**BENJAMIN F. HOBBS**

Department of Geography and Environmental Engineering, Whiting School of Engineering

Environment, Energy, Sustainability & Health Institute

The Johns Hopkins University

313 Ames Hall, 3400 North Charles St.

Baltimore, MD 21218

(410) 516-4681, bhobbs@jhu.edu

## EDUCATION

**Cornell University**, School of Civil and Environmental Engineering, Ithaca, NY. Ph.D., Environmental Systems Engineering, Jan. 1983. Minors: Operations Research and Resource Economics.

**State University of New York**, College of Environmental Science and Forestry, Syracuse, NY. M.S., Resources Management and Policy, May 1978.

**South Dakota State University**, Brookings, SD. B.S. with Highest Honor, May 1976. Major: Non-Major (self-designed program integrating environmental science, mathematics, economics).

**Prescott College**, Prescott, AZ. Sept. 1972 - May 1974.

**EMPLOYMENT**

**The Johns Hopkins University**, Whiting School of Engineering, Baltimore, MD.

* Inaugural Director, Environment, Energy, Sustainability & Health Institute, 2010 to present.
* Inaugural Theodore K. and Kay W. Schad Professor of Environmental Management, 2008 to present.
* Co-Director, Yale-JHU SEARCH (Solutions for Energy, Air, Climate, and Health) Center, 2016 to present
* Professor of Geography & Environmental Engineering, 1995 to present
* Chairman of Geography & Environmental Engineering, July 2002-June 2003; Acting Chair July-August 2004
* Professor of Applied Mathematics and Statistics (secondary appointment), 1999 to present.

Teaching, research in optimization, decision analysis, simulation, and economics, and their application to environmental, power, and water systems. Courses taught: environmental systems simulation and decision analysis; energy planning and policy modeling; introductory optimization; engineering microeconomics; advanced environmental engineering applications of optimization; ecosystem management models.

**Case Western Reserve University**, Case School of Engineering, Cleveland, OH.

* Assistant Professor of Systems Engineering, Jan. 1984 to Feb. 1988.
* Assistant Professor of Civil Engineering, Sept. 1986 to Feb. 1988.
* Associate Professor of Systems Engineering and Civil Engineering, Feb. 1988 to June 1994.
* Professor of Systems, Control, and Industrial and Civil Engineering, July 1994 to July 1995.
* Adjunct Professor of Electrical Engineering and Computer Science, Aug. 1995 – June 2000.

Courses taught: reliability and risk analysis; water and energy systems engineering; decision analysis; mathematical modeling; engineering economics and financial accounting; introduction to systems engineering; legal, economic and social aspects of resources management.

**Oak Ridge National Laboratory**, Energy Division, Wigner Fellow, Jan. 1982 to Jan. 1984. Research on water supply for electric power, energy planning in developing countries, power markets, spatial market economics. Sponsors: Electric Power Research Institute, US Agency for Intl. Development, Wigner Fellowship program.

**Brookhaven National Laboratory**, Division of Regional Studies, Upton, NY. Economics Associate III. Sept. 1977 to Aug. 1978, Summer 1979. Research on power plant siting, water supply for power, northeastern coal markets. Sponsors: US Department of Energy, US Nuclear Regulatory Commission.

Summer positions with the **Maryland Power Plant Siting Program**, Annapolis, MD (1977), **Oak Ridge National Laboratory**, Energy Division, Regional & Urban Studies Section, Oak Ridge, TN (1975, 1976), **Northeast Utilities**, Dept. Regional & Environmental Planning, Berlin, CT (1974). Internships with the **Salt River Project**, Phoenix, AZ (March - April, 1974), **The President's Council on Environmental Quality**, Washington, DC (April - May, 1973).

**VISITING APPOINTMENTS**

Visiting Researcher, Energieonderzoek Centrum Nederland (ECN, Netherlands Energy Research Foundation), Policy Studies Unit, Amsterdam, The Netherlands, Sept. 2001–July 2002; March-July 2017

Visiting Scholar, Institute for Research in Technology, ICAI School of Engineering, Comillas Pontifical University, Madrid, Spain, Jan.-March, 2017.

Visiting Associate, Computing & Mathematical Sciences, California Institute of Technology, Pasadena, CA, Nov.-Dec. 2016.

Visiting Scholar, Department of Electrical Engineering, University of Washington, Seattle, WA, July-October 2016.

Overseas Fellow, Churchill College, Cambridge, Aug. 2009-July 2010.

Senior Research Associate, Electricity Policy Research Group, Department of Economics and Judge Business School, University of Cambridge, Aug. 2009-July 2010.

Visiting Professor, Systems Analysis Laboratory, Helsinki University of Technology, Espoo, Finland, Aug. 2000.

Visiting Professor, Dept. of Geography & Environmental Engineering, The Johns Hopkins University, Baltimore, MD, Aug. 1995 – June 1996.

Visiting Scientist, Dept. Civil Engineering, University of Washington, Seattle, WA, Sept. 1991 – Nov. 1992.

**CONSULTING**

PJM, LLC, 2013

Booz & Company, Long Term Transmission Rights Workshop, 2011

UK Office of Gas & Electricity Markets, TransmiT Project, 2010-2011

Maryland Dept. of the Environment and University of Maryland, 2010-2011

Lawrence Berkeley Laboratory, City of Auburn Technical Advisory Group, 2010-2011

FinGrid (Finnish Network Operator), 2010

Brattle Group, 2008

U.S. Army Corps of Engineers, Baltimore District, 2006, 2007

U.S. Dept. of Energy, Energy Information Agency, 2000, 2006

Maryland Power Plant Research Program, 2003

Planit Management, Ltd., 2001

Federal Energy Regulatory Commission, 1996-2001

Analysis Group/Economics, 1999

Gas Research Institute, Chicago, IL, 1991, 1994, 1997-1999

U.S. Army Corps of Engineers, Institute of Water Resources, Ft. Belvoir, VA, 1984-1998

Commonwealth Energy, 1998

Electric Power Research Institute, 1997

Edison Source and Resource Management Intl., 1996

Northeast Ohio Sewer District, Cleveland, OH, 1995

BC Gas, Ltd., Vancouver, BC, 1994-95

Ontario Hydro, Toronto, ONT, 1995

BC Hydro, Vancouver, BC, 1995-96

Decision Systems International, Atlanta, GA, 1994-95

Oak Ridge National Laboratory, Oak Ridge, TN, 1994

Energy & Environmental Economics, Inc., San Francisco, CA, 1994

IDEA, Inc., Washington, DC, 1992-1994

U.S. Army Corps of Engineers, Detroit District, 1994

National Regulatory Research Institute, Columbus, OH, 1989-1994

Seattle City Light, Resource Planning and Analysis Group, Seattle, WA, 1991-1992

Utility Air Regulatory Group, Washington, DC, 1991

South Florida Water Management District, West Palm Beach, FL, 1989

Hamilton, Rabinovitz, and Szanton, Los Angeles, CA, 1980-1981

New York Department of Law, New York, NY, 1981

Brookhaven National Laboratory, Upton, NY, 1980

Argonne National Laboratory, Argonne, IL, 1980

**HONORS**

Presidential Young Investigator Award, National Science Foundation, 1986-1991.

***Fellowships:***

* Fellow, Institute for Operations Research & Management Science (INFORMS), 2010.
* Fellow, Institute of Electrical and Electronics Engineers (IEEE), 2008
* Guest Professor, School of Electrical Engineering, Southeast University, Nanjing, 2013-2014
* Overseas Fellow, Churchill College, Cambridge, UK 2009-2010
* Economic & Social Research Council/Social Science Research Council (UK) Collaborative Visiting Fellowship 2010
* Wigner Fellow, Oak Ridge National Laboratory, 1982-84.
* Sage Fellow (1979-80) and McMullen Fellow (1978-79), Cornell University.

***Paper Awards:***

* 2016 Runner-Up, Best student paper, Decision Analysis Society (INFORMS), and 2016 Runner-Up for the *Decision Analysis* Journal Special Recognition Award (for Venkat, Clemen, Hobbs, and Kenney, Decision Analysis, 2016).
* 2014 Best Publication Award in Energy, INFORMS Section on Energy, Natural Resources, & Environment for the period 2010-2012 (for Zhao, Hobbs, and Pang, Operations Research, 2010)
* 2014 Best Publication Award Environment-Sustainability, INFORMS Section on Energy, Natural Resources, & Environment (for Chen, Liu, and Hobbs, Operations Research, 2011)
* 2013 Editor’s Choice Award, Water Resources Research (for Kenney, Hobbs et al., WRR, 2013).
* 2007 Best Publication Award (Energy), INFORMS Energy, Natural Resources, & Environment Area (for Harrington, Hobbs, et al., Mathematical Programming Series B, 2005)
* 2006 Bright Idea Award, New Jersey Policy Research Organization and Stillman School of Business at Seton Hall University (for R.P. O’Neill, P.M. Sotkiewicz, B.F. Hobbs et al., European J. Operational Research, 2005)
* 2004 Decision Analysis Publication Award (for the best Decision Analysis publication in 2002), Decision Analysis Society of INFORMS (for Anderson and Hobbs, “Using a Bayesian Approach to Quantify Scale Compatibility Bias,” Management Science, 2002)
* First Place, INFORMS Energy, Natural Resources, and Environment Section, Student Paper Competition, November 2004 (Second author and advisor to Yihsu Chen for Chen and Hobbs, “An Oligopolistic Power Market Model with Tradable NOx Permits,” IEEE Transactions on Power Systems, 2005)
* Second Place, INFORMS Decision Analysis Section, Student Paper Competition, November 2001 (Second author and advisor to R. Anderson)
* 1990 Outstanding Research Oriented Paper, American Society of Civil Engineers (ASCE) Water Resources Planning and Management Division (for “Risk Analysis of Aquifer Contamination by Brine”, ASCE JWRPM, 1988)

***Invited Plenary Speaker:***

* IAEE, Houston, Nov. 2017
* 2013 Asia-Pacific Economic Coordination (APEC)-China State Grid-China Electric Power Research Institute Symposium on Demand Response, June 6, 2013, Nanjing China.
* 48th Allerton Conference on Communication, Control, and Computing, UIUC, Oct. 1, 2010
* Stochastics and Risk Modelling for Energy and Commodity Markets, Innovative Approaches in Economics, Finance and Engineering, International Ruhr Energy Conference, 4 – 6 Oct. 2009, Duisburg-Essen University, Germany
* International Association of Energy Economists, 10th European Conference, Vienna, 7-10 Sept. 2009
* Trans-Atlantic INFRADAY, Conference on Applied Infrastructure Modeling and Policy Analysis, Critical Infrastructures in Energy and Other Networked Industries, College Park, Maryland, Nov. 2007
* International Association of Energy Economics European Meeting, Prague, June 2003
* International Conference on Complementarity Problems, Cambridge, July 2002

Certificate for Outstanding Service, The National Academies, Board on Environmental Studies and Toxicology, 2006.

2005 “Significant Reviewer” Award, IEEE Transactions on Power Systems

Mortar Board, 1991 Outstanding Professor Award, Case Western Reserve University, April 1991.

Nominated for John S. Diekhoff Award for Outstanding Graduate Teaching, Case Western Reserve University, March 1988 and March 1991.

ASCE Energy Division Nominee for the ASCE Walter L. Huber Civil Engineering Research Prize, May 1985.

Rhodes Scholarship Nominee from South Dakota State University, 1975.

**PROFESSIONAL ACTIVITIES**

### **Research Institute Affiliations**

Associate Researcher, Energy Policy Research Group, University of Cambridge, UK, 2005-Present

Scientific Advisor, Policy Studies Unit, Energieonderzoek Centrum Nederlands (ECN), Amsterdam, The Netherlands, 2003-2008, 2011-Present.

