



ADVANCED POWER AND ENERGY PROGRAM  
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April 11, 2013

Re: UC IRVINE AASHE STARS 1.2 LETTER OF AFFIRMATION  
INNOVATION 3 (2013): UC IRVINE FIELD LABORATORY

To Whom It May Concern:

UC Irvine is combining innovative strategies for energy efficiency, energy management, and self-generation with research that positions the campus as one of the nation's most advanced field laboratories for community energy generation and utilization, and microgrid technology. The UC Irvine Field Laboratory is led by the UC Irvine Advanced Power and Energy Program in a novel collaboration with UC Irvine Facilities Management, and campus Environmental Planning and Sustainability. The partnership aligns the campus' longstanding performance in energy management with a robust, internationally recognized energy research program to better understand the energy infrastructure of tomorrow.

Partners include Siemens, MelRoK, Toyota, ETAP, and UCI's Transportation and Distribution Services. As a result of previous and ongoing investments in multiple photovoltaic installations and energy research initiatives, the UCI Field Laboratory provides a unique combination of key renewable, distributed energy, and smart demand response resources for the study of photovoltaic deployment and integration into the electric grid. The Field Laboratory also enables the investigation of controlled metrics in the context of the emerging smart grid paradigm. Included are natural gas-powered distributed generators, energy storage devices, photovoltaic power systems, a large thermal storage tank, electric vehicles, and smart demand response and dispatchable power capabilities. Overlaying the hardware is a sophisticated array of circuit, energy, and transportation steady-state and dynamic simulation and computer models.

Aspects of the partnership that make the UCI Field Laboratory initiative unique are the (1) unusual record of collegial and integrated collaboration between the research and facilities dimensions of the university, (2) the unusual depth of national and international recognition of the research and facilities dimensions in energy research and application respectively, (3) the focus of the automobile manufacturers to adopt the UCIFL for staging the world's evaluation of next-generation hydrogen fuel cell vehicle technology, (4) the decision of the U.S. Department of Energy and California Energy Commission to select UCI for the siting the National Fuel Cell Research Center, and (5) the deployment of the largest U.S. smart grid demonstration project by a leading U.S. utility in collaboration with the U.S. Department of Energy in, around, and through the UCIFL.

While many of the physical assets now encompassed by the UCI Field Laboratory have been accumulated over the years, the relationship between APEP and campus operations matured in 2011 with the award of a RESCO (Renewable Energy-based Secure COmmunities) grant by the California Energy Commission and the increased involvement of the recently hired campus energy manager, Matt Gudorf. The RESCO program led to a detailed characterization of the buildings on campus, and a deep dive on the instrumentation needed to transition the campus plant to a robust, smart operation. The ensuing partnership has done much to strengthen not only APEP's teaching and research mission but also the campus' role as a leader in the area of sustainability and energy management. For this reason, I am pleased to affirm the innovative nature of the partnership underpinning the UC Irvine Field Laboratory.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Samuelson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Scott Samuelson  
Director, Advanced Power and Energy Program  
Professor of Mechanical, Aerospace and Environmental Engineering