Editorial

We have recently seen , both in the industry and in regulatory institutions, a movement towards the optimization and explicitness of results obtained within programmes leveraging activities related to R&D and innovation projects. The evolution and maturity of these programmes rely on such movements, attempting to achieve greater effectiveness in innovation-driven activities. One of the main aims is to break the barriers likely to diminish or even prevent the generation of innovative solutions, which can bring benefits to the country and to society, without, nonetheless, giving up managerial mechanisms that can measure results and provide background to replan activities which show to be inadequate.

We hope that these initiatives can yield the desired effects so that benefits can be brought to society, promoting its development. As far as this scientific journal is concerned, we will continue to stimulate the publication of innovation-driven works arising from scientific projects, with intent to aid the development of the scientific community and society as a whole.

This issue presents four papers, one of which as result of an R&D project within the programme sponsored by the national electric energy agency – ANEEL, another carried out within an internal initiative of Copel – Companhia Paranaense de Energia, and the two remainders as result of post-graduate programmes taken by employees.

The first work explores the benefits brought by a relatively new imaging modality, based on laser, and called Light Detection and Ranging (LiDAR).

This modality provides high-density scanning and therefore, in certain regions of the area being studied, adds some unnecessary complexity in the image processing. The paper proposes a model aimed at simplifying the grid generated so that performance can be improved.

The implementation of a static state estimator, a very important tool used to estimate the value of variables based on measurements performed on a system, is an initiative by professionals of Copel for the System Operation Control. The experience is reported in the second paper of this issue, including details of the implementation process, difficulties encountered and solutions produced in the work.

Another work related to the field of Computer Science is reported in the third paper, which describes a support solution to the decision making process based on computer intelligence applied to the problem of allocating electric energy distribution network maintenance teams, aiming at reducing costs due to system interruptions. The paper reports in a practical way the benefits the proposed methodology can bring for the energy utility company.

Finally, the complexities of the electric energy system and its related risk factors are addressed in the paper which reports the development of a tool with the aim of aiding the decision making process in a utility company. The work addresses the measurement of the profitability of an energy generation agent operating in a complex system such as the Brazilian interconnected grid, emphasizing the return-risk analysis.

We hope the works presented in this issue may drive the attention of the readers and foster knowledge, innovation and experience sharing among professionals of the energy sector.

Klaus de Geus
Editor