Principal Investigator, National Center for Earthsurface Dynamics, University of Minnesota (NSF Science and Technology Center), 2005-2012

Institute Associate, National Regulatory Research Institute, Columbus, OH, 1989-1995.

Ameritech Fellow, Center for Regional Issues, Case Western Reserve University, Cleveland, OH, 1987, 1988, 1989.

# Advisory Boards

Chair, Market Surveillance Committee, California Independent System Operator, Folsom, CA, 2010-Present; Member, 2002-2010.

Member, State of Maryland Air Quality Control Advisory Council, 2017-Present.

Member, Mitigation Working Group, State of Maryland Commission on Climate Change, 2015-Present.

Member, Stakeholder Advisory Group, Grid Modernization Laboratory Consortium, 2016-Present.

Advisory Board, Maryland Clean Energy Center, 2014-2015.

Private Universities Representative appointed by Governor O’Malley, Maryland Offshore Wind Business Development Fund Advisory Committee, 2013-2014.

Member, Public Interest Advisory Committee, Gas Technology Institute, Chicago, 2003-2013.

Member, Technical Advisory Committee, Planning Tool Development for Prioritization of Louisiana Coastal Protection and Restoration Alternatives, Rand Corporation and State of Louisiana Coastal Protection and Restoration Authority, 2010-2012.

Member, Energy Master Plan Advisory Panel, State of New Jersey, September 2007

Member, Expert Advisory Board, New Jersey Sustainable State Institute, New Brunswick, NJ, 2006.

Member, National Research Council Committee on Changes in New Source Review Programs for Stationary Sources of Air Pollutants, 2004—2006.

Affiliate, Energy and Environmental Economics, Inc., San Francisco, CA

# Editorial Service

Competition and Regulation in Network Industries, Editorial Board, 2009-Present

Economics of Energy & Environmental Policy, IAEE, Editorial Board, 2011-Present

Energy Economics, Associate Editor, 2007-Present

EURO Journal on Decision Processes, Editorial Board, 2012-Present.

Journal of Energy Markets, Editorial Board, 2007-Present

Journal of Energy Engineering (ASCE), Associate Editor, 2007-Present

IEEE Transactions on Power Systems, Editorial Board, 2005-2015.

Power Engineering Letters (IEEE), Editorial Board, 2005-2015.

Journal of Infrastructure Systems (ASCE), Associate Editor, 2003-2009

Energy, The International Journal, Associate Editor, 1996-2013

The Electricity Journal, Editorial Board, 1995-Present

Area Editor, Environment and Natural Resources, Operations Research, 1996-2005

Deputy Editor, Systems Analysis and Economics, Water Resources Research, 1997-2000.

Energy Services Journal, The Journal of the Association of Energy Services Professionals, 1995-1996

Water Resources Research, Associate Editor, 1988-1995

**Professional Organizations and Service**

Co-organizer, KAPSARC Economics Workshop and Career Paths Workshop, George Washington University, Oct. 3-4, 2013

Co-organizer and Co-Founder, Atlantic Energy Group (formerly the East Coast Energy Group), 2003-Present

Past Chairman, Executive Committee, Energy Division, American Society of Civil Engineers (ASCE), 1999-2000 (Chair, 1998-1999; Vice Chair, 1997-1998; Secretary 1996-1997)

Chairman, Sessions Committee, ASCE Energy Division, 1992-2000; Organizer of ASCE sessions for American Power Conference

Organizer, 8th YEEES (Young Energy Economists & Engineers Seminar), University of Cambridge, April 8-9, 2010

Co-Organizer, Workshop on "Policy-Making Benefits and Limitations from using Financial Methods and Modelling in Electricity Markets," UK Energy Research Centre, July 2008, London, UK.

Co-organizer and Co-chairman, "European Science Foundation Exploratory Workshop on Mathematical Models for Electricity Markets," Castilla-La Mancha University, Ciudad Real, Spain, July 13-14, 2006.

Invited Papers Co-Chair, INFORMS National Meeting, Washington, DC, 2008

INFORMS Subdivisions Council, Sections Representative, 2004-2005

Contributed Papers Chair, INFORMS National Meeting, Philadelphia, Nov. 1999

Member, Systems Economics Committee and Working Group, IEEE Power Engineering Society

Member, Emissions Task Force, IEEE Power Engineering Society, 1992-96

Member, Northeast Ohio Areawide Coordination Agency Task Force on Hazardous Material Transportation, 1990-95

Member, Northeast Ohio Environmental Priorities Project, Quality of Life Committee, 1994-95.

Chairman, Awards Committee, ASCE Energy Division, 1995-Present

Chairman and Control Member, Energy Resources Management Committee, ASCE Energy Division, 1985-91

Member, Task Committee on Groundwater Monitoring Network Design, ASCE Hydraulics Division, 1988-90

Member, Task Committee, Risk and Reliability Analysis of Water Distribution Systems, ASCE Hydraulics Div., 1986-1988

Member of American Society of Civil Engineers, Institute for Operations Research and Management Science, International Association for Energy Economics, IEEE

#### Recent University Service

SPH-WSE Environment Health Sciences-DoGEE Restructuring Committee, Co-Chair, Nov. 2014-February 2015.

Founding Director, E2SHI (Environment, Energy, Sustainability & Health Institute), 2010-Present

Public Interest Investment Advisory Committee (Advisory Committee to JHU Board of Trustees), 2015-Present

Member, Sustainability Hopkins Investment Evaluation Committee, 2011-2015

JHU Whiting School of Engineering, Graduate Curriculum Committee, 2006-2009, 2011-Present

Undergraduate Program Coordinator, DOGEE, 2003-Present

Chair, JHU President’s Climate Change Task Force, 2008-2009

Program Committee for the Technical Management and Systems Engineering Programs, Engineering and Applied Science Programs for Professionals, JHU, 2007-2009, 2011-Present

Homewood Tenure and Promotion Policies Committee, 2012-2013

Chair, DOGEE Systems and Economics Search Committees, 2004-2007

Homewood Academic Council, JHU (Responsible for Homewood Campus Promotion & Tenure Recommendations and Academic Regulations) 2000-2005.

Ad Hoc Committee on Academic Council Composition, JHU, 2007.

# SPONSORED RESEARCH

* “Coordinated Ramping Product and Regulation Reserve Procurements in CAISO and MISO using Multi-Scale Probabilistic Solar Power Forecasts (Pro2R)” (B. Hobbs, PI; JHU Prime Contractor; IBM, NREL, and University of Texas-Dallas subcontractors), $2.173M ($507K, JHU Portion), 7/2018-6/2021.
* “Interactions of Energy Storage and Transmission Expansion”, Western Electricity Coordinating Council and LBNL, $40K, B. Hobbs, PI, 2017-2018.
* “Grid Planning Methods and Applications Support to the Power Systems Planning Support Program,” The World Bank; B. Hobbs PI, 2016-2018.
* Mid-Atlantic Regional Integrated Sciences and Assessments (MARISA) program (NOAA, 5 years starting 9/2016, JHU share $425K; D. Knopman (RAND) Director; B. Hobbs JHU Co-Director).
* Yale-JHU SEARCH (Solutions for Energy, Air, Climate, and Health) Center (USEPA, $3M, JHU Portion; M. Bell (Yale) Director; B. Hobbs JHU Co-Director), 1/16-1/21
* "Collaborative Research: Commitment, Expansion, and Pricing in Uncertain Power Markets: Discrete Hierarchical Models and Scalable Algorithms,” ($160K, JHU portion; U. Shambhag (NSF, Penn State), PI; B. Hobbs, JHU CoPI), 7/14-6/17
* “Coastal SEES Collaborative Research: Morphologic, Socioeconomic and Engineering Sustainability of Massively Anthropic Coastal Deltas: the Compelling Case of the Huanghe,” (NSF, $298K JHU portion; B. Hobbs JHU CoPI; J. Nittrouer, Rice U, PI; M. Lamb, CalTech, CoPI; G. Parker, UIUC, Co-PI; G. Kineke, Boston C., CoPI), 9/14-6/18.
* “IBSS-Ex: Integrating social science and systems methodologies for sustainability: Promoting appropriate waste disposal practices in low-income neighborhoods disposal practices in low-income neighborhoods” (NSF, $250K; P. Winch, PI; C. Parker and B. Hobbs, CoPIs), 8/14 – 6/16.
* “WECC Demonstration of Long-Term Transmission Planning Considering Long Run Uncertainty, Resource-Transmission Co-optimization, and Variability,” Western Electricity Coordinating Council and LBNL, $160K, 5/14-6/15
* "Study - Co-Optimization of Transmission with other Resources - Demonstration," National Association of Regulatory Utility Commissioners,” ($45K JHU portion; R. Johnson, Energy Exemplar, PI; J. McCalley, ISU CoPI; B. Hobbs JHU CoPI), 8/14-1/15.
* "Co-Optimization and Anticipative Planning Methods for Bulk Transmission and Resource Planning Under Long-Run Uncertainties", Bonneville Power Administration, 9/14-9/18 ($234K, JHU Portion; J. McCalley, ISU, PI; S. Guikema, JHU PI; B. Hobbs, CoPI)
* “Performance and Effectiveness of Green Infrastructure Stormwater Management Approaches in the Urban Context: A Philadelphia Case Study.” 2013-2016 ($1M, A. McGarity, Swarthmore College, PI; B. Hobbs CoPI)
* “PIRE: USA/Europe Partnership for Integrated Research and Education in Wind Energy Intermittency: From Wind Farm Turbulence to Economic Management,” (WINDINSPIRE). 2012-2017 ($4.3M, C. Meneveau, JHU, Director; B. Hobbs, D. Gayme, S. Guikema, J. Cardell, et al., PIs).
* “Sustainable Energy Pathways: Integrating Heterogeneous Energy Resources for Sustainable Power Networks - A Systems Approach.” 2012-2016 ($1.6M, D. Gayme, JHU, Director; B. Hobbs, C. Meneveau, JHU, CoPIs; A. Chakkraborty, NCSU, CoPI).
* “Collaborative Implementation Strategy for Sediment Reduction for the Greater Blue Earth River Basin” (CISSR-Blue Earth). 2012-2015, Funded by Minnesota Pollution Control Agency. ($770K, PIs: P. Belmont (USU), J. Marr (UMinnesota), K. Gran (UMinn Duluth), P. Wilcock, B. Hobbs (JHU)), 2012-2015
* “Transmission Investment Assessment Under Uncertainty Using a Multi-Stage Stochastic Model Approach with Recourse”, US Department of Energy, Consortium for Electricity Reliability Technology Solutions, 3/2011-12/2015.
* “System Dynamics Analysis of Obesity”, NIH, 12/2010 (PI: Y. Wang, JHU School of Public Health/U Buffalo).
* “Model-based Methods for Debiasing Individual Probability Assessments: Theory and Experiments”, National Science Foundation (NSF), 3/2010-3/2013 (R. Clemen, Duke University, and B.F. Hobbs, PIs).
* Graduate Research Supplement to EFRI RESIN, NSF, 9/2010-8/2013.
* “EFRI-RESIN: Development of Complex Systems Theories and Methods for Resilient and Sustainable Electric Power and Communications Infrastructures,” NSF, 9/2008-8/2013 (B. Hobbs, PI of JHU Subcontract; Overall PI: L. Mili, Virginia Tech).
* “Analysis of Tradeoffs Implicit in a Set of IPM Runs”, USEPA, 12/2007-7/2009.
* “Power System Responses to Complex Environmental Policy and Incentives Under Restructuring: Models and Analyses of Policy Interactions, Effectiveness, and Efficiency,” NSF, 9/2006-8/2010 (B. Hobbs, PI; C. Norman, co-PI)
* “Study of Economic and Energy Impacts of Maryland Participation in the Northeastern Regional Greenhouse Gas Initiative,” Maryland Department of the Environment, 6/2006-6/2008.
* “Economic and Multicriteria Analysis of River Restoration Decisions,” National Center for Earth Surface Dynamics (funded by NSF), University of Minnesota, 2005-2013 (C. Paola and E. Foufoula-Georgiou, Directors; B.F. Hobbs, PI).
* “Methodology for Assessing the Effects of Technological and Economic Changes on the Location, Timing and Ambient Air Quality Impacts of Power Sector Emissions,” USEPA STAR Grant, 2005-2008 (H. Ellis, PI; B. Hobbs, D. Burtraw, K. Palmer, Co-PIs).
* “Analysis of Equilibrium Long-Run Prices in Multidimensional Capacity Markets,” PJM, 6/04-9/06.
* “Development Of A Regional-Scale Model For The Management Of Multiple-Stressors In The Lake Erie Ecosystem,” USEPA STAR grant, Subcontract to CWRU (J.F. Koonce, CWRU PI; B.F. Hobbs, coPI), 2003-2006.
* “Active Load Management Under Retail Access,” Maryland Power Plant Research Program, 12/03-11/04.
* “Dynamic Game-Theoretic Models of Electric Power Markets and Their Vulnerability”, National Science Foundation (B.F. Hobbs PI; J.-S. Pang, J. Harrington, and T. Friesz, CoPIs), 7/1/02-6/30/05.
* “Analysis of Multipollutant Policies for the Electric Power Sector under Multiple Objectives: The Value of Policy Coordination Under Technological and Economic Uncertainties,” USEPA, Office of Atmospheric Programs, 8/02-8/03.
* “Implications of Climate Change for Regional Air Pollution, Health Effects and Energy Consumption Behavior,” USEPA STAR Grant, 2/01 – 2/04 (H. Ellis, PI; B. Hobbs, F. Joutz, J. Patz, Co-PIs).
* “Comprehensive Access to Off-Site Library Print Materials,” Sponsored by Mellon Foundation, 1/99-12/01 (S. Choudhury, PI; B. Hobbs, Co-PI).

