

## WIND POWER CONVERSION IN BRAZIL

*Stefan C. W. Krauter<sup>1,2)</sup>, Johannes Kissel<sup>2,3)</sup>*

<sup>1)</sup> *State University of Ceará (UECE)  
Departamento de Física, Energias Alternativas,  
Av. Paranjana 1700, Fortaleza 60740-000 CE, Brazil  
Phone: +55-85-88445463, Fax: +55-85-32992804  
e-mail: krauter@uece.br*

<sup>2)</sup> *Technical University Berlin (TUB)  
Institute for Energy and Control Technology  
Department of Renewable Energy Technology  
Einsteinufer 11, D-10587 Berlin, Germany  
Fax: +49-30-314-221133*

<sup>3)</sup> *Federal University of Rio de Janeiro (UFRJ)  
Department of Energy Planning, Brazil.*

*Keywords:* Wind energy, Wind power generation, Power generation control

### ABSTRACT

This paper presents a current overview of the electricity supply system of Brazil, the potential for wind power conversion, and considerations for the planning and operation of wind power systems connected to the electrical grid. While the presently installed capacity is 28 MW only, the PROINFA program will increase installed wind power generation capacity to at least 1,100 MW until 2006; therefore concerns from the utilities in terms of grid capacity, grid stability and power quality are rising. For most applications, modern wind converter equipment using direct-driven variable speed wind converters with four quadrant inverters, should not cause any problems - it even enables to improve the power factor of the existing grid. Nevertheless, attention should be paid to a proper layout of the system and to grid enforcements.