Editorial

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Biographical notes: Khaled Nigim, Associate Guest Editor of this special edition, is a registered Professional Engineer in Ontario, Canada, senior member of the IEEE, has PhD in Electrical Engineering from the University of Leicester, England UK, and BSc Electrical Engineering from Zagazig University of Cairo, Egypt. He is the author of more than 30 technical journals, proceedings papers, trade magazines, and two book chapters in drives and urban energy management. He has taught numerous graduate, undergraduate courses and professional development seminars. He has more than 24 years of experience in project management, decision making, design and assembly of industrial units that incorporate PLCs, intelligent sensors, VSDs. He has extensive experience in wind energy recovery systems and solar PV controllers and applications. He is currently the coordinator of the master of engineering professional development graduate programme offered online at the University of Waterloo, E&CE department.

Ahmed Faheem Zobaa, SMIEEE, MIEE, Guest Editor, Assistant Professor at the Faculty of Engineering at Cairo University. Received the BSc (hons), MSc and PhD degrees in Electrical Power and Machines, from the Faculty of Engineering at Cairo University, Giza, Egypt, in 1992, 1997, and 2002, respectively. His areas of research include harmonics, compensation of reactive power, power quality, photovoltaic, wind energy, education and distance learning. He is an Editorial Board member for *Electrical Power Quality and Utilization Journal*, *Electric Power Components and Systems Journal* and *International Journal of Computational Intelligence*. He is an Editor for *IEEE Power Engineering Letters* and *IEEE Transactions on Energy Conversion*.

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Ibrahim El-Amin, SMIEEE, Associate MIEE, Associate Guest Editor of this special edition, is Professor of Electrical Engineering, King Fahd University of Petroleum and Minerals. He received his PhD and MSc degrees from the University of Manchester Institute of Science and Technology (UMIST), UK and BSc from the University of Khartoum, Sudan. His research interests include power systems, DC transmission, power electronics, and the integration of alternative energy sources. He was a member of the research team that conducted the project on 'Feasibility Study for Interconnection of Arabian Gulf States' Electrical Power Systems' and the project on 'Feasibility Study of Interconnecting the Power Systems of Mashreq Arab Countries'. He has published numerous technical papers and reports and has written a chapter in a book on generator maintenance practices. Currently, he is the Manager of two projects for the use of wind energy in the Saudi Electricity system.

Investigations of issues regarding steady state power system characteristics when planning large wind farms show that the maximum wind farm capacity is highly dependent on the electrical configuration at the individual windmills. Reactive compensation increases the allowed capacity when using induction generators. Variable speed generators have the best electrical characteristics and give the potential to increase the maximum wind farm capacity compared to induction generators. Losses in the internal wind farm grid and the external grid are also affected by the electrical configuration as well as the size of the wind farm. A configuration with induction generators and no reactive compensation gives increased losses both in the internal and external grid. Utilising the grid to the maximum will also increase the losses.

The objective of the special issue is to provide a means for the publication and interchange of information, on an international basis, on all aspects of reactive compensation for wind farms. Of special interest are contributions describing the development of techniques of Reactive Compensation.