- “Simulating Strategic Behavior in Multiple Power Markets by Complementarity and MPEC Methods; Energy, Capacity, Ancillary Services, Green Power and Emissions Allowance Markets,” NSF, 9/00 – 8/02 (J.-S. Pang, Co-PI).

* “An Analysis of Electric Power Capacity Markets,” Maryland Power Plant Research Program (MPPRP), 12/99 – 12/01.
* “The 1997 *Pfiesteria Piscicida* Outbreak In Maryland: Possible Economic Impacts,” MPPRP, 1/99 – 6/00.
* “Multicriteria Evaluation of Lake Erie Ecosystem Management.” USEPA Region V, 9/98-12/00.
* “Distribution Capital Budgeting Evaluation System.” Baltimore Gas & Electric Corporation, 2/98-8/98.
* “Assessment of Fishery Resource Values Used for Damage Compensation in Maryland, and Economic Assessment of Acid Mine Drainage Abatement in the North Branch of the Potomac River Watershed: Application.” MPPRP, 11/96-6/00.
* “Modeling and Multiobjective Risk Decision Tools for Assessment and Management of Great Lakes Ecosystems.” USEPA, 9/96-10/00 (J.F. Koonce, Co-PI).
* “New Methods for Decision Focussed Integrated Assessment: Multiple Objectives, Risk Evaluation, and Visualization.” NSF, 9/96-9/98 (Co-PI; H. Ellis, PI).
* “Economic Assessment of Acid Loading Abatement in the North Branch of the Potomac River Watershed: Procedure and Demonstration.” MPPRP, 5/96-8/96.
* “Methods for Integrating Resource and Transmission Planning: Multiarea Production Costing and Resource/T&D Coordination.” NSF, 9/95-8/99.
* “The Value of Improved Short-Term Load Forecasts.” Electric Power Research Institute (EPRI), 9/95-12/97.
* “Development of a Method for Quantifying Benefits of Projects Addressing Environmental Issues,” Gas Research Institute, 1/95-2/96.
* “Multiarea Production Costing Methodology Development” and “Analyzing the Effect of NOx Constraints on Expected Production Cost,” EPRI, 1/94-12/94.
* “Climate Change Information and Great Lakes Management: Modeling, Worth of Flexibility, and Process Evaluation.” NSF and US Army Corps of Engineers, 4/93-3/96.
* “Improved Methods for Considering Environmental Externalities in Resource Acquisition: Multiple Criteria, Location-Specific Impacts, and Secondary Effects.” US Dept. of Energy Integrated Resource Planning Research Program, Oak Ridge National Laboratory, 9/92-3/94.
* “Enhancement of the `Most Value' Criterion: Multicriteria Analysis.” Centerior Energy Corporation, 3/91-11/91.
* “Acid Rain Special Topic Information.” Ohio Consumers' Counsel, 8/90 - 6/91.
* “Comprehensive Emission Reduction Model.” Ohio Air Quality Development Authority (OAQDA), 5/89-7/90.
* “Integrated Resource Planning Assistance.” Centerior Energy Corporation, 8/89 - 6/90.
* Presidential Young Investigator, NSF, 5/86-5/91.
* “Analysis of Risks in Least Cost Planning.” National Regulatory Research Institute, 4/88-12/88.
* “Multiobjective Screening of Water Resources Projects Under Risk.” U.S. Army Corps of Engineers, 2/88-6/89.
* “Session on Natural Hazards.” NSF, 1/88-1/89.
* “Development of a Multiobjective Evaluation System for Water Resources Planning.” South Florida Water Management District, 11/88-6/1989.
* “Criteria for Evaluating Integrated Resource Planning Programs.” Centerior Energy Corporation, 9/88-2/89.
* “Economic Criteria for Integrated Resource Planning.” Centerior Energy Corporation, 9/87-1/88.
* “Regional Economic Impacts of Least Cost Planning and Proposed Acid Rain Legislation.” Ameritech Fellowship from the Center for Regional Economic Issues, Case Western Reserve University, 9/87-6/90.
* “Least Emissions Dispatching: Cost and Employment Impact Analysis.” OAQDA, 6/87-6/88.
* “Water Resources Issues Management.” EPRI, 4/87-12/87.
* “Identification of Least Cost Planning Issues for the Centerior Energy Corporation.” Centerior Energy Corporation, 10/87-3/88.
* “Impact of Precipitation Interruption upon Water Supplies.” Federal Emergency Management Administration (through Oak Ridge National Lab.), 2/87-10/87.
* “Project Management Assistance, Aircraft Deployment Analysis System Project.” U.S. Military Airlift Command (through ORNL), 10/86-8/87.
* “Monte Carlo Simulation of Energy Investments.” Standard Oil Company, 10/86-10/87.
* “Risk-Benefit Analysis of Annular Disposal of Oil and Gas Brines.” U.S. Geological Survey, Ohio Water Resources Center, 7/85 - 6/87.

**PUBLICATIONS**

Citations: scholar.google.com/citations?user=3oKvgGcAAAAJ&hl=en

**Books**

S.A. Gabriel, A.J. Conejo, J.D. Fuller, B.F. Hobbs, and C. Ruiz, *Complementarity Modeling in Energy Markets*, Springer-Verlag, International Series in Operations Research and Management Science, Heidelberg/Dordrecht/London, 2012, 629 pp.

Committee on Changes in New Source Review Programs for Stationary Sources of Air Pollutants*, New Source Review for Stationary Sources of Air Pollution*, National Academies Press, Washington, DC, 2006.

B.F. Hobbs and P. Meier, *Energy Decisions & The Environment: A Guide to the Use of Multicriteria Methods*, International Series in Operations Research & Management Science, Kluwer Academic Publishers, Boston/ Dordrecht/London, 2000, 257 pp.

B.F. Hobbs, M.H. Rothkopf, R.P. O'Neill, and H.-p. Chao, eds., *The Next Generation of Electric Power Unit Commitment Models*, International Series in Operations Research & Management Science, Kluwer Academic Publishers, Boston/Dordrecht/ London, 2001, 319 pp.

## Edited Proceedings and Special Issues

B.F. Hobbs, ed., Energy in the 90's, Specialty Conference of the Energy Division, American Society of Civil Engineers, New York, NY, April 1991.

A. Conejo and B.F. Hobbs, eds., “Foreword to the Special Issue on Transmission Investment, Pricing, and Construction”, IEEE Transactions on Power Systems, 22(4), Nov. 2007

B.F. Hobbs and E. Litvinov, eds., “Foreword to the Special Section on Electricity Market Operations,” IEEE Transactions on Power Systems, Jan. 2014

Y. Ding, C. Kang, J. Wang, Y. Chen and B.F. Hobbs. Eds., “Foreword to the Special Section on Power System Planning and Operation towards a Low-Carbon Economy,” IEEE Transactions on Power Systems, 30(2), March, 2015, 1015-1016.

