Abstract for Speaker Talk

Abstract Title: Continuous Power Generation at Constant Voltage from Wind Energy Conversion Systems

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Abstract:

In this talk, an innovative off-grid wind energy conversion system (WECS) using locally available sustainable energy sources is presented. The system is suitable for remote and rural areas of developing countries such as India, where open wells are available for irrigation and to meet the daily water requirements of local residents. The main constituents of the system are wind turbine, hydraulic pump, pico- hydro turbine-generator and pumped-hydro energy storage (PHES), which uses an open well as its lower reservoir. The upper reservoir is made on the ground. The presented system is quite different from all other available WECSs using PHES for energy storage. The novel feature of the system is its innovative power generation strategy developed for having the system output power absolutely unaffected from the wind speed variations. In this system, the use of converters, inverters, transformers, batteries and control circuits is totally eliminated, which saves the installation as well as maintenance costs and avoids the complexity of the system. The other attractive features of the system are its simplicity, reliability, stability and capability to generate continuous power at constant voltage irrespective of wind speed variations. The mathematical modelling of the proposed system has also been developed and presented in this talk along with simulation carried out in Matlab using real wind-speed data. The simulation results are found in excellent close affirmation with the ones for which the system was designed.

Keywords—*Constant voltage, continuous power, sustainable energy, wind power.*

Professional Biography:

Bahadur Singh Pali was born in India on January 20, 1955. He graduated in Electrical Engineering from Aligarh Muslin University, Aligarh, India in 1976. He received his M. E. (C&I) degree in Electrical Engineering from DCE, University of Delhi, India in 2011.

He is presently working as an Assistant Professor in Bhagwan Parshuram Institute of Technology, Delhi, India and pursuing part-time Ph. D. from National Institute of Technology, Kurukeshtra, India. His special fields of interest include renewable energy and electrical machines.

Mr Pali has an employment experience of 39 years which includes the experience in industries, entrepreneurship, research and teaching. He has written more than 10 research papers in his research career of last five years.



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Any Comments:

This abstract for Speaker talk is in response to the mail dated June 11, 2018 sent by Dr. Harvey Smith, the Conference Director, Renewable and Sustainable Energy 2018, who very kindly asked me to send it for getting the approval of funds from the management for meeting the stay and travelling expenses for attending the Annual Summit on Renewable and Sustainable Energy 2018 against my request dated June 09, 2018 for the same.