Title:	Virtual Synchronous Generator Control of Stand-Alone PV Station to Enhance Voltage Stability
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Published Conference Name:	2021 IEEE Region 10 Symposium (TENSYMP 2021)
Type of Publication:	International Conference
Volume:	Issue
Publisher:	IEEE
Publication Date:	October 04, 2021
ISSN:	2642-6102
DOI:	10.1109/TENSYMP52854.2021.9550928
URL:	https://ieeexplore.ieee.org/document/9550928
Other Related Info.:	Pages 194-199

Abstract:
With the increasing integration of renewable energy resources (RESs) like photovoltaic (PV) systems to the rural consumer may affect the voltage stability during network disturbance situations. This is due to the fact that the conventional inverter system of the PV station cannot inject sufficient reactive power at a transient state. Therefore, to solve this issue, this paper proposes a virtual synchronous generator (VSG) control mechanism of the PV system to enhance voltage stability. The proposed VSG emulates the behavior of conventional power plants and control the reactive power more effectively during the network disturbance event. To justify the validity of the proposed VSG control PV system, simulation analysis, and comparison study has been done with the conventional control mechanism of the PV system.

Keywords: PV plant, transient stability, virtual synchronous generator (VSG), voltage stability