## Journal Articles

* C. Bakker, B. Zaitchik, S. Siddiqui, B.F. Hobbs, E. Broaddus, R. Neff, J. Haskett, C. Parker, "Shocks, Seasonality, and Disaggregation: Modelling Food Security through the Integration of Agricultural, Transportation, and Economic Systems", Agricultural Systems, accepted.
* F.D. Munoz, S. Wogrin, S.S. Oren, B.F. Hobbs, “Economic Inefficiencies of Cost-based Electricity Market Designs,” The Energy Journal, 39(3), 2018, 51-68.
* S.J. Cho, P. Wilcock, B.F. Hobbs, Topographic Filtering Simulation Model for Sediment Source Apportionment, Geomorphology, accepted.
* J. Kazempour, B.F. Hobbs, P. Pinson, “A Stochastic Market Design With Revenue Adequacy and Cost Recovery by Scenario: Benefits and Costs,” IEEE Transactions on Power Systems, accepted.
* A. Mahoney, E. Denny, B.F. Hobbs, and M. O'Malley, The Drivers of Power System Emissions: An Econometric Analysis of Load, Wind and Forecast Errors, Energy Systems, accepted.
* J. Kazempour and B.F. Hobbs, “Value of Flexible Resources, Virtual Bidding, and Self-Scheduling in Two-Settlement Electricity Markets With Wind Generation – Part I, Formulation” IEEE Transactions on Power Systems, accepted.
* J. Kazempour and B.F. Hobbs, “Value of Flexible Resources, Virtual Bidding, and Self-Scheduling in Two-Settlement Electricity Markets With Wind Generation – Part II,” IEEE Transactions on Power Systems, accepted.
* E. Spyrou, J. Ho, B.F. Hobbs, R. Johnson, and J.D. McCalley, “What are the Benefits of Co-optimizing Transmission and Generation Investment? Eastern Interconnection Case Study,” IEEE Transactions on Power Systems, 32(6), 2017, 4265-4277.
* C. Bothwell and B.F. Hobbs, “Crediting Renewables in Electricity Capacity Markets: The Effects of Alternative Definitions upon Market Efficiency,” The Energy Journal, 38 (KAPSARC Special Issue), June, 2017.
* T. Brijs, C. de Jonghe, B.F. Hobbs, and R. Belmans, “Interactions between the design of short-term electricity markets in the CWE region and power system flexibility,” Applied Energy, 195, 1 June 2017, pp. 36–51
* F.D. Munoz, A.H. van der Weijde, B.F. Hobbs, and J.-P. Watson, “Does risk aversion affect transmission and generation planning? A Western North America case study,” Energy Economics, 64, May 2017, pp. 213–225.
* G. Morales-Espana, L. Ramírez-Elizondo, and B.F. Hobbs, “Hidden Power System Inflexibilities Imposed by Traditional Unit Commitment Formulations,” Applied Energy, 191(1), April 2017, 223–238, 10.1016/j.apenergy.2017.01.089.
* H. Xing, Z. Lin, M. Fu, and B.F. Hobbs, “Distributed Algorithm for Dynamic Economic Power Dispatch with Energy Storage in Smart Grids,” IET Transactions on Control Theory and Applications, 11(11), 14 July 2017, p. 1813 – 1821.
* K. van den Burgh, R. Broder-Hytowitz, K. Bruninx, E. Delarue, W. D'haeseleer, and B.F. Hobbs, "Benefits of coordinating sizing, allocation and activation of reserves among market zones," Electric Power Systems Research, 143: 140–148, Feb. 2017.
* R.J.A.M. Stevens, B.F. Hobbs, A. Ramos, and C. Meneveau, “Combining economic and fluid dynamic models to determine the optimal spacing in very large wind farms,” Wind Energy, 20(3): 465-477, March 2017, DOI: 10.1002/we.2016.
* T. Brijs, R. Belmans, B.F. Hobbs, and S. Siddiqui, “Price-based unit commitment electricity storage arbitrage with piecewise linear price-effects,” Journal of Energy Storage, 7: 52-62, August 2016.
* H. Guo, B.F. Hobbs, M.E. Lasater, C.L. Parker, and P.J. Winch, “System Dynamics-based Evaluation of Interventions to Promote Appropriate Waste Disposal Behaviors in Low-Income Urban Areas: A Baltimore Case Study,” Waste Management, 56, Oct. 2016, 547-560.
* C. LoPrete and B.F. Hobbs, “A cooperative game theoretic analysis of incentives for microgrids in regulated electricity markets,” Applied Energy, 169, 1 May 2016, 524–541.
* E. Shayesteh, B.F. Hobbs, and M. Amelin, “Scenario Reduction, Network Aggregation, and DC Linearization: Which Simplifications Matter Most in Operations and Planning Optimization?”, IET Generation, Transmission, and Distribution, 10(11), Aug. 2016, 2748-2755.
* D.A. Schiro, B.F. Hobbs, and J.-S. Pang, “Perfectly Competitive Capacity Expansion Games with Risk-Averse Participants,” Computational Optimization and Applications, 65(2), Nov. 2016, 511-539.
* A.P. Perez, E.E. Sauma, F.D. Munoz, and B.F. Hobbs, “The Economic Effects of Interregional Trading of Renewable Energy Certificates in the WECC,” The Energy Journal, 37(4), 2016, 267-296.
* V. Prava, R.T. Clemen, B.F. Hobbs, and M. Kenney, “Partition Dependence and Carryover Biases in Subjective Probability Assessment Surveys for Continuous Variables: Model-based Estimation and Correction”, Decision Analysis, 13(1), March 2016, pp. 51-67.
* A. Christensen and B.F. Hobbs, A Model of State and Federal Biofuel Policy: Feasibility Assessment of the California Low Carbon Fuel Standard, Applied Energy, 169, May 2016, 799-812, DOI: 10.1016/j.apenergy.2016.01.121
* P.C. Bhagwat, L.J. deVries, and B.F. Hobbs, “Expert survey on capacity markets in the US: Lessons for the EU”, Utilities Policy, 38, Feb. 2016, 1-17.
* V. Krishnan, J. Ho, B.F. Hobbs, A.L. Liu, J.D. McCalley, M. Shahidehpour, Q.P. Zheng, Co-optimization of electricity transmission and generation resources for planning and policy analysis: review of concepts and modeling approaches, Energy Systems, 7(2), May 2016, 297-332.
* O. Ozdemir, F. Munoz, J. Ho, and B.F. Hobbs, “Economic Analysis of Transmission with Demand Response and Quadratic Losses by Successive LP”, IEEE Transactions on Power Systems, 31(2), 2016, 1096-1107.
* F.D. Munoz, B.F. Hobbs, and J.-P. Watson, New Bounding and Decomposition Approaches for MILP Investment Problems: Multi-Area Transmission and Generation Planning Under Policy Constraints, Euro. J. of Operational Research, 248(3), 1 February 2016, 888-898.
* Y. Chen, B.F. Hobbs, J.H. Ellis, C. Crowley, and F. Joutz, “Impacts of Climate Change on Power Sector NOx Emissions: A Long-Run Analysis of the US Mid-Atlantic Region,” Energy Policy, 84, 2015, 11-21.
* B. Wang and B.F. Hobbs, “Real-Time Markets for Flexiramp: A Stochastic Unit Commitment-based Analysis,” IEEE Transactions on Power Systems, 31(2), 2016, 846-860.
* L. Deng, P. Renson, and B.F. Hobbs, “What is the Cost of Negative Bidding by Wind? A Unit Commitment Analysis of Cost and Emissions,” IEEE Transactions on Power Systems, July 2015, 30(4), 1805-14.
* C. LoPrete and B.F. Hobbs, “Market power in power markets: An analysis of residual demand curves in California's day-ahead energy market (1998-2000),” The Energy Journal, 36(2), 2015, 191-218.
* E. Shayesteh, B.F. Hobbs, L. Söder, and M. Amelin, “ATC-Based System Reduction for Planning Power Systems With Correlated Wind and Loads,” IEEE Transactions on Power Systems, 30(1), Jan. 2015, 429-438.
* C.K. Chyong and B.F. Hobbs, “Strategic Eurasian Natural Gas Market Model for Energy Security and Policy Analysis: Formulation and Application to South Stream”, Energy Economics, 44, July 2014, 198-211.
* B. Wang and B.F. Hobbs, A flexible ramping product: Can it help real-time dispatch markets approach the stochastic dispatch ideal?, Electric Power Systems Research, 109, April 2014, 128–140
* C. De Jonghe, B.F. Hobbs, and R. Belmans, Value of Price Responsive Load for Wind Integration in Unit Commitment, IEEE Transactions on Power Systems, 29(2), March 2014, 675-685
* F.D. Munoz, B.F. Hobbs, J. Ho, and S. Kasina, An Engineering-Economic Approach to Transmission Planning Under Market and Regulatory Uncertainties: WECC Case Study, IEEE Transactions on Power Systems, 29(1), January 2014, 307-317.
* C. Ruiz, A. Conejo, D. Fuller, S.A. Gabriel, and B.F. Hobbs, A Tutorial Review of Complementarity Models for Decision Making in Energy Markets, EURO Journal on Decision Processes, Vol. 2, Jan. 2014, 91-120.
* R.K. Smith and B.F. Hobbs, “Biomass Electricity Plant Allocation through Non-Linear Modeling and Mixed Integer Optimization,” J. Renewable and Sustainable Energy, 5, 053118, 2013; doi: 10.1063/1.4819493.
* K. Neuhoff, R. Boyd, T. Grau, J. Barquin, F. Echavarren, J. Bialek, C. Dent, C. Von Hirschhausen, B.F. Hobbs, F. Kunz, H. Weigt, C. Nabe, G. Papaefthymiou, and C. Weber, "Renewable Electric Energy Integration: Quantifying the Value of Design of Markets for International Transmission Capacity," Energy Economics, 40, Nov. 2013, 760–772.
* M.A. Kenney, B.F. Hobbs, D. Mohrig, H. Huang, J.A. Nittrouer, W. Kim, and G. Parker, “Cost Analysis of Water and Sediment Diversions to Optimize Land Building in the Mississippi River Delta,” Water Resources Research, 49(6), June 2013, 3388–3405, DOI: 10.1002/wrcr.20139 (2013 *Editor’s Choice Award*)
* J. Hargreaves, B.F. Hobbs, “Metamodeling of Input-Output Relationships for Complex Power Market Models,” Energy Systems, 4(1), 25-45, March 2013.
* F. Munoz, E. Sauma, and B.F. Hobbs, “Power Transmission Planning and the Cost and Performance of Renewable Portfolio Standards,” Journal of Regulatory Economics, 43(3), 2013, 305-338.
* S.K. Jacobi, B.F. Hobbs, and P.R. Wilcock, A Bayesian Framework for Cost-Effective Sediment Reduction in Agricultural Watersheds: Framework and Application to the Minnesota River Basin, J. Water Resources Planning & Management (ASCE), 139(5), 534-543, 2013.
* P.Q. Zheng and B.F. Hobbs, “A Multiobjective Portfolio Analysis of Dam Removals Addressing Dam Safety, Fish Populations, and Cost,” J. Water Resources Planning & Management (ASCE), 2013, 139(1), 65-75.
* S. Wogrin, B.F. Hobbs, D. Ralph, E. Centeno, and J. Barquin, Open versus closed loop capacity equilibria in electricity markets under perfect and oligopolistic competition, Mathematical Programming B, 140(2), 295-322, 2013.
* A. Liu and B.F. Hobbs, Tacit Collusion Games in Pool-Based Electricity Markets under Transmission Constraints, Mathematical Programming B, 140(2), 2013, 351-379.
* J.J. Hargreaves and B.F. Hobbs, Commitment and Dispatch with Uncertain Wind Generation by Dynamic Programming, IEEE Transactions on Sustainable Energy, 3(4), 2012, 724-734.
* D. Eager, B.F. Hobbs, J. Bialek, Dynamic Modelling of Generation Capacity Investment in Markets with High Wind Penetration, IEEE Transactions on Power Systems, 27(4), Nov. 2012, 2127-2137.
* J. Sijm, Y. Chen, and B.F. Hobbs, The impact of power market structure on CO2 cost pass-through to electricity prices under quantity competition - A theoretical approach, Energy Economics, 34(4), July 2012, 1143-1152.
* A.H. van der Weijde and B.F. Hobbs, The Economics of Planning Electricity Transmission to Accommodate Renewables: Using Two-Stage Optimisation to Evaluate Flexibility and the Cost of Disregarding Uncertainty, Energy Economics, 34(5), Sept. 2012, 2089-2101.
* M.A. Kenney, P.R. Wilcock, B.F. Hobbs, N.E. Flores, and D.C. Martínez, "Is Urban Stream Restoration Worth It?", Journal American Water Resources Association, June 2012, 48(3), 603-615.
* C. De Jonghe, B.F. Hobbs, and R. Belmans, “Optimal generation mix with short-term demand response and wind penetration,” IEEE Transactions on Power Systems, May 2012, 27(2), 830-839.
* C. LoPrete, B.F. Hobbs, C. Norman, M. Spakovsky, S. Cano-Andrade, L. Mili, “Sustainability and Reliability Assessment of Microgrids in a Regional Electricity Market”, Energy, 41, 2012, pp. 192-202.
* M. Bazilian, B.F. Hobbs, W. Blyth, I. MacGill, and M. Howells, "Interactions between energy security and climate change: A focus on developing countries," Energy Policy, 39(6), pp. 3750-3756, June 2011.
* A. H. van der Weijde and B.F. Hobbs, “Locational-based Coupling of Electricity Markets: Benefits from Coordinating Unit Commitment and Balancing Markets,” Journal of Regulatory Economics, June 2011, 39(3), pp 223-251.
* Y. Chen, A.L. Liu, and B.F. Hobbs, “Economic and Emissions Implications of Load-based, Source-based and First-seller Emissions Trading Programs under California AB32,” Operations Research, 59, May/June 2011, 696-712 (*2014 Best Publication Award Environment-Sustainability, INFORMS Section on Energy, Natural Resources, & Environment*)
* C.J. Dent, J.W. Bialek, and B.F. Hobbs, “Opportunity Cost Bidding by Wind Generators in Forward Markets: Analytical Results,” IEEE Transactions on Power Systems, 26(3), Aug. 2011, 1600-1608.
