Title: A risk-averse optimization model for trading wind energy in a market environment under uncertainty

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Abstract: In this paper, a stochastic programming approach is proposed for trading wind energy in a market environment under uncertainty. Uncertainty in the energy market prices is the main cause of high volatility of profits achieved by power producers. The volatile and intermittent nature of wind energy represents another source of uncertainty. Hence, each uncertain parameter is modeled by scenarios, where each scenario represents a plausible realization of the uncertain parameters with an associated occurrence probability. Also, an appropriate risk measurement is considered. The proposed approach is applied on a realistic case study, based on a wind farm in Portugal. Finally, conclusions are duly drawn. (C) 2011 Elsevier Ltd. All rights reserved.

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