Electrical and Computer Engineering (ECpE) Work by L. Tesfatsion

Latest Project Site, Wiley/IEEE Press Book, IEEE Journal Pubs, Non-IEEE Journal Pubs, FERC/National Lab Reports, Conference Papers/Talks, OSS Test-System Platform Releases
https://www2.econ.iastate.edu/ECpEWork.LTesfatsion.pdf

Dr. Leigh Tesfatsion, IEEE Senior Member
Courtesy Research Professor of Electrical & Computer Engineering
Professor Emerita of Economics
Heady Hall 260, Iowa State University, Ames, IA 50011-1054
https://www2.econ.iastate.edu/tesfatsi/
tesfatsi@iastate.edu

Latest Revision: 19 February 2024

==
ITD PROJECT SITE:

Integrated Transmission and Distribution (ITD) Project: ISU Homepage
https://www2.econ.iastate.edu/tesfatsi/ITDProjectHome.htm

==
WILEY/IEEE PRESS BOOK:

Leigh Tesfatsion (2021). *A New Swing-Contract Design for Wholesale Power Markets*, 20 Chapters, 288pp., John Wiley & Sons (IEEE Press Series on Power Engineering), Hoboken, NJ, USA.
https://www2.econ.iastate.edu/tesfatsi/SCBookSlideSetOverview.pdf

==
IEEE JOURNAL PUBLICATIONS:

Leigh Tesfatsion (2024), **"Locational Marginal Pricing: A Fundamental Reconsideration,"** *IEEE Open-Access Journal of Power and Energy*, to appear. DOI: 10.1109/OAJPE.2024.3361751

Rui Cheng, Leigh Tesfatsion (2023), and Zhaoyu Wang, **"A Consensus-Based Transactive Energy Design for Unbalanced Distribution Networks,"** *IEEE Trans. on Power Systems*, Volume 38, Issue 1, 114-128.

Swathi Battula, Leigh Tesfatsion, and Zhaoyu Wang (2020), **"A Customer-Centric Approach to Bid-Based Transactive Energy System Design,"** *IEEE Transactions on Smart Grid*, Volume 11, Issue 6, 4996-5008. DOI: 10.1109/TSG.2020.3008611

Shanshan Ma, Zhaoyu Wang, and Leigh Tesfatsion (2019), **"Swing Contracts with Dynamic Reserves for Flexible Service Management,"** *IEEE Transactions on Power Systems*, Vol. 34, Issue 5, 4024-4037.

Auswin George Thomas and Leigh Tesfatsion (2018), **"Braided Cobwebs: Cautionary Tales for Dynamic Pricing in Retail Electric Power Markets,"** *IEEE Trans. on Power Systems*, Vol 33, Issue 6, 6870-6882.

Dheepak Krishnamurthy, Wanning Li, and Leigh Tesfatsion (2016), "**An 8-Zone Test System based on ISO New England Data: Development and Application,"** *IEEE Transactions. on Power Systems*, Volume 31, Issue 1, January, 234-246.

Qun Zhou, Leigh Tesfatsion, Chen-Ching Liu, Ron F. Chu, and Wei Sun (2013), **"A Nash Approach to Planning Merchant Transmission for Renewable Resource Integration,"** *IEEE Transactions on Power Systems*, Vol. 8, No. 3, August, 2086-2100.

Auswin George Thomas, Pedram Jahangiri, Di Wu, Chengri Cai, Huan Zhao, Dionysios C. Aliprantis, Leigh Tesfatsion (2012), **"Intelligent Residential Air Conditioning System with Smart Grid Functionality,"** *IEEE Transactions on Smart Grid*, Vol. 3, No. 4, December 2012, 2240-2251.

Nanpeng Yu, Leigh Tesfatsion, and Chen-Ching Liu (2012), **"Financial Bilateral Contract Negotiation in Wholesale Electric Power Markets using Nash Bargaining Theory,"** *IEEE Transactions on Power Systems*, Vol. 27, Issue No. 1, 251-267.

