

The Department of Electrical Engineering invites you to:

Implementation of Renewable Energy and fuel Cells as a Back-up generation for the Australian National Broadband network

A Seminar by: Professor Akhtar Kalam

Victoria University, Melbourne, Australia

Sunday, 27 November 2011

12:00–13:00

Lecture Hall I111

Hybrid system inclusive of renewable energy may be a key component for the solution of global warming, poor air quality, economic dependence, reducing-dwindling reserves of fossil fuels and also imposition of carbon tax in developed countries like Australia. For zero emission hydrogen energy technology, hybrid system inclusive of renewable energy for remote area power supply (RAPS) is potentially an early niche market. Firstly, this presentation describes the experimental setup of wind/solar 4kW micro generation system, the steps taken to launch the set up (including issues with OH&S), examines the energy produced and various readings of monthly, weekly, daily and partially curves are recorded at regular intervals. The project shows notably the benefit of using wind/solar 4kW micro generation system to reduce CO₂ emissions by implementing in every independent home in countries like Australia. Secondly, this presentation focuses on the experiment conducted by 1.2kW PEM fuel cell system designed for communications backup power applications under laboratory conditions at the Power Systems Research Laboratory in Victoria University. The project shows notably the benefit of using H₂ and fuel cell system for the recent layout of National Broadband Network (NBN) in Australia proposed by the Federal Government (a \$43 billion project!). Finally, this presentation highlights the hybrid system inclusive of renewable energy and points out the vision, recommended strategies and proposed next steps for implementing this in Australia.



Professor Akhtar Kalam has been at Victoria University of Technology, Melbourne since 1985 and a former Deputy Dean of the Faculty of Health, Engineering and Science for 7 years. He has wide experience in educational institutions and industry across four continents. He received his B.Sc. and B.Sc. Engineering from Calcutta University and Aligarh Muslim University, India. He completed his MS and Ph.D. at the University of Oklahoma, USA and the University of Bath, UK. He has worked with electrical manufacturers and held teaching appointments at Iraq and Queensland. He is regularly invited to deliver lectures, work on industrial projects and examine external thesis overseas. He has been actively engaged in the teaching of Energy Systems to undergraduates, postgraduates and providing professional courses to the industry both in Australia and overseas. He regularly offers professional development courses on Power System Protection, Renewable Energy and Cogeneration & Gas Turbine Operation to the Energy Supply Association of Australia and Australian Power Institute. He has conducted research, provided industrial consultancy and published over 400 publications on his area of expertise and written over 29 books in the area. Professional Kalam has high professional qualifications in Electrical and Electronic Engineering, (CPEng; CEng; FIEAust; FIET, FAIE, MCIGRE and MIEEE).

FOR MORE INFORMATION:

Prof. Mohieddine Benammar, mbenammar@qu.edu.qa
P. O. Box 2713, Doha, Qatar, Tel : (974) 4403-4203; Fax : (974) 4403-4201