Security of electricity supply at the generation level: problem analysis

P. Rodilla, C. Batlle

Abstract— Since the very beginning of the restructuring process, back in 1982 in Chile, the ability of an electricity market to provide the system with the required level of security of supply has been put into question. The mistrust on the ability of the market, left to its own devices, to provide sufficient generation availability when needed, is more and more leading to the implementation of additional regulatory mechanisms. This matter is undoubtedly gaining importance and it has taken a key role in the energy regulators' agendas. In this paper, we revisit this discussion under the light of thirty years of electricity market experience. We analyze the different reasons why, although ideally the market is supposed to provide itself an adequate security of supply at the generation level, this result is still far from being achieved in practice.

Index Terms— Electricity market rules; Security of generation supply; Regulatory intervention

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