Qun Zhou, Leigh Tesfatsion, and Chen-Ching Liu (2011), "**Short-Term Congestion Forecasting in Wholesale Power Markets,"** *IEEE Transactions on Power Systems*, Vol. 26, Issue 4, 2185-2196.

Hongyan Li and Leigh Tesfatsion (2011**), "ISO Net Surplus Collection and Allocation in Wholesale Power Markets under Locational Marginal Pricing,"** *IEEE Trans. on Power Systems*, Vol. 26, Issue 2, 627-641.

Abhishek Somani and Leigh Tesfatsion (2008), **"An Agent-Based Test Bed Study of Wholesale Power Market Performance Measures,"** *IEEE Computational Intelligence Magazine*, Vol. 3, No. 4, Nov, 56-72.

Leigh Tesfatsion (2001), **"Agent-Based Modeling of Evolutionary Economic Systems**," *IEEE Transactions on Evolutionary Computation*, Vol. 5, No. 5, October, 437-441.

James Nicolaisen, Valentin Petrov, and Leigh Tesfatsion (2001**), "Market Power and Efficiency in a Computational Electricity Market with Discriminatory Double-Auction Pricing,"** *IEEE Transactions on Evolutionary Computation*, Vol. 5, No. 5, October, 504-523.

David McFadzean, Deron Stewart, and Leigh Tesfatsion (2001), "**A Computational Laboratory for Evolutionary Trade Networks,"** *IEEE Trans. on Evolutionary Computation*, Vol. 5, No. 5, Oct., 546-560.

Robert E. Kalaba and Leigh Tesfatsion (1990), **"Flexible Least Squares for Approximately Linear Systems,"** *IEEE Transactions on Systems, Man, and Cybernetics*, Vol. 20, No. 5, 978-989.

Robert E. Kalaba and Leigh Tesfatsion (1981), **"An Exact Sequential Solution Procedure for a Class of Discrete-Time Nonlinear Estimation Problems,***" IEEE Trans. on Automatic Control.*, AC-26, 1144-1149.

Leigh Tesfatsion (1979), **"Direct Updating of Intertemporal Criterion Functions for a Class of Adaptive Control Problems,"** *IEEE Transactions on Systems, Man, and Cybernetics*, SMC-9, 143-151.

==

OTHER ECpE PUBLICATIONS:

Swathi Battula, Leigh Tesfatsion, and Thomas E. McDermott (2020), "**An ERCOT Test System for Market Design Studies,"** *Applied Energy*, Volume 275, October, 115182. DOI: 10.1016/j.apenergy.2020.115182

Hieu T. Nguyen, Swathi Battula, R.R. Takkala, Zhaoyu Wang, and Leigh Tesfatsion (2019), **"An Integrated Transmission and Distribution and Test System for Evaluation of Transactive Energy Designs,"** *Applied Energy*, Volume 240, 666-679.

Wanning Li and Leigh Tesfatsion (2018), **"A Swing-Contract Market Design for Flexible Service Provision in Electric Power Systems."** Chapter 5 (pp. 105-127) In: Sean Meyn, Tariq Samad, Sonja Glavaski, Ian Hiskens, and Jakob Stoustrup, Eds., *Energy Markets and Responsive Grids: Modelling, Control, and Optimization*, The IMA Volumes in Mathematics and its Applications Series, Springer.

Leigh Tesfatsion (2018), "**Electric Power Markets in Transition: Agent-Based Modeling Tools for Transactive Energy Support."** Chapter 13 (pp. 715-766) in Hommes, C., LeBaron, B., Eds., *Handbook of Computational Economics 4: Heterogeneous Agent Models.* Handbooks in Economics Series. North Holland (Elsevier), Amsterdam, the Netherlands.

Wanning Li and Leigh Tesfatsion (2016**), "Market Provision of Flexible Energy/Reserve Contracts: Optimization Formulation,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Boston, MA, July 17-21 (electronic).

