ten years BTP benchmark reach a pre-fixed level;
- **indexation** approach: CRP is indexed to the spread between Italian ten years BTP benchmark and ten years German Bund.

In case an **ERP formulation** is adopted to set cost of equity, AEEGSI envisages a review of CRP and RF. The necessity to assess real yields on Eurozone high credit rating Government bonds implies the adoption of a **trigger** approach.

AEEGSI objective is to define **transparent and predictable review mechanisms**



## Timing

DATE	WACC methodology review	Document
December 2014	Launch	Decision 4 dicembre 2014, 597/2014/R/COM
June 2015	Initial proposal	Consultation paper 9 giugno 2015, 275/2015/R/COM
July 2015	Deferral of terms for tariffs approval in gas sector	Decision 2 luglio 2015, 321/2015/R/GAS
October 2015	Final proposal	
December 2015	Decision	



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**Thank you**

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## Current WACC parameters in the electricity sector (2014-2015)

	Description	TRANSMISSION	DISTRIBUTION	METERING
Rf	Risk free rate	4,41%	4,41%	4,41%
B levered	Sistematic risk of the activity	0,575	0,610	0,610
ERP	Market premium	4,00%	4,00%	4,00%
DRP	Debt Risk Premium	0,45%	0,45%	0,45%
Kd (nominal)	Debt rate	4,86%	4,86%	4,86%
D/E	Debt/equity ratio	0,8	0,8	0,8
T	Tax rate (%)	35,70%	35,70%	35,70%
Tc	Tax shield (%)	27,50%	27,50%	27,50%
RPI	Expected inflation rate	1,80%	1,80%	1,80%
WACC	Weighted average cost of capital	6,3%	6,4%	6,4%