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CEER Memo on
**Regulatory aspects of Energy
Investment Conditions in European
Countries**

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1 Introduction

Within the scope of their regulatory responsibilities, and given recent discussion and policy initiatives linked to promoting energy infrastructure investments, CEER provide again an overview of the role of energy regulation in the overall investment environment.

This overview outlines key elements used in energy regulation to assess value-for-money, efficiency and returns on investments for energy network infrastructure across Europe in the year 2014.

The calculation of an adequate rate of return, the determination of the regulatory asset base (RAB) and the depreciation of assets are major elements in any regulatory regime. The National Regulatory Authorities (NRAs) are aware that energy network infrastructure investors base their decisions on a wide range of relevant factors; including, for example, the time required for permitting processes or the stability of the regime over time.

Regulatory frameworks include of a variety of components that form a coherent package:

- the determination of the RAB (including, for example, the evaluation of efficient costs of assets, working capital, assets under construction etc.);
- the cost of capital (e.g. WACC);
- the depreciation rates;
- the application of benchmarking results;
- the inclusion of contribution from third parties;
- the treatment of under-recovery; and
- the pass-through of CAPEX for new investments.

In this respect, CEER notes that the various parameters presented below must be interpreted in the wider context of the relevant national regulatory regime.

CEER considers repeated that in a system with a mature regulatory framework, the regulatory assessment will generally consist of several individual decisions which need to form a coherent package. Investors build up their understanding of the regulatory environment and the rules in which they work. Therefore, any changes could upset the balance or put investments at risk (e.g. by questioning how the RAB is valued or the return applied to it).



Given the coherent package formed by each regulatory regime, any effort meant to harmonise one of the components at EU level would consequently impact on the entire package. This could, in turn, be highly disruptive to regulatory predictability.

Tariff regulation schemes are highly complex. As such, a direct comparison of certain parameters such as capital costs is difficult and should only be done by taking into account the context of the entire regulatory system¹.

2 Major regulatory aspects

With regard to the major elements of the regulatory regime for the treatment of network investments, both the whole regulatory regime (e.g. standard costs, lifetime of the assets, historical or replacement costs) and the interaction of the relevant parameters in this respect must be considered; for example, the combination of rate of return and the regulated asset base.

2.1 Values of the real cost of equity

The values for real cost of equity for 2014 (by way of example) can be derived from the equity beta multiplied by the market risk premium and added to the real risk-free rate.

Taking into account that the calculated real cost of equity is sensitive to the inflation rate, CEER finds that:

- The **real cost of equity** calculated on the basis of the original beta is between **3% and 8% for the electricity sector** and between **1% and 9% for the gas sector** (on average across 24 European countries². If outliers are excluded, the value of the real cost of equity will be 5% to 7% for electricity and gas companies alike.
- The regulatory framework, especially with respect to the remuneration of the RAB, can also influence the level of the rate of return.

¹ See ACER work on the [harmonisation of tariff structures](#) (gas).

² Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain and Sweden



- Generally speaking, the real risk free rate is higher in those countries whose GDP lie below EU average. The lowest value of the real risk free rate is found in countries with a stable economy. The equity beta (ca. 0.5-0.95) multiplied by the market risk premium (0.5%-6.5%) appears to be generally low. The cost of equity also depends on the year in which the assessment is made.

While there is often a difference between the individual components of the weighted average cost of capital (WACC) used by NRAs³, the variation of the WACC itself is not so great; the differences may reflect national conditions, namely domestic capital and energy markets.

The value of asset beta is generally lower in the electricity sector than in the gas sector.

The analysis of beta could lead to the conclusion that the gas sector is considered more risky than electricity. Beta values can also differ between Transmission System Operators (TSOs) and Distribution System Operators (DSOs), yet the values are often identical. It may therefore be the case that there is no significant difference between the investment conditions for TSOs and DSOs.

2.2 Regulatory Asset Base

From a balance sheet perspective, fixed assets are the most significant items for energy network utilities. It is common practice to include fixed assets as a component of the RAB. Many countries also include **working capital** in the RAB, albeit with specific rules for its determination and inclusion. **Investment in progress** is included in the RAB in some countries for gas and electricity distribution and for gas transmission networks. On the other hand, for electricity transmission networks, investment in progress is predominantly included in the RAB. Contributions by third parties are generally deducted from the RAB.

Historical costs method is the most common way for calculating the RAB components, followed by the re-evaluated assets method, with the mixture of these two methods applied only rarely.

³ Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovenia, and Sweden



2.3 Depreciation

Once a depreciation method (straight line or accelerated depreciation) has been chosen at national level, it is then applied for both gas and electricity network operators. **Straight line depreciation** is applied by most NRAs in gas and electricity regulation.

In the electricity sector, most NRAs apply the same depreciation rate value for typical TSO and DSO network assets alike. NRAs do use different depreciation values, with the majority using historical values in different variations; the same applies for the gas sector.

The linear method is predominantly applied for the depreciation of the regulated assets. The lifetime of a typical network asset ranges from 30 to 55 years and NRAs typically apply an individual depreciation ratio for each type of asset. However, in some regulatory regimes an average ratio for all companies and all assets is applied. Just as in the case of RAB valuation, the depreciation of assets might be based on historic values, re-evaluated values or on a mixture of these two methods. The vast majority of regulators allowed depreciation of tangible and intangible assets valued on the same basis as the RAB in their regulation, hence clear correlation between these values can be observed.

3 Further considerations

CEER notes that the discussion about the adequacy of national regulatory frameworks for incentivising infrastructure investments is still ongoing. The Agency for the Cooperation of Energy Regulators has already initiated work on its task (under Art. 13 (5) TEN-E Regulation) to support Projects of Common Interest (PCIs) and regulators will continue in this regard to assess information concerning the specifics of PCIs in depth.

CEER would stress in this context that any EU level action to encourage additional investment incentives must take into account that the development of adequate risk-return ratios is already a core competence of regulators as part of their regulatory assessment and review of network investments. In effect, incentives under the present national regulatory frameworks have already delivered billions of euros in energy infrastructure investments. Regulators need to consider the costs of equity in depth in their respective assessments.

The combination of these individual components (as outlined above) and their complex interplay form the cornerstones of the risk profile of a regulatory framework and consequently also the willingness of investors to invest.



The specific way these components work together in a mature national regulatory framework needs to be carefully considered when analysing the issue of incentives. A simplified harmonisation of a single component may therefore potentially do more harm than good as the risk profile (as balanced by the relevant NRA in often a very lengthy process) may be disturbed. Any future guidance regarding incentives must therefore duly consider that NRAs have the expertise and experience in evaluating the risk of their respective regulatory framework and that NRAs need sufficient discretion with regard to decisions taken on which incentive is deemed appropriate.