* L. Fan, B.F. Hobbs, and C.S. Norman, “Risk Aversion and CO2 Regulatory Uncertainty in Power Generation Investment: Policy and Modeling Implications”, Journal of Environmental Economics & Management, 60(3), Nov. 2010, 193-208.
* M. Ruth, A. Blohm, J. Mauer, S. Gabriel, V.K. Ganesh, B.F. Hobbs, D. Irani, and Y. Chen, "Strategies for Carbon Dioxide Emissions Reductions: Residential Natural Gas Efficiency, Economic and Ancillary Health Impacts in Maryland," Energy Policy, 38(11), Nov. 2010, 6926-6935.
* A. Paul, K. Palmer, M. Ruth, B.F. Hobbs, D. Irani, Y. Chen, K. Ross, and E. Myers, “The Role of Energy Efficiency Spending in Maryland’s Implementation of the Regional Greenhouse Gas Initiative (RGGI),” Energy Policy, 38(11), Nov. 2010, 6820-6829.
* M.-C. Hu and B.F. Hobbs, "Analysis of Multipollutant Policies for the U.S. Power Sector under Technology and Policy Uncertainty using MARKAL", Energy: The International Journal, 35, 2010, 5430-5442
* B.F. Hobbs, J. Bushnell, and F.A. Wolak, “Upstream vs. Downstream CO2 Trading: A Comparison in the Electricity Context”, Energy Policy, 38(7), July 2010, 3632-3643.
* R. Green, B.F. Hobbs, S. Oren, and A. Siddiqui, "Policymaking benefits and limitations from using financial methods and modelling in electricity markets", Energy Economics, 32(4), July 2010, 749-750.
* W. Lise, J. Sijm, and B.F. Hobbs, “The impact of the EU ETS on prices, profits and emissions in the power sector: Simulation results with the COMPETES EU20 model,” Environmental and Resource Economics, 47(1), 2010. 23-44.
* U. Helman and B.F. Hobbs, “Large-Scale Market Power Modeling: Analysis of the U.S. Eastern Interconnection and Regulatory Applications”, IEEE Transactions on Power Systems, 25(3), Aug. 2010, 1434 - 1448.
* B.F. Hobbs, M.-C. Hu, Y. Chen, J.H. Ellis, A. Paul, D. Burtraw, and K.L. Palmer, “From Regions to Stacks: Spatial and Temporal Downscaling of Future Pollution Scenarios for the Power Sector,” IEEE Transactions on Power Systems, 25(2), May 2010, 1179-1189.
* P.Q. Zheng, B.F. Hobbs, and J.F. Koonce. "Optimizing multiple dam removals under multiple objectives: Linking tributary habitat and the Lake Erie ecosystem", Water Resources Research, 45(12), W14217, Dec. 2009.
* J. Zhao, B.F. Hobbs, and J.S. Pang, “Long-Run Equilibrium Modeling of Alternative Emissions Allowance Allocation Systems in Electric Power Markets,” Operations Research, 58(3), May 2010, 529 - 548 (*2014 Best Publication Award in Energy, INFORMS Section on Energy, Natural Resources, & Environment for the period 2010-2012*)
* W. Lise and B.F. Hobbs. "A Dynamic Simulation of Market Power in the Liberalised European Natural Gas Market," The Energy Journal, Special Issue on World Natural Gas Markets and Trade: A Multi-Modeling Perspective, 119-136, 2009.
* J.J. Hargreaves and B.F. Hobbs, “Optimal Selection of Priority Development Areas Considering Tradeoffs between Hydrology and Development Configuration”, Environmental Modeling and Assessment, 14(3), 2009, 289-302.
* H.J. Corsair, J.L. Ruch, P.Q. Zheng, B.F. Hobbs, and J.F. Koonce, “Multicriteria Decision Analysis of Stream Restoration: Potential and Examples,” Group Decision & Negotiation, 18(4), 2009, 387-417.
* R.P. O’Neill, E. Fisher, B.F. Hobbs, and R. Baldick, "Towards a complete real-time electricity market design," Journal of Regulatory Economics, 34(3), Dec. 2008, 220-250.
* R. Mookherjee, B.F. Hobbs, T.L. Friesz, and M.A. Rigdon, “Dynamic Oligopolistic Competition on an Electric Power Network with Ramping Costs and Joint Sales Constraints,” Journal of Industrial & Management Optimization, 4(3), 425–452, August 2008.
* M. Ruth, S.A. Gabriel, K. Palmer, D. Burtraw, A. Paul, Y. Chen, B.F. Hobbs, D. Iran, J. Michael, K. Ross, R. Conklin, and J. Miller “Economic and Energy Impacts from Participation in the Regional Greenhouse Gas Initiative: A Case Study of the State of Maryland, ” Energy Policy, 36(6), 2279-2289, June 2008.
* B.F. Hobbs, G. Drayton, E.B. Fisher, and W. Lise, “Improved Transmission Representations in Oligopolistic Market Models: Quadratic Losses, Phase Shifters, and DC Lines,” IEEE Trans. Power Systems, July 2008, 23(3): 1018-1029.
* W. Lise and B.F. Hobbs, “Future Evolution of the Liberalised European Gas Market: Simulation Results with a Dynamic Model,” Energy: The International Journal, 33(7), July 2008, 989-1004.
* W. Lise, B.F. Hobbs, and F. van Oostvoorn, “Natural Gas Corridors between the EU and Its Main Suppliers: Simulation Results with the Dynamic GASTALE Model,” Energy Policy, 36(6), June 2008, 1890-1906.
* Y. Chen, J. Sijm, B.F. Hobbs, and W. Lise, “Implications of CO2 Emissions Trading for Short-run Electricity Market Outcomes in Northwest Europe,” Journal of Regulatory Economics, 34(3), Dec. 2008, 251-281.
* W. Lise, B.F. Hobbs, and S. Hers, “Market Power in the European Electricity Market - The Impacts of Dry Weather and Additional Transmission Capacity,” Energy Policy, 36(4), April 2008, 1331-1343.
* D. Evans, B.F. Hobbs, C. Oren, and K. Palmer, "Modeling the Effects of Changes in New Source Review on National SO2 and NOx Emissions from Electricity-Generating Units," Environmental Science & Technology, 42(2), 2008, 347-353.
* S.K. Jacobi and B.F. Hobbs, “Quantifying and Mitigating the Splitting Bias and Other Value Tree-Induced Weighting Biases,” Decision Analysis, 4(4), Dec. 2007, 194-210.
* A.J. Conejo and B.F. Hobbs, “Foreword, Special Section on Transmission Investment, Pricing, and Construction,” IEEE Transactions on Power Systems, 22(4), Nov. 2007, 1392-1393.
* J.B. Kim, B.F. Hobbs, and J.F. Koonce. “Analysis of the Sensitivity of Decision Analysis Results to Errors and Simplifications in Problem Structure: Application to Lake Erie Ecosystem Management,” IEEE Transactions on Systems, Man, and Cybernetics A, 37(4), July 2007, 505-518.
* B.F. Hobbs, M.C. Hu, J. Inon, M. Bhavaraju, and S. Stoft, “A Dynamic Analysis of a Demand Curve-Based Capacity Market Proposal: The PJM Reliability Pricing Model,” IEEE Transactions on Power Systems, 22(1), Jan. 2007, 3-11.
* B.F. Hobbs and J.S. Pang, “Nash-Cournot Equilibria in Electric Power Markets with Piecewise Linear Demand Functions and Joint Constraints,” Operations Research, 55(1), Jan-Feb. 2007, 113-127.
* R.M. Anderson, B.F. Hobbs, and J.F. Koonce, “Modeling Effects of Forest Cover Reduction on Larval Walleye Survival in Lake Erie Tributary Spawning Basins,” Ecosystems, 9, 2006, 725-739.
* Y.H. Chen, B.F. Hobbs, T. Munson, and S. Leyffer, “Leader-Follower Equilibria for Electric Power and NOx Allowances Markets,” Computational Management Science, 3(4), Sept. 2006, 307-330.
* J.E. Harrington, B.F. Hobbs, J.S. Pang, A. Liu, G. Roch, “[Collusive Game Solutions via Optimization](http://www.springerlink.com/%28hdk2is551wfsep45jseezgzn%29/app/home/contribution.asp?referrer=parent&backto=searcharticlesresults,1,2;),” Mathematical Programming Series B, 104(2-3), Nov. 2005, 407-435 (*2007 Best Publication Award (Energy)*, INFORMS Energy, Natural Resources, & Environment Area).
* R. Baldick, U. Helman, B.F. Hobbs, and R.P. O’Neill, “Design of Efficient Generation Markets,” Proceedings of the IEEE, 93(11), Nov. 2005, 1998-2012.
* B.F. Hobbs, F.A.M. Rijkers, and M. Boots, “The More Cooperation, The More Competition? A Cournot Analysis of the Benefits of Electric Market Coupling,” The Energy Journal, 26(4), Fall 2005, 69-97.
* K. Neuhoff, J. Barquin, M.G. Boots, A. Ehrenmann, B.F. Hobbs, and F.A.M. Rijkers, “Network-constrained Cournot models of liberalized electricity markets: The devil is in the details,” Energy Economics, 27, May 2005, 495-525.
* K. Taji, J.K. Levy, J. Hartmann, M.L. Bell, R.M. Anderson, B.F. Hobbs, and T. Feglar, “Identifying Potential Repositories for Radioactive Waste: Multiple Criteria Decision Analysis and Critical Infrastructure Systems,” Intl. J. Critical Infrastructures, 1(4), 2005, 404-423.
* Y.H. Chen and B.F. Hobbs, “An Oligopolistic Power Market Model with Tradable NOx Permits,” IEEE Transactions on Power Systems, 20(1), Feb. 2005, 119-129 (First Place, *INFORMS Energy, Natural Resources, and Environment Section, Student Paper Competition*).
* R.P. O’Neill, P.M. Sotkiewicz, B.F. Hobbs, M.H. Rothkopf, and W.R. Stewart, Jr. “Efficient Market-Clearing Prices in Markets with Nonconvexities,” Euro. J. Operational Research, 164(1), July 1, 2005, 269-285 (*2006 Bright Idea Award*, New Jersey Policy Research Organization and Stillman School of Business at Seton Hall University).
* M.L. Bell, B.F. Hobbs, and H. Ellis, “Metrics matter: Conflicting air quality rankings from different indices of air pollution,” J. Air & Waste Management Association, 55(1), 2005, 97-106.
* B.F. Hobbs and J.S.-Pang, “[Spatial Oligopolistic Equilibria with Arbitrage, Shared Resources, and Price Function Conjectures](http://www.jhu.edu/~dogee/people/faculty/hobbs/hpang2rev3.pdf),” Mathematical Programming Series B, 101(1), Sept. 2004, 57-94.
* M. Boots, F.A.M. Rijkers, and B.F. Hobbs. “A Two-Level Oligopoly Analysis of the European Gas Market”. The Energy Journal, 25(3), July 2004, 73-102.
* B.F. Hobbs and F.A.M. Rijkers, “Modeling Strategic Generator Behavior with Conjectured Transmission Price Responses in a Mixed Transmission Pricing System I: Formulation,” IEEE Trans. Power Systems, 19(2), May 2004, 707-717.
* B.F. Hobbs, F.A.M. Rijkers, and A.F. Wals, “Modeling Strategic Generator Behavior with Conjectured Transmission Price Responses in a Mixed Transmission Pricing System II: Application,” IEEE Trans. Power Systems, 19(2), May 2004, 872-879.
* M.L. Bell, B.F. Hobbs, and H. Ellis, “The Use of Multicriteria Decision-making Methods in Integrated Assessment: Implications for IA Practitioners,” Socioeconomic Planning Sciences, 37(4), 2003, 289-316.
* J.B. Kim, B.F. Hobbs, and J.F. Koonce, “Multicriteria Bayesian Analysis of Lower Trophic Level Uncertainties and Value of Research in Lake Erie,” Human & Ecological Risk Assessment, 9(4), June 2003, 1023-1057.
* S.A. McCusker and B.F. Hobbs, “A Nested Benders Decomposition Approach to Locating Distributed Generation in a Multiarea Power System,” Networks & Spatial Economics, 3(2), June 2003, 197-224.
* C. Metzler, B.F. Hobbs, and J.-S. Pang, “Nash-Cournot Equilibria in Power Markets on a Linearized DC Network with Arbitrage: Formulations and Properties,” Networks & Spatial Economics, 3(2), June 2003, 123-150.
* F. Heath, M. Kyrillidou, D. Webster, S. Choudhury, B. Hobbs, M. Lorie, N. Flores. “Emerging Tools for Evaluating Digital Library Services: Conceptual Adaptations of LibQUAL+™ and CAPM”. Journal of Digital Information, 4(2), 2003 (Web-based journal: http://jodi.ecs.soton.ac.uk/Articles/v04/i02/Heath/).
* R.M. Anderson and B.F. Hobbs, “Using a Bayesian Approach to Quantify Scale Compatibility Bias,” Management Science, 48(12), Dec. 2002, 1555-1568 (*2004 Decision Analysis Publication Award*, Decision Analysis Society of INFORMS).
* R.P. O’Neill, U. Helman, B.F. Hobbs, W.R. Stewart, and M.H. Rothkopf, “A Joint Energy and Transmission Rights Auction: Proposal and Properties,” IEEE Trans. Power Systems, 17(4), Nov. 2002, 1058-1067.
* B.F. Hobbs, S.A. Ludsin, R.L. Knight, P.A. Ryan, J. Biberhofer, and J.J.H. Ciborowski, “Fuzzy Cognitive Mapping as a Tool to Define Management Objectives for Complex Ecosystems,” Ecological Applications, 12(5), Oct. 2002, 1548-1565.
* C.J. Day, B.F. Hobbs, and J.-S. Pang, “Oligopolistic Competition in Power Networks: A Conjectured Supply Function Approach,” IEEE Trans. Power Systems, 17(3), 597-607, Aug. 2002.
* S.A. McCusker, B.F. Hobbs, and Y. Ji, “Distributed Utility Planning Using Probabilistic Production Costing and Generalized Benders Decomposition,” IEEE Trans. Power Systems, 17(2), May 2002, 497-505.
* M.L. Bell, B.F. Hobbs, E.M. Elliot, H. Ellis, and Z. Robinson, “An Evaluation of Multi-Criteria Methods in Integrated Assessment of Climate Policy,” J. Multicriteria Decision Analysis, 10, 2001, 229-256.
* B.F. Hobbs, “Linear Complementarity Models of Nash-Cournot Competition in Bilateral and POOLCO Power Markets,” IEEE Trans. Power Systems, 16(2), May 2001, 194-202.
