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The **IEEE Ottawa** Reliability & Power Electronics Societies Joint Chapter (**R-PELS**), the Power and Energy Society Chapter (**PES**), and the Special Interest Group on Humanitarian Technology Chapter (**SIGHT**), Leidos Canada, and the University of Ottawa SunLab **invite all interested** IEEE members, and prospective members in, for example, the Science Technology, Engineering, Environment and Mathematics disciplines **to a seminar on:**

Achieving Very High Solar Penetration

by Dr. Richard Perez, University at Albany

DATE: Thursday, May 04, 2017

TIME: Snacks & beverages, Registration & Networking; **Seminar: 10:00AM-11:30AM**

PLACE: Room 4130, Desmarais Building, University of Ottawa, 55 Laurier Avenue East

PARKING: Underground paid parking available on campus. Some free parking is available on nearby streets. Please respect restricted areas.

Admission: Complementary. Registration is required to ensure a seat and sufficient snacks, please register by e-mail contacting: register-perez@leidos.ca with a copy to RaedAbdullah@ieee.org

Abstract

Solar power (PV) is a vast, quasi-limitless resource. It is rapidly becoming the least costly electrical generation source on a pure energy basis. Yet its inherent intermittency and non-dispatchability are perceived as insurmountable obstacles in the way to very high penetration.

However there are operational solutions including, but not limited to electrical energy storage, that can facilitate high PV penetration with the firm power delivery guarantees necessary to entirely displace conventional generation. In addition to storage, operational solutions include load shaping, grid strengthening and solar overbuilding/curtailment.

While using storage alone would be prohibitively expensive, an optimal combination of all solutions could be affordable and enable high penetration solar to drive growing economies. The presentation will argue that the optimal – lowest cost – development of these solutions will require a fundamental change in the current approaches to remunerate solar and distributed energy resources (DER) production. .

Bio Dr. Richard Perez is a senior research associate at the University at Albany's Atmospheric Sciences Research Center where he directs applied research and teaches in the fields of solar radiation, solar energy applications and daylighting. Dr. Perez has produced more than 200 journal articles, conference papers and technical reports, holds two U.S. patents on methods of load management using photovoltaics, and has received numerous professional awards.

Dr. Perez has been on the forefront of understanding and developing tools for bringing solar into a predictable real source of power:

- He is the author of the "Perez model" that is used within most daylighting and PV systems energy predictions – a sky model needed to translate global solar values into solar power on the panels.
- He is also the key developer of the SUNY model that delivers highly-used satellite solar resource datasets.
- His work in the past decade has been in identifying the potential of photovoltaic (PV) power generation to meet the electrical power demand of large cities in non-traditional solar regions such as the northeastern U.S. and Eastern Canada.

