

Management Science Seminar

Modelling the Impact of Market Interventions on the Strategic Evolution of Electricity Markets

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Monday, March 6th, 2006
Time: 1pm to 2pm
Room: TBA

Abstract: This paper presents a large-scale computationally intensive model for understanding the strategic evolution of electricity generating asset portfolios in response to various market interventions, and the consequent longer term effects of such changes on market structure and prices. We formulate a two-stage model involving a Cournot representation of the wholesale electricity market, the performance of which then determines plant trading between players and the co-evolution of market structure. An algorithm to model this game is presented. We apply this model to the full England and Wales system, as it was in 2000, and simulate the strategic responses to divestiture, capacity targets and the two market mechanism variants of pool and bilateral market clearing.

Keywords: Cournot, electricity, evolution, games, oligopoly, regulation.

Bio: Fernando is a lecturer in the Operational Research and Information Systems Group at Warwick Business School. He was previously Assistant Professor of Management Science at Universidade do Porto and a Visiting Lecturer at Cass Business School. He holds a Licenciatura in Economics, a Masters in Artificial Intelligence, both from Universidade do Porto, and a PhD in Decision Sciences from London Business School. His main research interests include constraint logic programming, game theory, simulation and electricity markets modelling.