

The utilization of wind energy in the Brazilian electric sector's expansion

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Abstract

The Brazilian electric sector's supply crisis established in 2001 urges for short, medium and long term solutions. In this scenario, renewable energy sources, specially wind energy, gain distinction as a feasible alternative of seasonal stability in energy supply by means of complementation between natural wind regimes and hydro utilization, the basis of Brazilian's electric origin, as well as the utilization of the vast renewable natural resources potential existent in the country. An alternative renewable sources utilization program can include distinct technologies such as: biomass; solar energy; wind energy and small hydroelectric stations among others. Amongst the alternative technologies presented, the present article focuses on evaluating the opportunities of wind resources utilization, taking into consideration the Brazilian experience in wind utilization; the national potential; the legal boundary in formation and the barriers and opportunities presented to the development of this technology. The choice of wind energy is explained by its large worldwide growth at a competitive price and due to it being completely feasible in a large part of Brazil's territory from the perspective of the existence of a vast and reliable wind potential for immediate utilization.

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1. Introduction

Until the 1970s, the expansion of the Brazilian electric energy market was determined by income from scale economies obtainable by the development and use of technologies that guaranteed a growing raise in transmission and generation equipment capacity. This technological paradigm guarantees the maintenance of a technological accomplishment and its institutional stability, sustained by continuously overcoming technical difficulties and intrinsically related to the order of the necessary adjustment to the institutional and economic model adopted by National State's economies.

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