

Curriculum Vitae

Cristian Bovo was born in Sesto San Giovanni, Italy in 1973. He obtained his MSc and PhD degrees in Electrical Engineering from the Politecnico di Milano in 1998 and 2002 respectively. Soon after completing his PhD degree he joined Department of Electrical Engineering at Politecnico di Milano, as a Postdoctoral researcher and was subsequently promoted to Assistant professor. In 2008, he moved the department of Energy in the same university.

Ing. Bovo is a member of the Italian Federation of Electrical, Electronics and Telecommunications (AEIT) and the Institute of Electrical and Electronic Engineers (IEEE). From May 2006 he is a member of the Technical CT3/16 structure of the information, documents, graphics, signs and other identification (ex CT 3, CT ex 16) of the CEI (Italian Electrotechnical Committee). He is also a reviewer of the international journal Electric Power System Research.

His major research activities are mainly in the transmission planning and reliability in the competitive electricity markets. He is also interested in optimization techniques applied to power systems planning and operation. In particular, the recent research activity of ing. Bovo has covered the following topics:

- Optimization Techniques - Both classical optimization techniques and modern heuristic optimization techniques such as genetic algorithms, neural networks, fuzzy systems and neuro-fuzzy-genetic techniques.
- Congestion Management - In particular on financial instruments for congestion management in recently liberalized Italian electricity market and evaluation of Total Transmission Capability (TTC) using Monte-Carlo approach.
- Power Market Simulation - Simulating Italian electricity market using conjectural supply function (CSF) and supply function equilibrium (SFE) models for analyzing strategic interaction of electric firms and impacts of Kyoto protocol on the electricity sector. In addition, he has done extensive research into Ancillary Services Market of Italy.
- Optimal reactive power flow and reactive planning in presence in large wind power plants;
- Integration of large renewable energy sources (RESs) in the energy system.

Ing. Bovo received the best paper awards at 9th International Conference on Harmonics and Quality of Power (ICHQP 2000), Orlando, Florida and at the IEEE PowerTech 2003.

He worked for several research projects including “Possibility to adopt multiobjective optimization in the balance market” (ENEL Research, 1999), “Technical and economic requirements for the connection of power stations to the transmission system in Italy”, Electricité de France, 1999, “Simulation of the operation of Market Splitting in Italy”, Electricité de France, 2002. “Innovative methods for the management of electrical systems under the free market in electricity”, MURST, “Technical issues regarding the authorization and construction of lines with priority access to the electricity grid interconnection (merchant lines)”, Techprom Srl, 2003, “Estimation of the incremental capacity for the merchant line Cagno Mendrisio”, Techprom Srl, 2003, “Tools for performance evaluation of static and dynamic control of voltage and reactive power flows in the electricity transmission network”, CESI SpA, 2003-2004, “Order of Service to the technical assistance activities in the investigation by the Electricity and Gas with Resolution n.112/03”, AEEG 2004, “Study the impact of the flexible mechanisms under the Kyoto Protocol on the cost of electricity in Italy in a competitive electricity market”, Fondazione Luigi Einaudi, 2004, “Evaluation of instability voltage of the power system”, CESI SPA, 2004-

2005, "Order of Service for investigation regards the deliberations of 09/09/04 n.152/04" AEEG, 2004-2005, "Order of Service for analysis of the functioning of the electricity system-rif.M04/265", AEEG, 2004-2005, "Optimization of the voltage profiles", CESI SPA, 2005, "Estimation of the national electricity system of new network investments", REF 2005, "Analysis of network aimed at determining the structure and zonal limits and their TTC", Energia SpA, 2005, "Studies aimed at the preliminary design of the power plant of the New Bastioni", EDERA SRL, 2005, "Analysis of the zonal structure and limitations of transport between the market areas in South and Central-South", RETRASM SRL, 2006, "Searching for the optimal mix of energy sources for the future generation of national park", Politecnico di Milano - Enel Produzione, 2006, "Order of service for technical assistance activities with regard to analysis of the functioning of the electricity system," AEEG, 2006-2007, "Analysis of the zonal structure and limitations of transport between the market areas in Calabria, Rossano, South and Central-South", RETRASM SRL, 2007, "Study to 2008 of the Gissi power plant in relation to the possible evolution of the electricity grid and the zonal structure and its limitations in transport", RETRASM SRL, 2008, and "The security of the voltage profiles to face the uncertainties induced by the presence of electricity markets", Cofinanziamento MIUR, 2005.

After the Italian blackout of Sept. 2003, the research group of Milan became technical consultant for the Italian Authority for Electricity and Gas (AEEG) to define the responsibility of the blackout. Ing. Bovo was an active member of this group. The research group of Milano, moreover, started in 2004 a public Forum (organized by the Politecnico di Milano and by the Fondazione Politecnico) titled Reliability of Electric Energy Supply in a Competitive Market (RESCOM). In this contest, ing. Bovo organized, together with prof. Berizzi, the activity of Market and Security Working Group.

Ing. Bovo's teaching interests are in electrical machines, electricity market and energy and the environment. Undergraduate and post graduate courses taught or being taught by Ing. Bovo includes: "Systems and electrical machinery", "Planning and operation of power system", "The physical market of the energy", "RIDEF - Energy for Kyoto: renewable energy, decentralization, energy efficiency", "Sustainable strategies and programs for energy and environmental management", "Design, manufacture and operation of Turbomachinery in the energy sector", "Advanced Training Course in Energy Commodity Trading & Finance (MEF)", "The physical market of energy", "The ancillary serviced market", and "Tools for saving energy: white certificates and green certificates".