Deung-Yong Heo and Leigh Tesfatsion (2015), **"Facilitating Appropriate Compensation of Electric Energy and Reserve through Standardized Contracts with Swing,''** *Journal of Energy Markets* 8(4), 93-121.

Wanning Li, Dheepak Krishnamurthy, and Leigh Tesfatsion (2015), "**Systematic Testing and Comparison of Deterministic and Stochastic Unit Commitment on an 8-Zone Test Case Based on ISO New England Data,''** *Innovative Smart Grid Technologies Conference Proceedings* (electronic).

Hongyan Li and Leigh Tesfatsion (2012), **"Co-Learning Patterns as Emergent Market Phenomena: An Electricity Market Illustration,"** *J. of Economic Behavior and Organization*, Vol. 82, Issue 2-3, 395-419.

Pedram Jahangiri, Di Wu, Wanning Li, Dionysios C. Aliprantis, and Leigh Tesfatsion (2012), **"`Development of an Agent-Based Distribution Test Feeder with Smart-Grid Functionality,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, San Diego, CA, July 22-26 (electronic).

Auswin George Thomas, Chengrui Cai, Dionysios C. Aliprantis, and Leigh Tesfatsion (2012), **"Effects of Price-Responsive Residential Demand on Retail and Wholesale Power Market Operations,"'** *Proc. of the IEEE Power and Energy Society General Meeting*, San Diego, CA, July 22-26 (electronic).

Hongyan Li, Junjie Sun, and Leigh Tesfatsion (2011), "**Testing Institutional Arrangements via Agent-Based Modeling: A U.S. Electricity Market Example,**" pp. 135-158 in Herbert Dawid and Willi Semmler , Eds., *Computational Methods in Economic Dynamics*, Dynamic Modeling and Econometrics in Economics and Finance 13, Springer-Verlag Berlin Heidelberg.

Chengrui Cai, Pedram Jahangiri, Auswin George Thomas, Huan Zhao, Dionysios C. Aliprantis, and Leigh Tesfatsion (2011), **"Agent-Based Simulation of Distribution Systems with High Penetration of Photovoltaic Generation,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Detroit, MI, July 24-29 (electronic).

Huan Zhao, Auswin George Thomas, Pedram Jahangiri, Chengrui Cai, Leigh Tesfatsion, and Dionysios C. Aliprantis (2011), **"Two-Settlement Electric Power Markets with Dynamic-Price Customers,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Detroit, MI, July 24-29 (electronic).

Nanpeng Yu, Abhishek Somani, and Leigh Tesfatsion (2010), "**Financial Risk Management in Restructured Wholesale Power Markets: Concepts and Tools,"** *Proceedings of the IEEE Power and Energy Society General Meeting,* Minneapolis, MN, July 25-29 (electronic).

Dionysios Aliprantis, Scott Penick, Leigh Tesfatsion, and Huan Zhao (2010), **"Integrated Retail and Wholesale Power System Operation with Smart-Grid Functionality,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Minneapolis, MN, July 25-29 (electronic).

Hongyan Li and Leigh Tesfatsion (2009), **"Development of Open Source Software for Power Market Research: The AMES Test Bed,"** *Journal of Energy Markets*, Vol. 2, No. 2, Summer, 111--128.

Haifeng Liu, Leigh Tesfatsion, and Ali A. Chowdhury (2009), **"Derivation of Locational Marginal Prices for Restructured Wholesale Power Markets,"** *Journal of Energy Markets*, Vol. 2, No. 1, Spring, 3--27.

Qun Zhou, Leigh Tesfatsion, and Chen-Ching Liu (2009)**, "Scenario Generation for Price Forecasting in Restructured Wholesale Power Markets,"** *Proceedings of the 2009 Power Systems Conference & Exposition*, Seattle, WA, March (electronic).

