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## Monitoring a grid-assist photovoltaic system

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Recent developments in electricity regulatory environment and the possible inclusion of small, kW-scale, photovoltaic (PV) systems in the feed-in tariff framework has led to an increased interest in these systems. In South Africa, grid reliability issues are not fully mitigated by employing a straight grid-tie PV system, with users sometimes wanting some battery backup for load-shed periods at night. In this study a system comprising a PV array, maximum power point tracker, a battery bank and inverter was monitored using a custom-build data acquisition system. The monitored parameters include; environmental conditions, DC and AC power, and energy flow within the system. This paper will discuss the influence of environmental parameters and load requirements on the performance of the system. Issues such as soiling and other loss mechanisms are also discussed.

**Level (Hons, MSc, &nbsp; PhD, other)?**

MSc

**Consider for a student &nbsp; award (Yes / No)?**

Yes

**Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?**

Yes

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