* C.D. Linville, B.F. Hobbs, and B.N. Venkatesh, “Estimation of Error and Bias in Bayesian Monte Carlo Decision Analysis Using the Bootstrap,” Risk Analysis, 21(1), Feb. 2001, 63-74.
* R.A. Anderson, B.F. Hobbs, J.F. Koonce, and A.B. Locci, “Using Decision Analysis to Choose Phosphorus Targets for Lake Erie,” Environmental Management, 27(2), Feb. 2001, 235-252.
* J.A. Bloczynski, W.T. Bogart, B.F. Hobbs, and J.F. Koonce, “Irreversible Investment in Wetlands Preservation: Making Optimal Decisions Under Climate Uncertainty,” Environmental Management, 26(2), 175-193, Aug. 2000.
* B.F. Hobbs, M.H. Rothkopf, L.C. Hyde, and R.P. O'Neill, “Evaluation of A Truthful Revelation Auction in the Context of Energy Markets with Nonconcave Benefits,” Journal of Regulatory Economics, 18, 5-32, July 2000.
* B.F. Hobbs, C.B. Metzler, and J.-S. Pang, “Strategic Gaming Analysis for Electric Power Networks: An MPEC Approach,” IEEE Trans. Power Systems, 15(2), 638-645, May 2000.
* P.T. Chao, B.F. Hobbs, and B.N. Venkatesh, “How Should Climate Uncertainty be Included in Great Lakes Management? Modeling Workshop Results,” J. American Water Resources Association, 35(6), Dec. 1999, 1485-1494.
* B.F. Hobbs and Y. Ji, “Stochastic Programming-Based Bounding of Expected Production Costs for Multiarea Electric Power Systems,” Operations Research, 47(6), Nov.-Dec. 1999, 836-848.
* B.F. Hobbs, S. Jitprapaikulsarn, S. Konda, V. Chankong, K.A. Loparo, and D. Maratukulam, “Analysis of the Value for Unit Commitment of Improved Load Forecasts,” IEEE Trans. Power Systems, 14(4), Nov. 1999, 1342-1348.
* C.A. Berry, B.F. Hobbs, W.A. Meroney, R.P. O’Neill, and W.R. Stewart, Jr., “Analyzing Strategic Bidding Behavior in Transmission Networks,” Utilities Policy, 8(3), 1999, 139-158.
* B.N. Venkatesh and B.F. Hobbs, “Analyzing Investments for Managing Lake Erie Levels Under Climate Change Uncertainty,” Water Resources Research, 35(5), May 1999, 1671-1684.
* B.F. Hobbs, U. Helman, S. Jitprapaikulsarn, S. Konda, and D. Maratukulam, “Artificial Neural Networks for Short-Term Energy Forecasting: Accuracy and Economic Value”, Neurocomputing, 23(1), Dec. 1998, 71-84.
* Y. Ji and B.F. Hobbs, “Including a DC Network Approximation in a Multiarea Probabilistic Production Costing Model,” IEEE Trans. Power Systems, 13(3), Aug. 1998, 1121-1127.
* B.F. Hobbs, P.T. Chao, and B.N. Venkatesh, “Decision Analysis of Water Resources Decisions Under Climate Change Uncertainty,” Climatic Change, 37, Sept. 1997, 177-202 (reprinted in K.D. Frederick, D.C. Major, and E.Z. Stakhiv, Climate Change and Water Resources Planning Criteria, Kluwer Academic Publishers, Dordrecht, 1997, 177-202, and in K.D. Frederick, Water Resources and Climate Change, Management of Water Resources Series Vol. 2, Edward Elgar Publ., Cheltenham, UK, 2002, Ch. 23).
* G.K. Beim and B.F. Hobbs, “Event Tree Analysis of Lock Closure Risks,” J. Water Resources Planning & Management, 123(3), May 1997, 169-178.
* P.T. Chao and B.F. Hobbs, “Decision Analysis of Shoreline Protection Under Climate Change Uncertainty,” Water Resources Research, 33(4), April 1997, 817-830.
* B.F. Hobbs and G.T.F. Horn, “Building Public Confidence in Energy Planning: A Multimethod MCDM Approach to Demand-Side Planning at BC Gas,” Energy Policy, 25(3), Feb. 1997, 357-375.
* B.F. Hobbs, “Bayesian Methods for Analysing Climate Change and Water Resource Uncertainties,” J. Environmental Management, 49(1), 1997, 53-72.
* M.J. Leppitsch and B.F. Hobbs, “The Effect of NOx Regulations on Emissions Dispatch: A Probabilistic Production Costing Analysis,” IEEE Trans. on Power Systems, 11(4), Nov. 1996, 1711-1716.
* C. Fisher, N. Esteb, E.R. Greene, and B.F. Hobbs, “Public Participation in the IRP Process,” IEEE Trans. on Power Systems, 11(4), Nov. 1996, 1838-1843.
* B.F. Hobbs, Y. Ji, C.-W. Chang, K.A. Loparo, J. Jober, and M. Ohman, “An Improved Bounding Based Method for Multiarea Probabilistic Production Costing,” IEEE Trans. on Power Systems, 11(2), May 1996, 1024-1030.
* B.F. Hobbs, “Models for Integrated Resource Planning by Electric Utilities, Invited Review,” European Journal of Operational Research, 83(1), May 1995, 1-20.
* B.F. Hobbs and Y. Ji, “A Bounding Approach to Multiarea Probabilistic Production Costing,” IEEE Trans. on Power Systems, 10(2), May 1995, 853-859.
* B.F. Hobbs and P. Centolella, “Environmental Policies and Their Effects on Utility Planning and Operations,” Energy, 20(4), April 1995, 255-271.
* B.F. Hobbs and P.M. Meier, “Multicriteria Methods for Resource Planning: An Experimental Comparison,” IEEE Trans. on Power Systems, 9(4), Nov. 1994, 1811-1817.
* C.K. Woo, B.F. Hobbs, R. Orans, R. Pupp, and B. Horii, “Emission Costs, Consumer Bypass, and Efficient Pricing of Electricity,” The Energy Journal, 15(3), 1994, 43-54.
* B.F. Hobbs, “What Do SO2 Emissions Cost?, Allowance Prices and Externality Adders,” J. Energy Engineering, 120(3), Dec. 1994, 122-132.
* B.F. Hobbs, “Emission-Cost Tradeoffs and Rate Feedback for Electric Utilities,” J. Energy Engineering, 120(3), Dec. 1994, 103-121.
* B.F. Hobbs and A.F. Wilson, “Most Value Planning: Estimating the Net Benefits of Electric Utility Resource Plans,” Energy Sources, 16(3), 1994, 451-478.
* B.F. Hobbs, V. Gamponia, and A.F. Wilson, “Optimal Expansion of Energy Efficiency Programs,” Resource and Energy Economics, 16(1), 1994, 1-24.
* W. Huang and B.F. Hobbs, “Optimal SO2 Compliance Planning Using Probabilistic Production Costing and Generalized Benders Decomposition,” IEEE Trans. on Power Systems, 9(1), Feb. 1994, 174-180.
* B.F. Hobbs, J.C. Honious, and J. Bluestein, “Estimating the Flexibility of Utility Resource Plans: An Application to Natural Gas Cofiring for SO2 Control,” IEEE Trans. on Power Systems, 9(1), Feb. 1994, 167-173.
* D.T. Hoog and B.F. Hobbs, “A Nonlinear Integrated Resource Planning Model Including Emissions, Value, and Regional Economic Effects,” Energy, 18, 1993, 1153-1160.
* B.F. Hobbs, H.B. Rouse, and D.T. Hoog, “Measuring the Economic Value of Demand-Side and Supply Resources in Integrated Resource Planning Models,” IEEE Trans. on Power Systems, 8(3), 979-987, Aug. 1993.
* J.E. Al-Alwani, B.F. Hobbs, and B. Malakooti, “An Interactive Integrated Multiobjective Optimization Approach for Quasiconcave/Quasiconvex Utility Functions,” Applied Mathematics and Computation, 54(2/3), March 15 1993, 241-257.
* B.F. Hobbs, “Emissions Dispatch Under the Underutilization Provision of the 1990 U.S. Clean Air Act Amendments: Models and Analysis,” IEEE Trans. on Power Systems, 8(1), Feb. 1993, 177-183.
* B.F. Hobbs, V. Chankong, W. Hamadeh, and E.Z. Stakhiv, “Does Choice of Multicriteria Method Matter? An Experiment in Water Resources Planning,” Water Resources Research, 28(7), July 1992, 1767-1780.
* B.F. Hobbs and S.K. Nelson, “A Nonlinear Bilevel Model for Analysis of Electric Utility Demand-Side Planning Issues,” Annals of Oper. Res., 34, 1992, 255-274.
* S.K. Nelson and B.F. Hobbs, “Screening Demand-Side Management Programs with a Value-Based Test,” IEEE Trans. on Power Systems, 7(3), Aug. 1992, 1031-1043.
* W. Huang and B.F. Hobbs, “Estimation of Marginal System Costs and Emissions of Changes in Generating Unit Characteristics,” IEEE Trans. on Power Systems, 7(3), Aug. 1992, 1251-1258.
* B.F. Hobbs and K.A. Kelly, “Using Game Theory to Analyze Electric Transmission Pricing Policies in the U.S.,” European J. Operational Res., 56(2), Jan. 24, 1992, 154-171.
* H.A. Loaiciga, R.J. Charbeneau, L.G. Everett, G.E. Fogg, B.F. Hobbs, and S. Rouhani, “Review of Ground-Water Quality Monitoring Network Design,” J. of Hydraulic Engineering, 118(1), Jan. 1992, 11-37.
* B.F. Hobbs, “The `Most Value' Criterion: Economic Evaluation of Utility Demand-Side Management Programs Considering Customer Value,” The Energy Journal, 12(2), April 1991, 67-91.
* J.S. Heslin and B.F. Hobbs, “A Probabilistic Production Costing Analysis of SO2 Reduction Strategies for Ohio: Effectiveness, Costs, and Regional Economic Impacts,” J. Air and Waste Management Asso., 41(7), July 1991, 947-955.
* J.S. Heslin and B.F. Hobbs, “Application of a Multiobjective Electric Power Production Costing Model to the US Acid Rain Problem,” Engin. Costs and Production Econ., 20, 241-251, 1990.
* B.F. Hobbs and P. Maheshwari, “A Decision Analysis of the Effect of Uncertainty Upon Electric Utility Planning,” Energy, 15(9), Sept. 1990, 785-802.
* J.S. Heslin and B.F. Hobbs, “Economic Analysis of Oil and Gas Brine Regulations,” J. Energy Engineering, 116(1), April 1990, 51-70.
* L. Duckstein, A. Tecle, M. Nachnebel, and B.F. Hobbs, “Multicriterion Analysis of Hydropower Operation,” J. Energy Engineering, 115(3), 1989, 132-153.
* J.S. Heslin and B.F. Hobbs, “A Multiobjective Production Costing System for Analysis of Effluent Dispatching and Fuel Switching,” IEEE Trans. on Power Systems, 4(3), 836-842, Aug. 1989.
* B.F. Hobbs and A. Hepenstal, “Is Optimization Overly Optimistic?”, Water Resources Research, 25(2), Feb. 1989, 152-161.
* B.F. Hobbs, E.Z. Stakhiv, and W.M. Grayman, “Impact Assessment: Theory, Practice, and Needs,” J. Water Resources Planning and Management, 115(1), Jan. 1989, 2-21.
* B.F. Hobbs, Y. Luo, M. Maciejowski, and C. Chester, “Water Supply Impacts of Nuclear Fall,” Water Resources Bulletin, 25(1), Feb. 1989, 1-14.
* B.F. Hobbs, C.V. Patterson, M.E. Maciejowski, and Y.Y. Haimes, “Risk Analysis of Aquifer Contamination by Brine,” J. Water Resources Planning and Management, 11(6), Nov. 1988, 667-686 (*1990 Outstanding Research Oriented Paper*, American Society of Civil Engineers, Water Resources Planning and Management Division).
* B.F. Hobbs and G.K. Beim, “Analytical Simulation of Water System Reliability, 1. Modified Frequency Duration Analysis,” Water Resources Research, 24(9), 1431-1444, Sept. 1988.
* G.K. Beim and B.F. Hobbs, “Analytical Simulation of Water System Reliability, 2. A Markov Approach and Verification of the Models,” Water Resources Research, 24(9), 1445-1458, Sept. 1988.
* B.F. Hobbs, “Spatial Price Discrimination versus Mill Pricing Under Bertrand and Cournot Spatial Competition,” J. Industrial Econ., 35(2), Dec. 1986, 173-192 (reprinted in M.L. Greenhut and G. Norman, eds., The Economics of Location, Volume II, Space and Value, The International Library of Critical Writings in Economics, Edward Elgar Publishing, Aldershot, UK, 1995, 296-314).
* B.F. Hobbs, “Network Models of Spatial Oligopoly with an Application to Deregulation of Electricity Generation,” Operations Research, 34(3), May/June, 1986, 395-409.
* B.F. Hobbs, “What Can We Learn From Experiments in Multiobjective Analysis?”, IEEE Trans. Systems, Man, and Cybernetics, SMC-16(3), May/June, 1986, 384-394.
* B.F. Hobbs and R.E. Schuler, “Deregulating the Distribution of Electricity: Price and Welfare Consequences of Spatial Oligopoly with Uniform Delivered Prices,” J. Regional Science, 26(2), 1986, 235-265.
* B.F. Hobbs and R.E. Schuler, “Assessment of the Deregulation of Electric Power Generation Using Network Models of Imperfect Spatial Competition,” Papers of the Regional Science Association, 57, 1985, 75-89.
* B.F. Hobbs, “Choosing How to Choose: Comparing Amalgamation Methods for Environmental Impact Assessment,” Environmental Impact Assessment Review, 5(4), Dec., 1985, 301-319.
* B.F. Hobbs, “Water Supply for Power in the Texas-Gulf Region,” J. Water Resources Planning and Management, 110(4), 1984.
* R.E. Schuler and B.F. Hobbs, “Spatial Price Duopoly Under Uniform Delivered Pricing,” J. of Industrial Econ., 31 (1,2), Dec. 1982, 175-188.
* B.F. Hobbs, “A Comparison of Weighting Methods in Power Plant Siting,” Decision Sciences, 11(4), Oct. 1980, 725-737.
* B.F. Hobbs, “Multiobjective Power Plant Siting Methods,” Proc. Am. Soc. of Civil Engineers, J. of the Energy Div., 106(EY2), Oct. 1980, 187-200.
* B.F. Hobbs and P.M. Meier, “An Analysis of Water Resources Constraints on Power Plant Siting in the Mid-Atlantic States,” Water Resources Bulletin, 15(6), 1979, 1666-1676.
* P.M. Meier and B.F. Hobbs, “The Locational Response to Regulatory Policy: A Regional Analysis of Energy Facility Location,” Northeast Regional Science Review, 8(2), 1978, 1-17.

