

**AGCO Seminar**

**Speaker:** Jérôme De Boeck, University of Liège, Bélgica.

**Title:** Bidding problems in European deregulated electricity markets.

**Abstract:**

In this talk, we consider a bidding problem in European deregulated electricity markets. The goal of this problem is to maximize the profit of a Generation Company (GC) by choosing the best possible bids to propose to a Market Operator (MO) whose tasks is to minimize the daily price of electricity for the retailers. This problem has many challenging features to consider such as unit commitment for the GC, a market clearing system for the MO and demand and productions capacities are subject to increasing uncertainty due to renewable energies. Most studies in the literature try to solve these problems separately in order to build the best possible bidding strategy. The focus in our studies of bidding problems is to build a model integrating all features together to be able to prove the optimality of the solutions found.

Two variants of a general bidding problem are considered, one focussing on integrating uncertainty, the other on integrating a complete unit commitment model. We present general observations of the structure of a bidding problem as well as specific observations for both problems. This leads us to two different solving methodologies, one based on dynamic programming, the other based on a classical bi-level problem reformulation through KKT conditions. The observations of both problems considered allow to significantly improve previous formulations presented in the literature in term of solution quality and solving times.

**When:** October 23, 3:00pm.

**Where:** Sala de Seminario Von Neumann, 7th floor, CMM, Av. Beauchef 851, torre norte.

