

## Seth Blumsack

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### Research Interests

- Energy and electric power systems
- Network industries
- Regulation, deregulation, and commoditization
- Infrastructure management and investment
- Network and graph theory
- Congestion pricing and management
- Antitrust economics and the measurement of market power
- Econometrics and statistics

### Publications and Research

*Journals, Books, and Refereed Conference Proceedings*

Blumsack, Seth, 2007. "The Real Problem with Merchant Transmission," *Proceedings of the 26<sup>th</sup> Advanced Workshop on Regulation and Competition, Center for Research in Regulated Industries, Skytop PA* (forthcoming).

Blumsack, Seth, Marija Ilić and Lester B. Lave, 2007. "Separability and Independence of Congestion and Reliability: Theory and Simulations," *Proceedings of the IEEE Power Engineering Society General Meeting, Tampa FL* (forthcoming).

Lave, Lester B., Seth Blumsack, Dalia Patiño-Echeverri, Eric Hsieh and Marija Ilić, 2007. "Regulators as Decision Makers," *Engineering Electricity Services of the Future*, Kluwer Academic Publishing (forthcoming).

Ilić, Marija, Seth Blumsack, Slobodan Pajic, Le Xie, Yong Tae Yoon and Chien-Ning Yu, 2007. "Regional Transmission Organizations as Decision Makers," *Engineering Electricity Services of the Future*, Kluwer Academic Publishing (forthcoming).

Blumsack, Seth, Damien Ernst, Edo Macan, Anna Minoia, Jean-Pierre Leotard, Anupam Thatte, Yong Tae Yoon, Chien-Ning Yu and Marija Ilić, 2007. "Transmission Owners as Decision Makers," *Engineering Electricity Services of the Future*, Kluwer Academic Publishing (forthcoming).

Blumsack, Seth, 2007. "Measuring the Benefits and Costs of Regional Electric Grid Integration," *Energy Law Journal* (forthcoming).

Blumsack, Seth, Marija Ilić and Lester B. Lave, 2006. "Decomposing Congestion and Reliability," currently under review at *IEEE Transactions on Power Systems*.

Blumsack, Seth, Lester B. Lave, and Marija Ilić, 2006. “A Quantitative Analysis of the Relationship Between Congestion and Reliability in Electric Power Networks,” currently at the “revise and resubmit” stage with the *Energy Journal*.

Blumsack, Seth, Lester B. Lave, and Marija Ilić, 2006. “Assessing the Tradeoffs Between Congestion and Reliability in Electric Power Networks,” *Papers and Proceedings of the 26th North American Conference, U.S. Association for Energy Economics*, September, Ypsilanti, MI.

Blumsack, Seth, Jay Apt, and Lester Lave (2006): “Lessons From the Failure of U.S. Electricity Restructuring,” *The Electricity Journal*, 19:2, pp. 15 – 32. Also translated into Japanese by the Japan Electric Power Information Center.

Blumsack, Seth, Jay Apt, and Lester Lave (2005): “A Cautionary Tale: U.S. Electric Sector Reform,” *Economic and Political Weekly*, 40:50, pp. 5279 – 5301.

Blumsack, Seth (2005): “Some Implications of the Braess Paradox for Pricing and Investment in Electric Power Systems”, *Proceedings of the MIT Technology, Policy, and Management Consortium*, Cambridge MA, June.

Lave, Lester B., Jay Apt and Seth Blumsack (2004): “Rethinking Electricity Deregulation”, *The Electricity Journal*, Vol. 17, No. 8, pp 11 – 26.

Blumsack, Seth and Lester B. Lave (2004): “Mitigating Market Power in Restructured U.S. Electricity Markets”, *Papers and Proceedings of the 24th North American Conference, U.S. Association for Energy Economics*, July, Washington, D.C.

Blumsack, Seth, Dmitri Perekhodtsev and Lester Lave (2002): “Market Power in Deregulated Wholesale Electricity Markets: Issues in Measurement and the Cost of Mitigation”, *The Electricity Journal*, Vol. 15, No.9, pp 1-24.

Van Vactor, Samuel and Seth Blumsack (2002): “How to Make Power Markets Competitive,” in *Electricity Pricing in Transition*, Ahmad Faruqui and Kelly Eakin, eds., Kluwer Academic Publishing.

*White Papers and Regulatory Contributions*

Apt, Jay, Seth Blumsack, and Lester B. Lave, “Competitive Energy Options for Pennsylvania,” report to the Team Pennsylvania Foundation, January 2007.

Blumsack, Seth, “Seams Issues in the Eastern Interconnect,” White Paper for the Control Area Coalition filed under FERC Docket ER-06-615, December 2006.

Blumsack, Seth, Lester B. Lave, and Jay Apt, “Comments on Wholesale and Retail Electricity Competition,” for the Electric Energy Market Competition Interagency Task Force and FERC, filed under FERC Docket AD05-17-000, November 2005.

Morgan, G., J. Apt. L. Lave, J. Bergerson, S. Blumsack, J. DeCarolis, P. Hines, D. King, D. Patiño-Echeverri, and H. Zerriffi, 2005. “The U.S. Electric Power Sector and Climate Change Mitigation,” for the Pew Center on Global Climate Change.

