



Keynote speaker: Prof Fushuan Wen, IEEE Fellow, Zhejiang University

Title: Dynamic Network Tariff: theory and practice

Abstract:

A significant transformation in the energy sector is taking place due to power industry restructuring, ever-increasing employment of intermittent renewable generation, environmental constraints, and emergent prosumers such as electric vehicles (EVs). These factors impose the necessity of redesigning distribution network (DN) tariffs to promote efficient network utilization and renewable energy generation accommodation, and to incentivize customers to promote energy efficiency, for both short-term operation and long-term planning of the power network.

Given this background, this speech will cover the following issues:

1. Electricity pricing schemes in general;
2. Demands for dynamic network tariffs;
3. Key issues and challenges in designing dynamic network tariffs;
4. Theories of dynamic network tariffs;
5. Dynamic network tariffs in practice;
6. Current concerns and prospects of dynamic network tariffs.

Professor Fushuan Wen received the BE and ME degrees from *Tianjin University*, Tianjin, China, in 1985 and 1988, respectively, and the PhD degree from *Zhejiang University*, Hangzhou, China, in 1991, all in electrical engineering. He joined the faculty of *Zhejiang University* in 1991, and has been a full professor and the director of the *Institute of Power Economics and Information* since 1997, and the director of *Zhejiang University-Insigma Joint Research Center for Smart Grids* since 2010.

He has been undertaking various teaching, research and visiting appointments in *National University of Singapore* (NSTB Postdoctoral Fellow, Research Fellow), *Hong Kong Polytechnic University* (Research Fellow, Visiting Assistant Professor), *University of Hong Kong* (Research Assistant Professor), *South China University of Technology* (University Distinguished Professor), *University of New South Wales* in Australia (ARC Project Senior Fellow, Senior Visiting Fellow), *Queensland University of Technology* in Australia (CSIRO and ARC Project Visiting Fellow), *Brunei University of Technology* (Professor in Power Systems), *Technical University of Denmark* (Otto Monsted Guest Professor in Power Systems), *Nanyang Technological University* in Singapore (Visiting Fellow), *Murdoch University* in Australia (Adjunct Professor), *Tallinn University of Technology* (Professor in Energy Systems), *Hangzhou Dianzi University* in China (Yusheng XUE Education Foundation Distinguished Professor), *Commonwealth Scientific and Industrial Research Organization (CSIRO)* in Australia (Honorary Visiting Scientist), *Shenzhen Institute of Artificial Intelligence and Robotics for Society* (Visiting Principal Research Fellow).

His research interests include: 1) power economics and electricity markets; 2) power system investment, planning and operation optimization; 3) smart grids and electric vehicles; 4) power system alarm processing, fault diagnosis and system restoration; 5) artificial intelligence applications in power and integrated energy systems. He has published 200+ SCI-indexed papers, 650+ EI-indexed papers, and 740+ Scopus-indexed papers. His publications have been cited for 16000+ times. He has completed and is undertaking more than 170 grants and projects from governmental organizations and industry.

Prof Wen received many awards both at the national level and provincial level, including the most prestigious National Natural Science Award of China. He has been listed in "Most Cited Chinese Researchers" in six consecutive years since 2015 by Elsevier, and is the author of one of the China's 100 Most Influential Domestic Academic Papers in 2016.

Prof Wen is the editor-in-chief of *Energy Conversion and Economics* (SPERI, IET, Wiley), the deputy editor-in-chief of *Journal of Automation of Electric Power Systems*, a subject editor in power system economics of *IET Generation, Transmission and Distribution*, associate editor of *Journal of Energy Engineering* and *Journal of Modern Power Systems and Clean Energy*. He is also on the editorial boards of more than 10 journals.

Prof Wen was elected to IEEE Fellow *for contributions to fault diagnosis in power grids*.