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ATTENDANCE CERTIFICATE

To whom it may concern

We certify that **Xavier Heredia** has participated in the *Conference on Numerical Optimizations and Applications in Engineering,* organised by the CRM and held in Bellaterra (Barcelona, Spain) from October 13 to 15, 2010 and has given a talk entitled *"Electricity market optimization: finding the best bid through stochastic programming"*.

Abstract: The participation in national and international electricity markets has became a very complex decision making process. Electrical utilities participating in such liberalized market have to decide daily the operation, generation scheduling and optimal bid of each one of their generation units in several consecutives day-ahead markets. In the talk, we will describe the operation rules of the Iberian Electricity Market (MIBEL), how this operation can be mathematically modelled with the help of stochastic programming into large scale nonlinear integer problems and how these difficult optimization problems can be solved with specialised algorithms. Finally, the results found for several cases with real data of Spanish utilities and MIBEL market prices will be shown.

Bellaterra, October 15, 2010

Joaquim Bruna

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Joaquim Bruna
CRM Director