Hongyan Li and Leigh Tesfatsion (2009), **"Capacity Withholding in Restructured Wholesale Power Markets: An Agent-Based Test Bed Study,"** *Proceedings of the Power Systems Conference & Exposition*, Seattle, WA, March (electronic).

Leigh Tesfatsion (2009), "**Auction Basics for Wholesale Power Markets: Objectives and Pricing Rules,"** *Proc. of the IEEE Power and Energy Society General Meeting*, Calgary, Alberta, CA, July 26-30 (electronic)

Hongyan Li and Leigh Tesfatsion (2009), "**The AMES Wholesale Power Market Test Bed: A Computational Laboratory for Research, Teaching, and Training,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Calgary, Alberta, CA, July 26-30 (electronic)

Haifeng Liu, Leigh Tesfatsion, and A.A. Chowdhury (2009), **"Locational Marginal Pricing Basics for Restructured Wholesale Power Markets,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Calgary, Alberta, CA, July 26-30 (electronic).

Hongyan Li, Junjie Sun, and Leigh Tesfatsion (2008), **"Dynamic LMP Response Under Alternative Price-Cap and Price-Sensitive Demand Scenarios,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Pittsburgh, PA, July 20-24 (electronic).

Nanpeng Yu, Chen-Ching Liu, and Leigh Tesfatsion (2007), **"Modeling of Suppliers' Learning Behaviors in an Electricity Market Environment,"** *International J. of Engineering Intelligent Systems 15(2),* 115-121.

Junjie Sun and Leigh Tesfatsion (2007)**, "Dynamic Testing of Wholesale Power Market Designs: An Open-Source Agent-Based Framework,"** *Computational Economics*, Vol. 30, No. 3, 291-327.

Junjie Sun and Leigh Tesfatsion (2007), **"An Agent-Based Computational Laboratory for Wholesale Power Market Design,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Tampa, Florida, June 24-28 (electronic).

Junjie Sun and Leigh Tesfatsion (2007), **"Open-Source Software for Power Industry Research, Teaching, and Training: A DC-OPF Illustration,"** *Proceedings of the IEEE Power and Energy Society General Meeting,* Tampa, Florida, June 24-28 (electronic).

Steven Widergren, Junjie Sun, and Leigh Tesfatsion (2006), "**Market Design Test Environments,"** *Proceedings of the IEEE Power and Energy Society General Meeting*, Montreal, June 18-22.

Deddy Koesrindartoto, Junjie Sun, and Leigh Tesfatsion (2005), "**An Agent-Based Computational Laboratory for Testing the Economic Reliability of Wholesale Power Market Designs,"** *Proceedings of the IEEE Power and Energy Society General Meeting,* San Francisco, CA, June 12-16.

Deddy Koesrindartoto and Leigh Tesfatsion (2004), **"Testing the Reliability of FERC's Wholesale Power Market Platform: An Agent-Based Computational Economics Approach,"** in Energy, Environment, and Economics in a New Era, *Proceedings of the 24th North American Conference of the United States Association for Energy Economics (USAEE) and the International Association for Energy Economics (IAEE),* Washington, D.C., July 8-10.

Leigh Tesfatsion (2000), **"Concentration, Capacity, and Market Power in an Evolutionary Labor Market,''** pp. 1033-1040 in Ali Alzala (ed.), Evolution at Work for the New Millennium, *Proceedings of the 2000 IEEE Congress on Evolutionary Computation*, Volume II, IEEE, Inc., N.J.

James Nicolaisen, Valentin Petrov, Matthew Smith, and Leigh Tesfatsion (2000), **"Concentration and Capacity Effects on Electricity Market Power,"** pp. 1041-1047 in Ali Alzala (ed.), Evolution at Work for the New Millennium, *Proc. 2000 IEEE Congress on Evolutionary Computation*, Vol. II, IEEE, Piscataway, N.J.

