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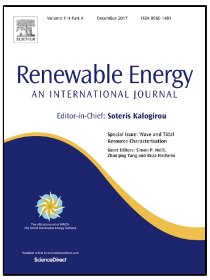

Strategic Gaming of Wind Power Producers Joined with Thermal Units in Electricity Markets

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Highlight:

- Improving the proposed scheme for joining wind power producers with non-wind generating firms by considering both positive and negative balancing costs.
- Evaluating the improved scheme at supply function equilibrium of the market.
- Proposing a formula for computing the optimal capacity of the joined non-wind generating firm and evaluating its accuracy.
- Performing a sensitivity analysis for the variation of wind speed PDF parameters, i.e. slope and shape parameter of the Weibull PDF, and wind turbine parameters, i.e. cut-in and rated-output speeds of wind turbines. Results show the profitability of the joint scheme for all range of the variations.
- Performing a sensitivity analysis for the parameters of marginal cost function of the joint thermal power plant, i.e. its intercept and slope. Results shows that the proposed scheme is profitable for all range of the values of the intercept of the marginal cost function, but its profitability reduces for very low or very high values of the slope of the marginal cost function of the joint thermal power plant.