

Submission Title: Regulatory Cost of Capital in Electricity Transmission: objectives, dilemmas and methodologies

Category: Energy and Finance

Keywords: WACC, Implicit Cost of Capital, Multifactor Methodology, Power Transmission

Abstract

Overview

The improvement of current methodologies and the development of new scientific methods to determine the regulatory cost of capital are crucial to harmonize: (a) electricity transmission risks and complexity; with (b) the capital cost of opportunity.

The attraction of investments, transmission services quality and tariff affordability depend upon the methodological robustness of the regulatory cost of capital estimation. In Brazil, the Capital Asset Pricing Model (CAPM) is the methodology currently in use to estimate both the cost of equity and the cost of debt, the two components that form the basis for the calculation of the WACC (Weighted Average Cost of Capital).

The Brazilian Electricity Regulatory Agency (ANEEL) has recently concluded a Public Hearing (AP 41/2017) that aimed at gathering contributions to enhance the periodic tariff review proposal of the “Annual Allowed Revenues” (*Receitas Anuais Permitidas* - “RAPs”) for the power transmission concessionaries, more specifically related to the regulatory operational costs and regulatory cost of capital (WACC). Since Public Hearing AP 41/2017 was inconclusive, ANEEL decided, in May 2018, to postpone the definition of the criteria and procedures to estimate the new WACC.

More recently, ANEEL’s Public Consultation 15/2018 (CP 15/2018) reestablished the discussion aiming at gathering information and subsidies to foster the enhancement of the WACC calculation methodology for power distribution, transmission and generation.

In July 2018, a new R&D project under the R&D program regulated by Aneel was launched with the goal of developing broad structural analysis involving the regulatory cost of capital in power transmission. The project will approach conceptual discussions aimed at establishing the drivers that define long-term economic and financial equilibrium of regulated sectors based on quantitative models that provide the essence of the regulatory cost of capital.

In addition to the methodological contributions, the R&D project is also intended to provide empirical references of the cost of capital in other regulated sectors and in other countries, thus seeking to minimize information asymmetry between regulators and regulated companies.

Methodology

Extensive global databases (Capital IQ) will be analyzed using quantitative methodologies in order to: (a) enhance the estimation methodology of the regulatory cost of capital; and (b) analyze the applicability and soundness of the eventual adoption of two other calculation models, besides CAPM, to estimate the cost of equity: (1) multifactor; (2) implicit cost of capital.

Expected results

The results of the aforementioned R&D project – under development – will be delivered in the first quarter of 2019 and will address major dilemmas and controversies of Public Hearing 41/2017, aiming at improving future regulatory processes with replicable and structural contributions. In sum, the R&D project will allow the comparison of a range of regulatory capital cost estimation methodologies, and the establishment of cost of capital benchmark levels on a multi-sector and multi-country basis.

Conclusions

The products of this R&D project may be of high applicability in future tariff review processes in the power transmission sector, thus fulfilling the objectives of representing the opportunity cost of a rational investor, and harmonizing the regulatory risk-return dynamics of the business.

In addition to the contributions to the power transmission sector, it is possible to extrapolate the results of this R&D to: (a) the tariff review of the power distribution sector, whose challenges related to the estimation of its regulatory cost of capital – as described in Aneel's Public Hearing 066/2017 – are very similar to the transmission sector; (b) the power generation sector, since Aneel's Public Consultation 15/2018 (CP 15/2018) also addresses the estimation of regulatory capital cost for "quota generators", whose revenues are regulated via the Annual Generation Revenue (*Receita Anual de Geração* - RAG), a concept that depends on the calculation of a regulatory cost of capital.