









## 6. Conclusion and Discussions

In this paper an advanced grid-tied PV system with relay controls technique was shown, which is suitable to produce more energy from renewable energy sources. Impact of net metering on cost and saving according to different state policies in India are studied. It has been concluded that cost of the system was minimised compared to the cost of existing grid connected photovoltaic system with storage. Losses of the photovoltaic grid tied system were reduced to minimum level. By the proposed method, residential user can be able to use power at any time without interruption. Maintenance of the system was minimised.

## References

- [1] Yann Riffonneau, Seddik Bacha, Franck Barruel, and Stephane Ploix, "Optimal Power Flow Management for Grid Connected PV Systems With Batteries", *IEEE Transactions on Sustainable Energy*, vol. 2, no. 3, July 2011.
- [2] K. Agbossou, M. Kolhe, J. Hamelin, and T. K. Bose, "Performance of a stand-alone renewable energy system based on energy storage as hydrogen," *IEEE Trans. Energy Convers.*, vol. 19, no. 3, pp. 633–640, Sep. 2004.
- [3] T. T. Ha Pham, F. Wurtz, and S. Bacha, "Optimal operation of a PV based multi-source system and energy management for household application," in *Proc. IEEE Int. Conf. Industrial Technology (ICIT)*, Gippsland, Victoria, Australia, pp. 1–5, 2009.
- [4] E. Lemaire-Potteau, F. Mattera, A. Delaille, and P. Malbranche, "Assessment of storage ageing in different types of PV systems technical and economical aspects," in *Proc. 24th EU Photovoltaic Solar Energy Conf.*, Valencia, Spain, 2008.
- [5] J. V. Paatero, and P. D. Lund, "Effects of large-scale photovoltaic power integration on electricity distribution networks," *Renewable Energy Journal*, Volume 32, Issue 2, February 2007, Pages 216-234
- [6] S.B. Kjaer, J.K. Pedersen, F. Blaabjerg, "A review of single-phase grid-connected inverters for photovoltaic modules" *IEEE Transactions on Industry Applications*, Vol. 41, Issue 5, 2005.
- [7] Y. Xue; L. Chang; S. B. Kjaer, J. Bordonau, T. Shimizu, "Topologies of single-phase inverters for small distributed power generators: an overview," *IEEE Transactions on Power Electronics*, , Vol.19, 2004.
- [8] A. Woyte, R. Belmans, J. Nijs, "Testing the Islanding Protection Function of Photovoltaic Inverters," *IEEE Transactions On Energy Conversion*, Vol. 18, No. 1, March 2003.
- [9] N. Hamrouni and A. Chérif, "Modelling and control of a grid connected photovoltaic system", *Revue des Energies Renouvelables* Vol. 10 N°3 (2007) 335 – 344.

## Author Profile

**D. Bhargava Reddy**, M.Tech Student, Energy Systems, Dept. of Mechanical Engineering, JNTUA College of Engineering, Anantapuram, India- 515002

**Dr. M. Yohan**, M. Tech, Ph.D., Professor of Mechanical Engg., JNTUA College of Engineering, Anantapuram, India- 515002

**Volume 4 Issue 7, July 2015**

[www.ijsr.net](http://www.ijsr.net)