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Abstract: This paper describes a multi-agent based simulation (MABS) framework to construct an artificial electric power market populated with learning agents. The artificial market, named TEMMAS (The Electricity Market Multi-Agent Simulator), explores the integration of two design constructs: (i) the specification of the environmental physical market properties and (ii) the specification of the decision-making (deliberative) and reactive agents. TEMMAS is materialized in an experimental setup involving distinct power generator companies that operate in the market and search for the trading strategies that best exploit their generating units' resources. The experimental results show a coherent market behavior that emerges from the overall simulated environment. (c) 2010 Elsevier B.V. All rights reserved.

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