**Book Chapters**

* Y. Chen, W. Lise, J. Sijm, and B.F. Hobbs, Greenhouse Gas Emissions Trading in the Electricity Sector: Model Formulation and Case Studies, in Q.P. Zheng, S. Rebennack, P.M. Pardalos, M.V.F. Pereira, and N.A. Iliadis (eds.), Handbook of CO2 in Power Systems, Springer, 2012, Ch. 3, pp. 33-52
* R.P. O'Neill, U. Helman, B.F. Hobbs, M.H. Rothkopf, and W.R. Stewart, "A Joint Energy and Transmission Rights Auction on a Network with Nonlinear Constraints: Design, Pricing and Revenue Adequacy", in J. Rosellon and T. Kristiansen (eds.), Financial Transmission Rights: Analysis, Experiences and Prospects, Springer-Verlag, Lecture Notes in Energy Series, Ch. 4, pp. 95-127, 2013.
* P.Q. Zheng, B.F. Hobbs, and J.F. Koonce, The Economics and Ecosystem Restoration of Dam Decommissioning: Making Informed Decisions to Remove Aging U.S. Dams, Aquanomics: Water Markets and the Environment, D.B. Gardner, and R. Simmons (eds.). The Independent Institute, Oakland, California, Ch. 10, 249-281, 2012.
* M. Awad, K.E. Casey, A.S. Geevarghese, J.C. Miller, A.F. Rahimi, A.Y. Sheffrin, M. Zhang, E. Toolson, G. Drayton, B.F. Hobbs, and F.A. Wolak, "Economic Assessment of Transmission Upgrades: Application of the California ISO Approach", Ch. 7, in X.-P. Zhang (ed.), Restructured Electric Power Systems: Analysis of Electricity Markets with Equilibrium Models, Power Engineering Series, J. Wiley & Sons/IEEE Press, July 2010, 241-270.
* J. Yao, S.S. Oren, and B.F. Hobbs, “Hybrid Bertrand-Cournot Models of Electricity Markets with Multiple Strategic Subnetworks and Common Knowledge Constraints,” Ch. 5, in X.-P. Zhang (ed.), Restructured Electric Power Systems: Analysis of Electricity Markets with Equilibrium Models, Power Engineering Series, J. Wiley & Sons/IEEE Press, 2010, 167-192.
* R. Mookherjee, B.F. Hobbs, T.L. Friesz, and M.A. Ridgon, "Dynamic Oligopolistic Competition in an Electric Power Network and Impacts of Infrastructure Disruptions," J. Momoh and L. Mili, eds., Economic Market Design and Planning for Electric Power Systems, IEEE Press Series on Power Engineering, John Wiley & Sons/IEEE Press, 2009, Ch. 5, pp. 87-112.
* R.P. O'Neill, U. Helman, and B.F. Hobbs, " The Design of U.S. Wholesale Energy and Ancillary Service Auction markets: Theory and Practice," Ch. 5, in F.P. Sioshansi, Competitive Electricity Markets: Design, Implementation, Performance, Global Energy Policy and Economics Series, Elsevier, 2008.
* R.P. O’Neill, U. Helman, B.F. Hobbs, and R. Baldick, “Independent system operators in the United States: History, lessons learned, and prospects,” Ch. 14, in F. Sioshansi and W. Pfaffenberger, Electricity Market Reform: An International Perspective, Global Energy Policy and Economics Series, Elsevier, 2006, pp. 479-528.
* B.F. Hobbs and U. Helman, “Complementarity-Based Equilibrium Modeling for Electric Power Markets,” in D.W. Bunn (ed.), Modeling Prices in Competitive Electricity Markets, J. Wiley Series in Financial Economics, London, Ch. 3, 2004.
* R.M. Anderson, B.F. Hobbs, and M.L. Bell, “Multiobjective Decision Making in Negotiation and Conflict Resolution,” The Encyclopedia of Life Support Systems, Topic 1:40.4, UNESCO (www.eolss.net/eolss\_category.aspx).
* J.-S. Pang, B.F. Hobbs, and C.J. Day, “Properties of Oligopolistic Market Equilibria in Linearized DC Electricity Power Markets with Arbitrage and Supply Function Conjectures,” in E.W. Sachs and R. Tichatschke, System Modeling and Optimization XX, Kluwer Academic Publishers, Boston, 2003, 143-168.

- B.F. Hobbs, W.R. Stewart, Jr., R.E. Bixby, M.H. Rothkopf, R.P. O'Neill, and H.-P. Chao, “Why This Book? New Capabilities and New Needs for Unit Commitment Modeling,” in B.F. Hobbs, M.H. Rothkopf, R.P. O'Neill, and H.-p. Chao, eds., The Next Generation of Unit Commitment Models, International Series in Operations Research & Management Science, Kluwer Academic Publishers, Boston/Dordrecht/London, 2001.

