

## Article Abstract

<b>Title:</b>	Analysis of the power system impacts and value of wind power
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<b>Abstract:</b>	Present electricity grids are predominantly thermal (coal, gas), hydro and nuclear based. Conventional power planning involves hydro-thermal scheduling and merit order dispatch. In the future, modern renewables (wind, solar, biomass) are likely to have a significant share in the power sector. This paper presents a method to analyse the impacts of wind power in the electricity grid. The short term and long period effects of wind power on the grid are elaborated. A duration curve based approach has been developed. Wind energy has been treated as negative loads to obtain a modified load duration curve from which capacity savings in terms of base and peak load generation can be computed. The methodology is illustrated for Tamil Nadu (a state in India). Scenarios for 2021-22 have been constructed to illustrate the methodology proposed. This technique can be useful for power planners for an analysis of renewables in future electricity grids.
<b>Keywords:</b>	Wind energy, power systems, duration curves, fluctuations