

Application of Monitoring of Power Generation through GPRS Network in Rural Residências Cabo Frio/Rj

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Abstract : The project demonstrates the construction of a solar power generation, integrated inverter equipment to a "Grid-Tie" by converting direct current generated by solar panels, into alternating current, the same parameters of frequency and voltage concessionaire distribution network. The energy generated is quantified by smart metering module that transmits the information in specified periods of time to a microcontroller via GSM modem. The modem provides the measured data on the internet, using networks and cellular antennas. The monitoring, fault detection and maintenance are performed by a supervisory station. Employed board types, best inverter selection and studies about control equipment and devices have been described. The article covers and explores the global trend of implementing smart distribution electrical energy networks and the incentive to use solar renewable energy. There is the possibility of the excess energy produced by the system be purchased by the local power utility. This project was implemented in residences in the rural community of the municipality of Cabo Frio/RJ. Data could be seen through daily measurements during the month of November 2013.

Keywords : rural residence, supervisory, smart grid, solar energy

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