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Role of the Smart Grid in Facilitating the Integration of Renewables

by

Professor Dr. Saifur Rahman

Director, Advanced Research Institute, Virginia Tech, USA

IEEE PES President 2018-2019 & 2021 IEEE President-Elect Candidate

DATE: Tuesday, July 28, 2020.

TIME: Webinar: 6:30 p.m. – 7:30 p.m.

PLACE: Online. Free registration required: <https://events.vtools.ieee.org/m/234594>.

Abstract

With the focus on environmental sustainability and energy security, power system planners are looking at renewable energy as supplements and alternatives. But such generation sources have their own challenges - primarily intermittency. It is expected that the smart grid – due to its inherent communication, sensing and control capabilities – will have the ability to manage the load, storage and generation assets (including renewables) in the power grid to enable a large-scale integration of distributed generation. In a smart grid, information about the state of the grid and its components can be exchanged quickly over long distances and complex networks. It will therefore be possible to have the integration of sustainable energy sources, such as wind, solar, off-shore electricity, etc. for smoother system operation. But in order for this to be possible, the electric utility will have to evolve, and change their ways of operation to become an intelligent provider of these services. This lecture introduces the operational characteristics of renewable energy sources, and various aspects of the smart grid - technology, standards and regulations. It also addresses the interplay among distributed generation, storage and conventional generation to provide an efficient operational strategy in the context of the smart grid.

Speaker's Bio



Prof. Dr. Saifur Rahman is the founding director of the Advanced Research Institute (www.ari.vt.edu) at Virginia Tech, USA, where he is the Joseph R. Loring Professor of Electrical and Computer Engineering. He also directs the Center for Energy and the Global Environment (www.ceage.vt.edu). He is a Life Fellow of the IEEE and an IEEE Millennium Medal winner. He was the founding Editor-in-Chief of the *IEEE Electrification Magazine* and the *IEEE Transactions on Sustainable Energy*. In 2006, he served on the IEEE Board of Directors as the Vice President for Publications. He is a Distinguished Lecturer for the IEEE Power & Energy Society (PES) and has lectured on renewable energy, energy efficiency, smart grid, electric power system operation and planning, etc. in over 30 countries. He was IEEE Power and Energy Society President 2018-2019 and is now a candidate for IEEE President-Elect 2021.

He chaired the US National Science Foundation Advisory Committee for International Science and Engineering, 2010-2013. He conducted several energy efficiency projects for Duke Energy, Tokyo Electric Power Company, US National Science Foundation, US Department of Defense, State of Virginia and US Department of Energy.

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For any additional information, please contact: ajit.pardasani@ieee.org or branislav@ieee.org