

## Proposed Location of Grid Connected Wind-Pv Hybrid System Based on Load Flow and Voltage Stability Indices Study

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**Abstract :** Rapid depletion and prices of the conventional energy sources have stimulated the development of the renewable energy source (RES). Due to the unpredicted and intermittent nature of RES, the hybrid renewable energy system (HRES) is the best solution to complement the nature of the respective sources, and the combination of the wind and solar energy is rapidly gaining popularity. The significant challenges on the operation and planning of the grid system with a high HRES penetration has become an important subject since the location of HRES plant give impact towards the existing system. This paper aims to propose the location of the grid connected Wind-PV hybrid plant (WPHP) based on load flow and voltage stability indices study. Several case studies are carried out using IEEE 14 bus system, and the system is modeled and tested in DigSILENT PowerFactory.

**Keywords :** hybrid renewable energy system, wind farm, photovoltaic system, voltage stability and load flow

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