Blumsack, Seth, Dmitri Perekhodtsev, and Lester B. Lave, “Comments on FERC’s Proposed Supplier Margin Assessment Screen for Market Power,” filed under FERC Docket PL02-8-000, January 2004.

Blumsack, Seth, Dmitri Perekhodtsev, and Lester B. Lave, “Comments on FERC’s Standard Market Design NOPR,” filed under FERC Docket RM01-12-000, November 2002.

Blumsack, Seth, Sam van Vactor, and Peter Stiffler, 2000. “Outlook for Gasoline and Distillates,” report prepared for the Oregon Department of Energy.

#### *Working Papers*

Blumsack, Seth and Marija Ilić, 2006. “Some Implications of Braess’ Paradox for Electric Power Systems.”

Blumsack, Seth, 2006. “Network Decomposition via Graph Theory and Watts-Strogatz Clustering.”

Blumsack, Seth, Lester B. Lave, and Marija Ilić, 2006. “Topological Elements of Transmission Pricing and Planning,” CEIC Working Paper 06-08.

Blumsack, Seth, Lester B. Lave, and Marija Ilić, 2006. “A Quantitative Analysis of the Relationship Between Congestion and Reliability in Electric Power Networks,” CEIC Working Paper 06-09.

Blumsack, Seth, 2006: “Network Topologies and Transmission Investment Under Electric Industry Restructuring,” unpublished Ph.D. dissertation, Carnegie Mellon University. The dissertation committee consists of Lester Lave (chair), Marija Ilić, Sarosh Talukdar, and Jay Apt.

Blumsack, Seth, 2006: “The Economic Efficiency of Point-to-Point Financial Transmission Rights is Limited by the Network Topology.”

Blumsack, Seth, 2006: “Some Implications of Braess’ Paradox in Electric Power Systems.”

Perekhodtsev, Dmitri, Lester Lave, and Seth Blumsack (2002): “A Model of Pivotal Oligopoly for Electricity Markets.”

## **Teaching**

Carnegie Mellon University – Academic year 2004 – 2005, developed and taught an interdisciplinary course entitled “The Transformation of Energy Markets,” to

economics and engineering students at the undergraduate and graduate level. The course was cross-listed between the Department of Economics and the Department of Engineering and Public Policy. The course discussed the economics and technology of the petroleum, natural gas, and electric power industries to help explain the successes and failures of deregulation and commoditization in each.

## Professional History

Carnegie Mellon University – Postdoctoral Research Fellow, Carnegie Mellon Electricity Industry Center, Tepper School of Business, May 2006 – present. Joint postdoctoral appointment pending with Electrical and Computer Engineering. Research has focused on transmission planning, investment, and pricing; restructuring of the electric power sector; and modeling of hurricane damage to electric distribution systems.

Carnegie Mellon University – Ph.D. Candidate, Department of Engineering and Public Policy, August 2003 – May 2006. Graduate research assistanceship with the Carnegie Mellon Electricity Industry Center.

Economic Insight, Inc. – Economist, writer, and editor, June 1998 – June 2001.

Performed economic analysis to support the firm’s senior consultants for a variety of public and private clients in the energy and electric power sectors. Contributing editor for the *Energy Market Report*, a daily newsletter covering North American wholesale electricity markets. Editor of *Pacific West Oil Data*, a monthly compendium of data and information concerning the crude-oil and petroleum products industry in the Western U.S. and Pacific Rim.

Oregon Department of Fish and Wildlife – Summer intern, May – August 1997.

Researched social, economic, and climactic determinants of the demand for coastal salmon fishing.

## Education

Carnegie Mellon University – Ph.D., Department of Engineering and Public Policy, 2006.

Carnegie Mellon University – M.S., Economics, May 2003.

Reed College – B.A., Mathematics and Economics, May 1998. Thesis title: “Influences of the El Niño Southern Oscillation on the Demand for the Oregon Coastal Sport Fishery.”

## Awards and Honors

William W. Cooper Award for “Best Doctoral Dissertation in Management or the Management Sciences,” Tepper School of Business, Carnegie Mellon University, May 2006.

Best Poster Award, MIT Technology, Policy, and Management Consortium, Cambridge MA, June 2005.

Herbert L. Toor Award for “Outstanding Research Paper Submitted in the Qualifying Examinations of the Department of Engineering and Public Policy,” February 2004.

“Managing Peak Demand in Public Power Systems,” American Public Power Association DEED Technical Grant, December 2001, with Chantal Brandon and Dmitri Perekhodtsev.

William Larimer Mellon Fellowship, Graduate School of Industrial Administration, Carnegie Mellon University, 2001 – 2003.

## **Memberships and Activities**

Member, U.S. Association for Energy Economics

Member, International Association of Electrical and Electronics Engineers (IEEE)

Member, IEEE Power Engineering Society  
IEEE PES Sub-committee on Systems Economics and Transmission Planning

Peer reviewer, *Environmental Science and Policy*, spring 2004.

Peer reviewer, *Energy Journal*, 2005 to present.

Peer reviewer, *International Journal of Global Energy Issues*, spring 2006.

Peer reviewer, *IEEE Transactions on Power Systems*, 2006 to present.

Peer reviewer, *Environmental Science and Technology*, 2007 to present.

Peer reviewer, *IEEE Transactions on Power Delivery*, 2007 to present.