Analysis and Review of the Evaluation Methodology for Research and Development Projects in the Brazilian Electricity Sector


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Introduction

- The Law 9.991/2000 obliges the companies of the electricity sector in Brazil to annually apply a minimum percentage of its Net Operating Revenue (NOR) in Research and Technological Development (R&D) projects;

- This program is regulated by the Brazilian Electricity Regulatory Agency (ANEEL). From 2000 to 2014, around US$ 400 million have already been invested;

- The great problem for these companies is in the high volume of resources disapproved, which reaches US$ 33 million/year (~33%);

- The disapproval of resources occur due to non-compliance with the minimum criteria established by the regulatory entity.
Objectives

✓ Examine the legal framework of the ANEEL’s R&D program;
✓ Analyze its regulatory aspects, as well as its directives and guidelines that regulate the elaboration of projects;
✓ Present the program, its elaboration format and the phases of the innovation chain. We will also focus on the project evaluation criteria.
Evaluation Methodology of R&D ANEEL

✔ Kinds of Products:
  ✔ Concept or methodology;
  ✔ Software;
  ✔ System;
  ✔ Matter or substance;
  ✔ Component or device;
  ✔ Machine or equipment.

✔ The Innovation Chain:
  ✔ Basic Research Directed - BR;
  ✔ Applied Research - AR;
  ✔ Experimental Development - ED;
  ✔ Head of Series- HS;
  ✔ Pioneer Lot- PL;
  ✔ Market Insertion- MI.
The R&D ANEEL is evaluated according to 4 main criteria related to the results obtained:

- Originality;
- Applicability;
- Relevance;
- Reasonability.

Each criterion receives a note:

- 1 (Inadequate);
- 2 (Insufficient);
- 3 (Acceptable);
- 4 (Good);
- 5 (Excellent).
Survey with experts on the evaluation process currently adopted by ANEEL and on suggestions for improvement of this process;

This survey involved the 4 evaluated criteria (Originality, Applicability, Relevance, Reasonability);

In the following, it will be presented the main issues approached that cause more controversy in the evaluation process.

All the answers to the questions in the questionnaire have been prepared in an objective way, and assigned a score of 1 (one) to 5 (five), where:

- 1 for Totally Disagree;
- 2 for Partially Disagree;
- 3 for Do not Agree or Disagree;
- 4 for Partially Agree;
- 5 for Totally Agree.
About the ORIGINALITY criterion:

1 – Is it correct to consider the originality criterion as eliminatory?

2 – Could other evaluation criteria also be considered eliminatory?
About the ORIGINALITY criterion:

3 – Would it be relevant to assign separate grades to the originality of the product and technique?
Note: this is intended to give greater clarity to the evaluation process.

4 – Would it be interesting to create parameters that could guide the assignment of the "Originality" criteria?
About the APPLICABILITY criterion:

1 - It is correct to evaluate the applicability through the sub-criteria “Product Applicability” and “Scope of Application”? Note: What is proposed in this case is that these sub-criteria should be grouped into one and then the scope and the functionality should be evaluated.

2 – Would it be interesting to assign separate grades for subcriteria “Product Applicability” and "Application Scope"?
About the APPLICABILITY criterion:

3 – Should the functionality of a project be a sub-criterion for evaluating the "applicability" of a project?

4 – Would it be essential for a project to have the potential to become a market product, and should this be a criterion to be evaluated?
About the RELEVANCE criterion:

1 – Is it sufficient to evaluate the relevance of a project by the subcriterion of professional, scientific, socio-environmental and economic relevance?

2 – Would it be correct to include an item about "Overall Relevance" as a criterion for assessing relevance?
About the REASONABILITY criterion:

1 – Is it correct to evaluate the reasonability of a project through the "reasonableness of resources used" and "economic benefits"?

2 – Is it relevant to carry out Economic Feasibility Studies for Projects in the early stages of the innovation chain?
Conclusion

✓ The legal framework governing the development of the Brazilian R&D program has been evolving over the last 18 years, leading to a better distribution of investments, as well as progress in the evaluation process;

✓ Key findings of the survey:
  ✓ Lack of consensus among experts regarding the evaluation process;
  ✓ There is a need for greater involvement and interaction of all stakeholders and interested parties to reach a consensus on the evaluation process of these projects;
  ✓ For ANEEL, it is evidenced that there is still room for evolution of this process, which need to be considered in order to have a fairer, egalitarian and impartial evaluation process of R&D projects in Brazil.
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Thank you! Questions?