===

FERC/NATIONAL LAB REPORTS ON ECpE TOPICS:

Leigh Tesfatsion (2023), **"Economics of Grid-Supported Electric Power Markets: A Fundamental Reconsideration,"** *E-Filed Comments (Plus Supporting Document),* U.S. Federal Energy Regulatory Commission (FERC), Docket AD21-10-000, Accession No. 20230117-5051, January. https://www2.econ.iastate.edu/tesfatsi/LeighTesfatsion.EFiledComments.FERC.AD21-10-000.pdf

Leigh S. Tesfatsion, Cesar A. Silva-Monroy, Vernon W. Loose, James F. Ellison, Ryan T. Elliott, Raymond H. Byrne, Ross T. Guttromson (2013), **"New Wholesale Power Market Design Using Linked Forward Markets,''** *Sandia Report SAND2013-2789*, Unlimited Release, Sandia National Laboratories, April.

James F. Ellison, Leigh S. Tesfatsion, Vernon W. Loose, and Raymond H. Byrne (2012), **"Project Report: A Survey of Operating Reserve Markets in U.S. ISO/RTO-Managed Electric Energy Regions,"** *Sandia Report SAND2012-1000*, Unlimited Release, Sandia National Laboratories, Printed September.

Deddy Koesrindartoto and Leigh Tesfatsion (2004), **"Testing the Reliability of FERC's Wholesale Power Market Platform,"** Project Report, Los Alamos National Laboratory C-8313, September 27.

===

WORKING PAPERS ON ECpE TOPICS:

Leigh Tesfatsion (2023), **"Locational Marginal Pricing: When and Why Not?",** Econ Working Paper No. 23003, ISU Digital Repository, Iowa State University, Ames, Iowa (revised version to appear in *IEEE OAJPE*). https://www2.econ.iastate.edu/tesfatsi/LMPWhenAndWhyNot.LTesfatsion.pdf

Leigh Tesfatsion (2023), **"Economics of Grid-Supported Electric Power Markets: A Fundamental Reconsideration,"** Economics Working Paper No. 22005, ISU Digital Repository, Ames, Iowa. https://www2.econ.iastate.edu/tesfatsi/EconomicsGridSupportedPowerMarkets.ISUDR22005.LTesfatsion.pdf

Leigh Tesfatsion and Swathi Battula (2020), **"Analytical SCUC/SCED Optimization Formulation for AMES V5.0,"** Economics Working Paper No. 20014, ISU Digital Repository, Ames, IA. *(AMES V5.0 Code Doc)*

Leigh Tesfatsion and Swathi Battula (2019) **"Notes on the GridLAB-D Household Equivalent Thermal Parameter Model,"** Economics Working Paper No. 19001, ISU Digital Repository, Ames, IA. *(ITD TES Platform V2 Code Documentation)*

Wanning Li and Leigh Tesfatsion (2017), **"An 8-Zone ISO-NE Test System with Physically-Based Wind Power,''** Economics Working Paper No. 17-2017, ISU Digital Repository, Ames, IA.

Leigh Tesfatsion and Dionysios C. Aliprantis (2013), "**Reformulation of U.S. Day-Ahead Wholesale Power Markets for Improved Intertemporal Operations,''** *ISU Economics Working Paper* No. 12-2012, Department of Economics, Iowa State University, April.

Hongyan Li, Junjie Sun, and Leigh Tesfatsion (2009), **"Separation and Volatility of Locational Marginal Prices in Restructured Wholesale Power Markets,"** *ISU Econ. WP #*9-2009, Dept. of Econ., ISU, June.

Junjie Sun and Leigh Tesfatsion (2006), **"DC Optimal Power Flow Formulation and Solution Using QuadProgJ,"** *ISU Econ WP #*No. 6-2014, Department of Economics, Iowa State University, March.

===
PRESENTATIONS ON ECpE TOPICS:

Leigh Tesfatsion (2023), **"Economics of Grid-Supported Electric Power Markets: A Fundamental Reconsideration" (HandOut,pdf), (SlideSetShort,pdf,985KB), (YouTube,Day 2,7:34:00)**, Virtual (Zoom) presentation, *FERC Technical Conference 2023*, Docket No. AD10-12-014 (Increasing Real-Time and Day-Ahead Market Planning Efficiency Through Improved Software), Washington, D.C., June 27-29.

