



## Agenda

### TC 7.5 Smart Grid Subcommittee

4:00-4:45 pm, Sunday, January 21, 2018

Prepared by Kristen S. Cetin

**Subcommittee Scope:** This subcommittee will explore and develop ideas and research work statements to improve the building and utility interactions (and more specifically the electric grid). The research will focus on developing enabling technologies for seamless interaction of smart building components and utilities and other building services. An important aspect of this work is to identify the information that is necessary to support smart building technologies, and to identify the requirements of communication protocols to support the exchange of this information between different building services buildings and utilities, between multiple buildings, with outside service providers.

The importance of a stable and reliable electric power grid to life and the economy in the 21st century has been underscored by two major events over the last decade: a major black out on the east coast of North America and wildly varying electricity prices in California during an attempt at restructuring the electricity marketplace. In response to these events many organization (DOE, EPRI, and CEC) have started research activities to find ways to modernize the grid. However, there a significant gaps in the research activities, especially as they relate to buildings. Since buildings consume over 70% of the electric in the U.S., they have to part of the solution to modernize the grid. ASHRAE has traditionally developed technologies, standards, and guidelines for buildings. Therefore, this subcommittee can play a major role in continuing this effort.

0:00	<b>Call to Order</b>	
	Circulate Sign In sheet, self-introduction, announce the subcommittee scope.	
5 min	<b>Relevant sessions at current ASHRAE conference</b>	
	Conference Paper Session 2 - 11:00 am – 12:30 pm – Sunday - Identifying Peak and Base Energy Consumption Hour Ranges for Commercial Buildings using a Non-parametric method	Hongxiang Fu
	Seminar 10 – 1:30-3:00 pm – Sunday - Building Energy Modeling for Power Grids and Energy Code Compliance	Chaired by Ralph Muehleisen
	Conference Paper Session 5 – 8:00 – 9:30 am - Field study of the impacts of demand response on occupant’s thermal comfort and their adaptive behavior in university campus	Sama Aghniaey
	Conference Paper Session 11 – 8:00 -9:30 am – Tuesday Business Cases for Improved Control and Internet of Things in HVAC/R	Christian Ellwein
	Others???	
5 min	<b>Winter ASHRAE conference seminar ideas</b>	
	Forum Discussion - Demand Response Guideline - resubmission	Kristen Cetin
	Challenges associated with communication of different smart homes systems	Carlos/Kristen
	Modeling Through the Building Life Cycle	David Blum
	Smart products for residential and commercial buildings	Josh Rhodes, others?
	Impacts of extreme heat events on buildings/electric grid	Paulo Tabares/Kristen
	Other ideas?	

10-15 min	<b>Recap from Forum Discussion (Last Conference)</b> Future Smart Buildings: What Data Do We Need to Collect and How? -- summary of discussion – next steps	Kristen Cetin/ Joe Zhou
15 min	<b>Update/Discussion of RTARs/Work Statement ideas</b>	
	1) Development of models for better peak load predictions	Michael Bobker
	2) Instantaneous voltage and current load from buildings	Ralph Muehleisen,
	3) Energy demand prediction of multiple building scale	
	4) Connecting grid modeling and building modeling	Don Hong Kim
	5) Guidance on smart building equipment / IoT	
	Other ideas?	
10 min	<b>Demand Response Guideline/Standard development (from 2016/2017 discussions)</b>	
	<b>Other ideas and discussions</b>	
Adjourn		