



CREW Seminar Series: Fall 2010

Modeling High Penetrations of Wind Power with HOMER

Abstract

Small isolated grids have become the test bed for high penetrations of wind power. They have traditionally relied almost entirely on diesel fuel, which makes wind power very cost-effective. Small grids also provide an opportunity to evaluate approaches to high penetration without the effects being diluted or complicated by physical and regulatory interactions with neighboring utilities. A variety of different approaches have been taken to integrate wind power onto diesel grids, some of which have been at very high penetration levels. Although projects exist all over the world, there are many examples in Alaska and Australia. Some of the lessons from these projects can be applied to larger grids.

NREL developed the Hybrid Optimization Model, HOMER, to analyze the economics of different types and levels of renewable penetration and storage on small grids. This talk will present HOMER results showing the effect of increasing wind penetrations on project economics and the role of storage and load management.

By Peter Lilienthal from HOMER Energy

**On Friday, December 3, 2010, at 1:00pm
In Room ECCS 1B12**

(CAETE studio, Engineering Center, University of Colorado at Boulder)

Refreshments will be available at 12:50pm



Dr. Peter Lilienthal is the President/CEO of Green Island Power and HOMER Energy. Since 1993 he has been the developer of the National Renewable Energy Laboratory's HOMER hybrid power optimization software, which has been used by over 50,000 energy practitioners in 193 countries. NREL has licensed HOMER Energy to be their sole world-wide commercialization licensee for distributing and enhancing the HOMER model. Green Island Power provides development services for renewable power projects for stand-alone applications and small utility grids.

Dr. Lilienthal was the Senior Economist with the International Programs Office at NREL from 1990 - 2007. He has a Ph.D. in Management Science and Engineering from Stanford University. He has been active in the field of renewable energy and energy efficiency since 1978. This has included designing and teaching courses at the university level, project development of independent power projects, and consulting to industry and regulators. His technical expertise is in utility modeling and the economic and financial analysis of micro-grid projects. He was the lead analyst and one of the creators of NREL's International and Village Power Programs.

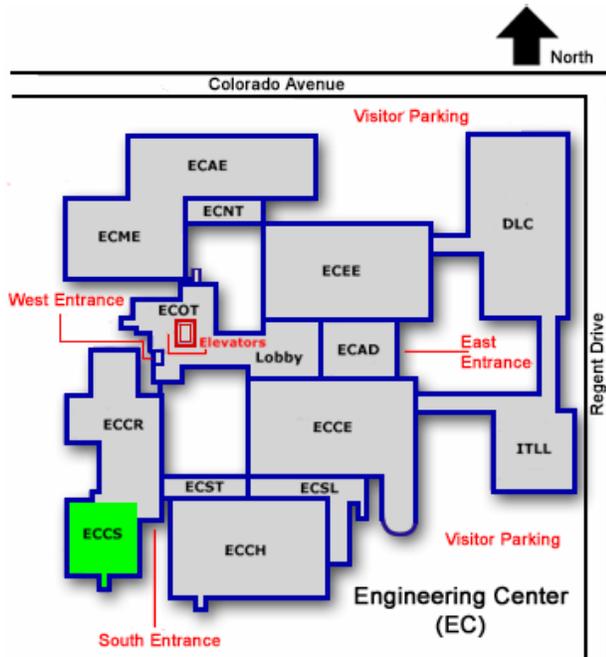


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How to get to the CU-Boulder Engineering Center

From 28th Street (Hwy 36), go west on Colorado Ave., which leads into the University. You will see the Engineering Center on the left, one block further along Colorado Ave.

Parking is available at visitor parking lots and nearby meters.



Room **ECCS 1B12** is located in the 1st basement (courtyard level) of the Computer Science Wing (ECCS).

Broadcasting option

While we highly encourage students, faculty and researchers to come attend the seminar in person, the seminar will also be broadcast at the following URL:

URL: <http://my.dimdim.com/caetestudio1>

The dial-in information will be displayed at the top of the DimDim meeting.

Unplanned technical problems are always a possibility, so we apologize in advance. Nonetheless, if technical problems are encountered, please feel free to call Mark Dehus at 303-735-6275.

