



Energy Technologies Area

May 23, 2016

Eli Harland

California Energy Commission
Sacramento, CA

Re: Joint Energy Agency Workshop to Kick-Off the Development of a Roadmap to Commercialize Microgrids in California

Eli—

I am unfortunately unable to attend the May 24 workshop, either in person or electronically. I would like to offer the following comments on how the CEC can meet its goals in this area. All of the referenced documents below are available on my web page — <http://nordman.lbl.gov>. I encourage the CEC to:

- Adopt the definition of “microgrid” proposed in the white paper from the Smart Grid Interoperability Panel (SGIP) called “Local Grid Definitions”. The definition addresses shortcomings in the DOE definition which is most commonly cited. This paper also covers other terms that will be increasingly relevant, such as “nanogrid”. Clearly distinguish between any effort to create single-customer microgrids from those that are segments of a utility grid (“utility microgrids”); the former should be the primary focus of the CEC.
- Recognize that existing microgrid technology is not suitable for wide deployment. Microgrids are generally custom designed and individually built. This virtually guarantees high costs for installation, maintenance, and modification over time. New technology built on standard interfaces and commodity products is necessary to get the price reductions needed for large-scale use in the market.
- Carefully track the many potential benefits of microgrids, particularly being able to more readily incorporate and well-utilize local generation and storage, provide local reliability, and obtain the optimal balance between traditional AC power distribution and DC power distribution internal to the microgrid.
- Ensure that goals for microgrid technology include that it be “plug-and-play” in the way that IT technologies have become. This is inextricably linked to driving down costs by making installing and modifying microgrids minimally burdensome to do.
- Work towards microgrids having many features not available today, from the utility grid or otherwise, to make installing them appealing to a wide variety of building owners.
- Adopt a goal for California to be a global leader in innovative microgrid technologies in the way it has been for information technology, taking a cue from network technology to work towards a “network model of power” within buildings based on commodity nanogrid technology.
- Recognize that moving quickly to universal time-of-use pricing, and offering attractive highly dynamic pricing options, is an essential precondition to helping to create a strong economic rationale for microgrid deployment.

I would be pleased to discuss any of these further with you and other CEC staff, and look forward to learning about the results of your workshop. Thank you,

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