* J.L. Aron, J.H. Ellis, and B.F. Hobbs, “Integrated Assessment,” in J.L. Aron and J.A. Patz, eds., Ecosystem Change and Public Health: A Global Perspective, The Johns Hopkins University Press, Baltimore, MD, Chapter 5, 2001.
* M.L. Bell, B.F. Hobbs, E.M. Elliott, H. Ellis, and Z. Robinson, “An Evaluation of Multicriteria Decision-Making Methods in Integrated Assessment of Climate Policy,” in Y.Y. Haimes and R. Steuer (eds.), Research and Practice in Multiple Criteria Decision Making, Lecture Notes in Mathematics and Economic Systems, Vol. 487, Springer-Verlag, Berlin, 2000, 228-237.
* C.A. Berry, B.F. Hobbs, W.A. Meroney, R.P. O’Neill, and W.R. Stewart, Jr., “Analyzing Strategic Bidding Behavior in Transmission Networks,” Ch. 3 in H. Singh (ed.), Game Theory Applications in Electric Power Markets, Tutorial Publication TP-136-0, IEEE, Piscataway, NJ, 1999, pp. 7-32.
* B.F. Hobbs, “Environmental Planning for Electric Utilities,” Ch. 11, in C. ReVelle and A.E. McGarity, Design and Operation of Civil and Environmental Engineering Systems, J. Wiley, NY, 1997.
* B.F. Hobbs, W. Mittelstadt, and J. Lund, “Water for Energy”, Chapter 31 in L. Mays, ed., Handbook of Hydrology, McGraw-Hill, 1996.
* B.F. Hobbs, “Bottom-up: Company, State, and Regional Models,” in C.J. Andrews, ed., Electricity and Federalism, Quorum Press, Westport, CT, 1995, reprinted by IEEE Press, New York, 1995.
* R.E. Schuler and B.F. Hobbs, “Price Adjustments in Oligopolistic Markets: The Impact of Lags in Customer Response,” (with B. Hobbs), in Gee, J.A. and Norman, G., eds., Market Strategy and Structure, Harvester-Wheatsheaf, 1992
* B.F. Hobbs and J.S. Heslin, “Conserving Energy to Reduce SO2 Emissions in Ohio: An Evaluation Using a Multiobjective Electric Power Production Costing Model,” in E. Vine, D. Crawley, and P. Centolella, Energy Efficiency and the Environment: Forging the Link, American Council for an Energy Efficient Economy, Washington, DC, 1991, 289-304.
* B.F. Hobbs, “Continuous Versus Network Models of Spatial Oligopoly” in K.D. Lawrence, J.B. Geurard, Jr., and G.R. Reeves, eds., Advances in Mathematical Programming in Financial Planning, Vol. 2, JAI Press, Greenwich, CT, 1990, 183-213.
* B.F. Hobbs, “An Overview of Integrated Water Supply System Availability Analysis,” Ch. 10 of L. Mays, ed., Reliability Analysis of Water Distribution Systems, American Society of Civil Engineers, New York, 1989.
* B.F. Hobbs and G. Beim, “Methods for Evaluating Integrated Water Supply System Availability,” Ch. 11 of L. Mays, ed., Reliability Analysis of Distribution Systems, American Society of Civil Engineers, New York, 1989.
* B.F. Hobbs, G.K. Beim, and A.S. Gleit, “Reliability Analysis of Power and Water Supply Systems,” in B. Lev, J. Bloom, A. Gleit, F. Murphy, and C. Shoemaker, eds., Strategic Planning in Energy and Natural Resources, Studies in Management Science and Systems 15, North-Holland, Amsterdam, 1987.
* B.F. Hobbs, “Modeling Imperfect Spatial Energy Markets,” in F. Calzonetti and B. Solomon, eds., Geographical Dimensions of Energy Research, D. Reidel, Amsterdam, 1985, 179-200.
* B.F. Hobbs, M.D. Rowe, B.L. Pierce, and P.M. Meier, “Comparisons of Methods for Evaluating Multiattributed Alternatives: Results of the BNL-NRC Siting Methods Project,” Improving Impact Assessment: Increasing the Relevance and Utility of Technical and Scientific Information, S. Hart, G. Enk, and W.F. Hornick, eds., Westview Press, Boulder, CO, 1984, 227-252.
* B.F. Hobbs, “Regional Energy Facility Location Models for Power System Planning and Policy Analysis,” in Analytic Techniques for Energy Planning, B. Lev, F. Murphy, J. Bloom, and A. Gleit, eds., North-Holland Press, Amsterdam, 1984, 53-66.
* B.F. Hobbs, “Cooling Water Supply for Energy Production,” in P. Cheremisinoff et al. ed., Civil Engineering Practice, Vol. 4, Technomic Publ. Co., Lancaster, PA, 1988.
* B.F. Hobbs and R.E. Schuler, "Evaluation of Electric Power Deregulation Using Network Models of Oligopolistic Spatial Markets", in P. Harker, ed., Spatial Price Equilibrium: Advances in Theory, Computation and Application, Vol. 249 of Lecture Notes in Economics and Mathematical Systems, Springer, 1985, 208-254.

**Magazine Articles**

* B.F. Hobbs, Q. Xu, J. Ho, P. Donohoo, S. Kasina, J. Ouyang, S.W. Park, J. Eto, and V. Satyal, Adaptive Transmission Planning: Implementing a New Paradigm for Managing Economic Risks in Grid Expansion, IEEE Power & Energy Magazine, 14(4), July-August 2016, 30-40.
* M. Ahlstrom, E. Ela, J. Riesz, J. O’Sullivan, B.F. Hobbs, M. O’Malley, M. Milligan, P. Sotkiewicz, and J. Caldwell, "The Evolution of the Market," IEEE Power & Energy Magazine, Nov./Dec. 2015, 60-66. DOI: 10.1109/MPE.2015.2458755
* F. Munoz, J.-P. Watson, and B.F. Hobbs, "Optimizing Your Options: Extracting the Full Economic Value of Transmission When Planning Under Uncertainty", The Electricity Journal, 28(5), pp. 26-38, June 2015.
* J. Bushnell, B.F. Hobbs, and F, Wolak, When It Comes to Demand Response, Is the Federal Energy Regulatory Commission its Own Worst Enemy? The Electricity Journal, 22(8), pp. 9-18, October 2009.
* B.F. Hobbs, "Independent System Operator is Not Always a Solution," Energie Nederland (Special Edition on the Northwest European Energy Market), Nov. 21 2006, 7.
* A.Y. Sheffrin, J. Chen, and B.F. Hobbs, “Watching Watts to Prevent Abuse of Power,” IEEE Power & Energy Magazine, 2(4), July/Aug. 2004, 58-65.
* B.F. Hobbs, J. Inon, and S. Stoft, “Installed Capacity Requirements and Price Caps: Oil on the Water, or Fuel on the Fire?”, Electricity Journal, 14(6), August/Sept. 2001, 23-34.
* B.F. Hobbs, “Energy vs. the Environment: Exploring the Tradeoffs with OR/MS”, OR/MS Today, 12(6), Dec. 1996, 30-33.
* S. Choudhury, B. Hobbs, M. Lorie, and N. Flores, “A Framework for Evaluating Digital Library Services,” D-Lib Magazine, 8(7/8), July/August 2002, www.dlib.org/dlib/july02/choudhury/07choudhury.html

- P.A. Centolella and B.F. Hobbs, “Viewpoint: Safeguarding the Environment Amid a Competitive Power Market,” IEEE Spectrum, 32(1), Jan. 1995, 58-59.

- B.F. Hobbs, “Environmental Adders and Emissions Trading: Oil and Water?”, The Electricity Journal, 5(7), Sept. 1992, 26-34.

- B.F. Hobbs, J.C. Honious, and J. Bluestein, “What's Flexibility Worth? The Enticing Case of Natural Gas Cofiring,” Electricity Journal, 5(2), March 1992, 37-47.

- B.F. Hobbs and J.S. Heslin, “The Economic Impact of Neutralizing Acid Rain,” REI Review, Fall 1990, 3-9.

- B.F. Hobbs, “The Generalized `Most-Value' Criterion: `Least-Cost' is Still Not `Most-Value',” Electricity Journal, 2(10), Dec. 1989, 52-55.

- B.F. Hobbs and S.K. Nelson, “Assessing Conservation Payments: Least-Cost, Least-Rates, or Most-Value?”, Electricity Journal, 2(6), 28-39, July 1989.

- N. Rau, B.F. Hobbs, and P. Maheshwari, “Decision Analysis of the Effect of Uncertainty Upon Electric Utility Planning,” NRRI Quarterly Bulletin, 10(4), 377-384, Sept. 1989.

- B.F. Hobbs, “Reliability Analysis of Urban Water Supply,” National Development, 28(3), April 1987, 38-42.

* B.F. Hobbs and E.Z. Stakhiv, “Quantifying Social and Environmental Objectives,” Civil Engineering, April, 1986, 43-45.

## Written Testimony, Amicus Curiae Briefs, and Selected Formal Reports

* Comment by Electricity Grid Experts Benjamin F. Hobbs, Brendan Kirby, Kenneth J. Lutz, James D. McCalley, and Brian Parsons on Docket ID No. EPA–HQ–OAR–2017–0355, Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Submitted by USEPA, April 25, 2018
* N. Mukhi, D. Chattopadhyay, B. Hobbs, E. Spyrou, *Building Climate Resilience into Power System Planning: The Case of Bangladesh*, Report ACS23320, World Bank, Washington, DC, Dec. 2017, <http://documents.worldbank.org/curated/en/296731513710765160/Building-climate-resilience-into-power-system-planning-the-case-of-Bangladesh>
* "Brief of Amici Curiae Grid Experts Benjamin F. Hobbs, Brendan Kirby, Kenneth J. Lutz, James D. McCalley, and Brian Parsons in Support of Respondents", *In re: State of West Virginia et al. (Petitioners) vs U.S.E.P.A. et al. (Respondents)*, U.S. Court of Appeals for the District of Columbia, April 1, 2016
* J.L. Ho, B.F. Hobbs, P. Donohoo-Vallett, Q. Xu, S. Kasina, S.W. Park, and Y. Ouyang, *Planning Transmission for Uncertainty: Applications and Lessons for the Western Interconnection*, Final Report, Johns Hopkins University, Prepared for the Western Electricity Coordinating Council, Jan. 2016, [www.wecc.biz/Reliability/Planning-for-Uncertainty-Final-Report.pdf](http://www.wecc.biz/Reliability/Planning-for-Uncertainty-Final-Report.pdf)
* Brief of Robert L. Borlick et al. as Amici Curiae, *In re: Federal Energy Regulatory Commission v. Electric Power Supply Association et al.*, US Supreme Court, Sept. 2015
* R. Johnson, A. Baechert, S. Koppolu, E. Spyrou, J. Ho, B.F. Hobbs, J. McCalley, A. Figueroa, and S. Lemos‐Cano, *Co‐optimization of Transmission and Other Resources Study*, Final Report, Prepared by Energy Exemplar, LLC, The Johns Hopkins University, and Iowa State University, Submitted to the Eastern Interconnection States Planning Council and National Association of Regulatory Utility Commissioners, Washington, DC, January 26, 2015, <http://pubs.naruc.org/pub/536E6296-2354-D714-51E2-0762AD9121F7>
* “Affidavit of Benjamin F. Hobbs on Behalf of PJM Interconnection, L.L.C. (Reliability Pricing Model Demand Curve for Annual Capacity)” submitted to the Federal Energy Regulatory Commission, Nov. 29, 2013, Docket No. ER14-504.
* A. Liu, B.F. Hobbs, J. Ho, J. McCalley, V. Krishnan, M. Shahidehpour, and Q. Zheng, *Co-optimization of Transmission and Other Supply Resources*, Prepared for the Eastern Interconnection States’ Planning Council, National Association of Regulatory Utility Commissioners, Washington, DC, 20 Dec. 2013, <http://pubs.naruc.org/pub/536D834A-2354-D714-51D6-AE55F431E2AA>
* R. Baldick, J. Bushnell, B.F. Hobbs, and F.A. Wolak, “Optimal Charging Arrangements for Energy Transmission: Final Report,” Prepared for and Commissioned by Project TransmiT, Great Britain Office of Gas & Electricity Markets, London, May 2011.
* “Supplemental Affidavit of Benjamin F. Hobbs on Behalf of PJM Interconnection, L.L.C., Reliability Pricing Model” submitted to the Federal Energy Regulatory Commission, Sept. 29, 2006, Docket Nos. ER05-1410 and EL05-148.
* “Supplemental Affidavit of Benjamin F. Hobbs on Behalf of PJM Interconnection, L.L.C., Reliability Pricing Model” submitted to the Federal Energy Regulatory Commission, May 30, 2006, Docket Nos. ER05-1410 and EL05-148.
* “Affidavit of Benjamin F. Hobbs on Behalf of PJM Interconnection, L.L.C., Reliability Pricing Model” submitted to the Federal Energy Regulatory Commission, Aug. 31, 2005, Docket Nos. ER05-1410 and EL05-148.

- B.F. Hobbs, W. Huang, and S.K. Nelson, “A Production Costing Analysis of Underutilization Accounting Policies,” presented to the U.S. Environmental Protection Agency Acid Rain Advisory Committee, April 29 - May 1, 1991.

- B.F. Hobbs, “Testimony on Acid Rain Special Topic Information”, In the Matter of the 1990 Long-Term Forecast Reports of Ohio Power Company and Columbus Southern Power Company, Before the Public Utilities Commission of Ohio, Cases No. 90-659-EL-FOR and 90-660-EL-FOR, Sept. 28, 1990.