

A Five Year review of PLMI

*Know all your lines
all the time!*



September - December 2012

9th- 12th September

International Association for Energy Economics (AIEE) Conference, Venice, Italy

João Gomes-Mota from Albatroz Engineering participated in the AIEE Conference in Venice where he presented a paper co-authored with Francisco Azevedo from Universidade Nova de Lisboa and Luís Campos Pinto and Jorge Casaca of REN - Rede Eléctrica Nacional, the portuguese Transmission System Operator. The paper focuses on environmental issues affecting the reliability of the transmission grid and was written in the context of a three year R&D project involving the three organisations.



The conference focus was on environmental sustainability with a clear focus on econometrics and prospective studies for future energy markets between 2030 and 2050.

Research findings show how market devices persuade people, companies and governments to adopt a more sustainable use of energy by means of efficiency measures, replacement of energy sources, multi-purpose use of energy. Renewable energy sources were on the spotlight

as incentives in Europe seem to have overheated industries and need to be reviewed in order to allocate public resources to technologies at earlier stages of maturity.

Reliability and risk management were also discussed as distributed, intermittent non dispatchable power plants enter electrical systems. Other panels were dedicated to developing countries and how to promote the efficiency in energy starved regions that face rapid growth in population, production

11th- 13th September

International Conference on Advanced Robotics for the Power Industry, Zurich, Switzerland

In September, the Eidgenössische Technische Hochschule [ETH] Zürich (Federal Institute of Technology in Zurich, Switzerland), hosted the 2nd edition of "**International Conference on Advanced Robotics for the Power Industry**", designated CARPI 2012.

Albatroz Engineering's Sandra Antunes, a aeronautics researcher and PhD student at the University of Beira Interior (Portugal), was present alongside companies and research groups to learn and share the results of their developments in the fields of robotics and unmanned air inspection systems and crawlers for over-head lines; crawling robots for power stations and hydro plants. A technical exhibition with some prototypes and contributions from local students also attracted much attention from the participants.

For more information, CARPI 2012: <http://www.carpi2012.ethz.ch/>

24th- 26th September

CIGRÉ Canada 2012 Conference at Montreal

The work that Albatroz Engineering has been developing in a joint project with REN (Rede Eléctrica Nacional, S.A.), the Portuguese Transmission System Operator (TSO), concerning overhead lines (OHL) risk analysis, was presented by Francisco Azevedo at the 2012 CIGRÉ Canada Conference, held at the Hilton Montréal Bonaventure.

The paper [Francisco Azevedo, João Gomes-Mota, Luís Campos-Pinto, Nélio Machado, and Susana de Almeida de Graaff, *OHL Assessment and Risk Evaluation Based on Environmental and Inspection Data*, in 2012 CIGRÉ Canada Conference, CIGRÉ-119 paper, www.cigre.org] was collaboratively written with REN co-authors as well as with Susana Graaf, currently working at TenneT (Dutch TSO), a former REN worker that developed her PhD thesis there, on Portuguese Transmission Grid Incidents Risk Assessment, a basis of our current joint work.

In brief, a methodology has been developed to calculate OHL risk indices, and is currently being further implemented and extended. It relies on the achieved and continued collection of historical data (including Power Line Maintenance System three-dimensional data), together with the knowledge of asset characteristics and system operation conditions, which are structured in a generalized relational database. This model includes a comprehensive set of different environmental, meteorological and geographic data over the years. Short and long term risk indices are then calculated based on the probability of failure for each span or group of spans and aggregated for a whole line.

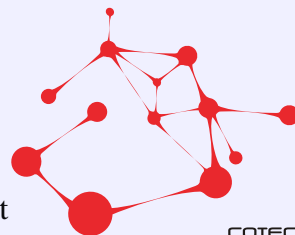
Moreover, the criticality of each line depends on its probability of failure, as well as on its severity under specific operating conditions. This new methodology aims to provide control room operators with risk-based security indices for the following period (such as 1 hour). Risk indices provide an insight to operators of the network state and of the constraints that operators face. Long term indices allow better planning at different levels, such as maintenance, inspections, and investments.



CIGRÉ Canada, Conference at Montreal

21st November

Innovative SME Network COTEC (Rede PME Inovação COTEC)



COTEC
REDE PME
inovação

It was during the 6th Network's Meeting, that took place on last November 21st at Culturgest Auditorium in Lisbon, that Albatroz Engineering became a member of the Innovative SME Network COTEC.

COTEC is a NGO association with the mission of *“promoting the competitiveness of companies established in Portugal, through the development and the diffusion of a culture and a practice of innovation as well as of knowledge, especially that generate in our country”*, (COTEC, 2012). Created in 2005 with 24 companies, the Innovative SME Network has now almost 200 members.

Albatroz Engineering believes that innovative solutions are the key leverage factor for our clients' competitiveness. Innovation is not always the creation of something new. Often, it concerns the application of existing solutions in new and creative ways. This is the culture that have guided Albatroz Engineering in its business so far and will continue to advocate in the future.

Therefore, it is not by chance that Albatroz became one of the newest members of the Innovative SME Network COTEC. It's because both defend the same principles of innovation, competence, competitiveness and recognize the value-add of knowledge. As one of the intervenients mentioned during this Network Meeting: *“companies aren't good because they belong to the Innovative SME Network; they belong to it because they are good”*.



Eng. Sofia Matias receiving the diploma of Innovative SME Network COTEC from the President of Portugal

ALBATROZ Engineering
www.albatroz-eng.com

Research, Development and Innovation

Rua Maria 53, 1 Esq, P-1170-210 LISBOA PORTUGAL