CEER Memo on

Regulatory aspects of energy investment conditions in European countries

4 July 2013

Ref: C13-EFB-09-03

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RPM 0861.035.445

1. Introduction

Within the scope of their regulatory responsibilities, and given recent discussion and policy initiatives linked to promoting energy infrastructure investments, CEER considers it timely to provide 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.

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 national regulatory regimes. National Regulatory Authorities for energy (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 are comprised 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 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, unexpected changes may eventually 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 system.

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 2012 (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 just under **3% and 8% for the electricity sector** and between over **1% and almost 9% for the gas sector** (on average across 24 European countries[1]). 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.
- Generally speaking, the real risk free rate is higher in those countries whose GDP lies below EU average. The lowest value of the real risk free rate is found in countries with a stable economy. Due to a lower risk, the equity beta (ca. 0.5-0.95) multiplied by the market risk premium (0.5%-6.5%) is rather low for the utility sector when compared to other sectors. 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 WACC (weighted average cost of capital) used by NRAs[2], 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 TSOs (transmission system operators) and DSOs (distribution system operators), yet are often identical; therefore it could be that there is no significant difference between the investment conditions for TSOs and DSOs.

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

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

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.

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. The EU policy context

CEER notes that the entry into force of the new Guidelines for trans-European energy infrastructure (TEN-E, Regulation 347/2013/EC) on 15 May 2013 has brought the adequacy of national regulatory frameworks for incentivising infrastructure investments to the forefront of the debate. ACER (the Agency for the Cooperation of Energy Regulators) has already initiated work on its task (Art. 13 (5) of the TEN-E Regulation) to facilitate the sharing of good practices and make recommendations regarding incentives for PCIs (projects of common interest) on the basis of a benchmarking of best practices by NRAs.

CEER would stress in this context that any EU level action to encourage additional investment incentives has to 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.

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 the expertise and experience of NRAs in evaluating and developing their respective regulatory frameworks over time, on the basis of their shared common experience NRAs use this expertise, within the wider regulatory context, to determine which incentives may be appropriate.

About CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national regulators of electricity and gas at EU and international level. Through CEER, a not-for-profit association, the national regulators cooperate and exchange best practice.

A key objective of CEER is to facilitate the creation of a single, competitive, efficient and sustainable EU internal energy market that works in the public interest.

CEER works closely with (and supports) the Agency for the Cooperation of Energy Regulators (ACER). ACER, which has its seat in Ljubljana, is an EU Agency with its own staff and resources. CEER, based in Brussels, deals with many complementary (and not overlapping) issues to ACER's work such as international issues, smart grids, sustainability and customer issues.

The work of CEER is structured according to a number of working groups and task forces, composed of staff members of the national energy regulatory authorities, and supported by the CEER Secretariat.