

Wholesale marginal prices in competitive generation markets

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Abstract-

Wholesale marginal electricity prices are being used in several actual competitive generation markets worldwide, both to remunerate generators and to charge consumption. These prices must account not only for energy, but also for guarantee of supply in the long and the short term. This paper: a) provides a sound conceptual and quantitative foundation for wholesale pricing based on generation services, where any existing restrictions in operation or planning in real power markets are accounted for, b) clearly establishes the relationship between short term marginal costs, long term marginal costs and optimal wholesale electricity prices, and c) identifies the reasons for mismatches in cost recovery with marginal generation prices. The theoretical results are verified with a detailed realistic power system model.

Index Terms-

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