Leigh Tesfatsion (2023) **"Economics of Grid-Supported Electric Power Markets: A Fundamental Reconsideration,"** invited virtual (Zoom) presentation, *ISU ECpE Power Seminar*, Department of Electrical and Computer Engineering, Iowa State University, Ames, IA, April 18th.

Leigh Tesfatsion (2023) **"Economics of Grid-Supported Electric Power Markets: A Fundamental Reconsideration,"** invited virtual (WebEx) presentation to *Monitoring Analytics* (PJM Independent Market Monitor): *PART II: 1 March 2023 (10:30am – noon CPT).*

Leigh Tesfatsion (2023), **"Economics of Grid-Supported Electric Power Markets: A Fundamental Reconsideration,"** invited virtual (WebEx) presentation to *Monitoring Analytics* (PJM Independent Market Monitor): *PART I: 15 Feb 2023 (10:30am – noon CPT).*

Leigh Tesfatsion (2023), **"Economics of Grid-Supported Electric Power Markets: A Fundamental Reconsideration,"** 30 January 2023 invited virtual (WebEx) presentation to *U.S. Federal Energy Regulatory Commission (FERC)* staff members of "Comments (and Supporting Document)" e-filed to FERC Docket AD21-10-000 ("Modernizing Wholesale Electric Power Market Design") on January 14.

Leigh Tesfatsion (2022), **"Economics of Grid-Supported Electric Power Markets: A Fundamental Reconsideration,"** presentation, *Transactive Energy Theory Workshop* 2022 (virtual), Sponsored by the Pacific Northwest National Laboratory (PNNL), Dec. 6-7.

Leigh Tesfatsion (2022) **"U.S. RTO/ISO-Managed Wholesale Power Markets: A Fundamental Reconsideration,"** presentation (virtual), *Argonne National Laboratory* (ANL), 5 October.
https://www2.econ.iastate.edu/tesfatsi/ArgonneTalkSlideSet.LTesfatsion.5Oct2022.pdf

Rui Cheng (presenter), Leigh Tesfatsion, & Zhaoyu Wang (2022), **"Consensus-Based Transactive Design for Unbalanced Distribution Networks***,"* presentation, *IEEE Power and Energy Society (PES) General Meeting,* Denver, CO, July 17-21.

Leigh Tesfatsion (2022)**, "Transitioning to Linked Swing-Contract Wholesale Power Markets for Net-Zero 2050,"** presentation, *FERC Technical Conference 2022 (Virtual): Increasing Real-Time and Day-Ahead Market Efficiency Through Improved Software,* Washington, D.C., June 21-23.

Leigh Tesfatsion (2021), **"Agent-Based Platforms for Electric Power Systems,"** presentation, *IEEE Power and Energy Society (PES) General Meeting* (Virtual), July 26-29.

Leigh Tesfatsion (2021), **"A New Swing-Contract Design for Wholesale Power Markets,"** presentation (virtual), *FERC Technical Conference on Increasing Real-Time and Day-Ahead Market Efficiency Through Improved Software*, June 22-24.

Leigh Tesfatsion (2021), **"A Multiperiod Consensus-Based Transactive Energy System for Unbalanced Distribution Networks,"** PI project presentation (virtual), *Power Systems Engineering Research Center (PSERC), Industrial Advisors Board (IAB) Meeting*, May 12-14.

Leigh Tesfatsion (2020), **"A New Swing-Contract Design for Wholesale Power Markets,"** presentation (virtual), *ARPA-E/I-CPIE Event*, December 17.

Leigh Tesfatsion (2020) **"A New Swing-Contract Design for Wholesale Power Markets,"** presentation (virtual), *Electric Power Research Institute (EPRI),* September 18.

