



**WHOLESALE ELECTRICITY MARKETS AND RENEWABLE ENERGY
Executive Education Course**

**Pacific Energy Center
851 Howard Street
San Francisco, CA 94103**

Course Description:

In the last 20 years, the economic and institutional framework for wholesale electricity markets fundamentally changed, altering the business landscape for fossil fuel and renewable generation. Drawing heavily on the tools of economics, this course will cover the fundamental concepts of competitive electricity markets, their potential efficiencies, and the market failures that can occur. Most of day 2 will focus on environmental impacts of electricity generation and policies created to address those concerns.

Day One: Thursday, August 21

Session 1: Competitive Wholesale Electricity Markets	9:00am – 10:30am
Session 2: Market Power in Electricity Markets	10:45am – 12:15pm
Lunch Break	12:15pm – 1:30pm
Session 3: Market Power Mitigation	1:30pm – 3:00pm
Session 4: Resource Adequacy in Restructured Electricity Markets	3:15pm – 4:45pm

Day Two: Friday, August 22

**Session 5: Commodities, Futures and
Derivative Electricity Markets**

9:00am – 10:30am

Session 6: Energy Externalities

10:45am – 12:15pm

Lunch Break

12:15pm – 1:30pm

Session 7: Economics of Renewable Energy

1:30pm – 3:00pm

**Session 8: Recent Environmental Policy
Development in the Power Sector**

3:15pm – 4:45pm

Lecturers:

Severin Borenstein is the E.T. Grether Professor of Business Administration and Public Policy at the Haas School of Business. He received his A.B. from U.C. Berkeley and Ph.D. in Economics from M.I.T. His research focuses on business competition, strategy, and regulation. He has published extensively on the airline industry, the oil and gasoline industries, and electricity markets. His current research projects include the economics of renewable energy, economic policies for reducing greenhouse gases, and alternative models of retail electricity pricing. He served on the Board of Governors of the California Power Exchange from 1997 to 2003. In 2012-13, he served on the Emissions Market Assessment Committee that advised the California Air Resources Board on the operation of California's Cap and Trade market for greenhouse gases.

James Bushnell is an associate professor of economics at the University of California at Davis. He received his B.S. from the University of Wisconsin (1989) and Ph.D. in Industrial Engineering and Operations Research from UC Berkeley (1993). His research focuses on industrial organization and regulation, energy economics and policy, environmental economics, and game theorization optimization models. Since 2002, he has served on the California Independent System Operator's Market Surveillance Committee. Dr. Bushnell has also served on the California Power Exchange's Market Monitoring Committee and on the California Air Resources Board's Economic Assessment and Allocation Committee for its cap-and-trade program. In 2012-13, he served on the Emissions Market Assessment Committee that advised the California Air Resources Board on the operation of California's Cap and Trade market for greenhouse gases.

Meredith Fowlie is an associate professor of Agriculture and Resource Economics at the University of California, Berkeley. Prior to joining UC Berkeley, she was an Assistant Professor of Economics and Public Policy at the University of Michigan. She received a MSc in Environmental Economics from Cornell University in 2000 and PhD in Environmental and Resource Economics from UC Berkeley in 2006. Her interests lie at the intersection of empirical industrial organization, environmental economics, and public policy. Her work on the electricity sector has emphasized interactions between electricity markets and emissions permit markets.