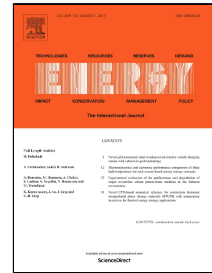


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Stochastic energy market equilibrium modeling with multiple agents

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# Stochastic energy market equilibrium modeling with multiple agents<sup>1</sup>

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## Abstract

The energy markets are characterized by many agents simultaneously solving decision problems under uncertainty. It is argued that Monte Carlo simulations are not an adequate way to assess behavioral uncertainty; one should rather rely on stochastic modelling. Drawing on economics, decision theory and operations research, a simple guide on how to transform a deterministic energy market equilibrium model - where several agents simultaneously make decisions - into a stochastic equilibrium model is offered. With our approach, no programming of a stochastic solution algorithm is required.

**JEL classification:** C63; C68; D58; D81; Q28; Q40; Q54

**Key words:** uncertainty; stochastic equilibrium; Monte Carlo; energy modeling

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