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Production cost minimization versus consumer payment minimization in electricity pools

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Abstract-

Algorithms that involve some kind of optimisation have been adopted by several electricity pools as a tool to clear the market. Traditionally, this kind of models were used on a cost minimising basis, but recent papers have pointed out that alternative dispatches may be obtained that, even with higher production costs, provide cheaper electricity prices for consumers. This paper studies this new payment-minimisation approach, focusing on the long-term economic signals that it provides and analysing their impact on future investments. Our results show that minimising consumer payment results in discriminatory scheduling for certain generation resources and may cause, in the long-run, higher prices for consumers.

Index Terms- Deregulation, power generation dispatch, pool design, market clearing algorithm, unit commitment, marginal pricing

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