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To: California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 09-IEP-1G  
1516 Ninth Street  
Sacramento, CA 95814-5512  
From: Bruce Nordman, LBNL  
cc: Dave Michel, CEC  
Date: May 14, 2009  
Re: 2009 IEPR - Smart Grid

<b>DOCKET</b>	
<b>09-IEP-1G</b>	
DATE	May 14 2009
RECD.	May 15 2009

I would like to thank the CEC for the opportunity to provide my personal opinion about Smart Grid issues and how the Commission should proceed in this area.

My knowledge and concerns are focused on what happens within buildings, and not on the grid side of the meter. I have been following developments on the "Smart Grid" topic for several years now, from the perspective of what is desirable and required for buildings to save the most energy at the least cost and inconvenience to occupants.

I believe that the Smart Grid effort has all the needed pieces present to make this happen, but what is missing is a necessary parallel and complementary effort to develop robust, efficient, and comprehensive **Building Networks**. The CEC needs to develop goals and plans for how Building Networks will be developed, with a goal to spark a national effort on the topic to leverage the greater resources that are found in the federal government.

It would be a mistake to try to force the Building Network topic into the Smart Grid work, as the topics require largely separate technologies, knowledge, individuals, institutions, companies, and approaches. The planned interfaces to individual elements within buildings for the Smart Grid effort for thermostats, plug-in vehicles, and local generation are appropriate, but for the rest of energy use in buildings, control systems need to be managed locally and so require their own network distinct from what the grid provides. (Providing standard price and reliability information from the grid to building networks is key).

There are efforts to graft digital network technologies onto traditional building control systems, but what is needed for the future is to design a new architecture for building networks to enable functionality not otherwise possible. This sort of revolution in thinking about the building energy use topic parallels what the Smart Grid is bringing to grid operations, and what the Internet has brought to our information systems. For more detail on the Building Network topic, please contact me or see:

<http://eetd.lbl.gov/ea/nordman/bldgsasnetworks.html>

Development of sophisticated building networks will enable the price and control features of the Smart Grid to be even more effective than otherwise, and will simplify Smart Grid development by parceling off to the Building Network research area work that people might otherwise think needs to be addressed by the Smart Grid. Thus, working on Building Networks will not only save more energy, but also benefit the Smart Grid.

Thank you.