

Value of Demand Response and Enabling Effective Consumer-Active Participation in Smart Grids

Panel Organizers:

Dr. Visvakumar Aravinthan, Dr. Zita Vale and Dr. Kumar Venayagamoorthy

Wednesday, March 9th from 3:45-5:45 pm

Duration: Two hour panel

Consumer active participation in smart grids has been the target of multiple studies and experiences over the last years. Demand response has been successfully used even during large events that have taken place, especially in the US, and some experiences are also showing its potential in Europe where it is now gaining increased attention. However, it remains as an underutilized resource in the power industry day-to-day operations.

The main reasons behind this limitation are (i) unavailability of accurate modeling and control of residential demands, (ii) lack of understanding on value of demand response to energy providers and utilities, (iii) proper understanding on cost of demand response in a market setup (marginal cost and consumer expected incentive), (iv) policy issues related to residential remand shifting, etc.

It is time to analyze the success of the advancements so far and point out clear directions. Business models, computational methods, and realistic real time studies and/or simulations are of crucial importance for this purpose. This panel will focus on addressing the challenges, opportunities and contributions to-date of demand response in a smart grid environment.

- *Intelligent monitor and control system in street lighting*
Juan Corchado, University of Salamanca, Spain
- *Residential Energy Efficiency, Consumer Comfort, and Demand Response*
Ward Jewell, Professor, Wichita State University, Wichita, KS
- *Advantages of using RTLS to enable efficient power consumption*
Oscar Garcia, NEBUSSENS, Spain
- *Creating Conscious and Market for Negawatt Commodity*
G. Kumar Venayagamoorthy, Clemson University, Clemson, SC
- *Control of power electronic devices for optimal demand response in smart-grid*
Nishantha Ekneligoda, Oklahoma State University, Stillwater, OK
- *Enabling integrated resource planning with active demand management*
Sachin Gupta, Omnetric Group, USA
- *Demand Response: Present state and directions towards the future*
Zita Vale, Polytechnic of Porto, Portugal