Wanning Li and Leigh Tesfatsion (2016), **"Market Provision of Flexible Energy/Reserve Contracts: Optimization Formulation,''** presentation, *IEEE PES General Meeting*, Boston, MA, July 17-21.

 Pedram Jahangiri, Di Wu, Wanning Li, Dionysios C. Aliprantis, and Leigh Tesfatsion (2012), **"Development of an Agent-Based Distribution Test Feeder with Smart-Grid Functionality,'** presentation, *IEEE PES General Meeting*, San Diego, CA, July 22-26, 2012.

Auswin George Thomas, Chengrui Cai, Dionysios C. Aliprantis, and Leigh Tesfatsion (2012), **"Effects of Price-Responsive Residential Demand on Retail and Wholesale Power Market Operations,''** presentation, *IEEE PES General Meeting,* San Diego, CA, July 22-26.

Chengrui Cai, Pedram Jahangiri, Auswin George Thomas, Huan Zhao, Dionysios C. Aliprantis, and Leigh Tesfatsion (2011), **"Agent-Based Simulation of Distribution Systems with High Penetration of Photovoltaic Generation,"** presentation, *IEEE PES General Meeting*, Detroit, MI.

Huan Zhao, Auswin George Thomas, Pedram Jahangiri, Chengrui Cai, Leigh Tesfatsion, and Dionysios C. Aliprantis (2011), "**Two-Settlement Electric Power Markets with Dynamic-Price Customers,**" presentation, *IEEE PES General Meeting*, Detroit, MI.

Nanpeng Yu, Abhishek Somani, and Leigh Tesfatsion (2010), **"Financial Risk Management in Restructured Wholesale Power Markets: Concepts and Tools,"** presentation, *IEEE PES General Meeting*, Minneapolis, MN, July.

Qun Zhou, Leigh Tesfatsion, and Chen-Ching Liu (2010), "**Global Sensitivity Analysis for the Short-Term Prediction of System Variables,"** presentation, *IEEE PES General Meeting*, Minneapolis, MN, July.

Dionysios Aliprantis, Scott Penick, Leigh Tesfatsion, and Huan Zhao (2010), **"Integrated Retail and Wholesale Power System Operation with Smart-Grid Functionality,"** presentation**,** *IEEE PES General Meeting*, Minneapolis, MN, July.

Hongyan Li and Leigh Tesfatsion (2009), **"The AMES Wholesale Power Market Test Bed: A Computational Laboratory for Research, Teaching, and Training,"** presentation, *IEEE PES General Meeting*, Calgary, Alberta, CA, July 26-30.

Haifeng Liu, Leigh Tesfatsion, and A. A. Chowdhury (2009), **"Locational Marginal Pricing Basics for Restructured Wholesale Power Markets,"** presentation, *IEEE PES General Meet.,* Calgary, July 26-30.

Hongyan Li, Junjie Sun, and Leigh Tesfatsion (2008), **"Dynamic LMP Response Under Alternative Price-Cap and Price-Sensitive Demand Scenarios,"** presentation, *IEEE PES Gen. Meeting,* Pittsburgh, PA, July.

Junjie Sun and Leigh Tesfatsion (2007), **"An Agent-Based Computational Laboratory for Wholesale Power Market Design,"** presentation, *IEEE PES General Meeting*, Tampa, Florida, June.

Junjie Sun and Leigh Tesfatsion (2007), **"Open-Source Software for Power Industry Research, Teaching, and Training: A DC-OPF Illustration,"** presentation, *IEEE PES General Meeting*, Tampa, Florida, June.

Steven Widergren, Junjie Sun, and Leigh Tesfatsion (2006), **"Market Design Test Environments,"** presentation, *IEEE PES General Meeting*, Montreal, June.

Deddy Koesrindartoto, Junjie Sun, and Leigh Tesfatsion (2005), **"An Agent-Based Computational Laboratory for Testing the Economic Reliability of Wholesale Power Market Designs**," presentation, *IEEE PES General Meeting*.

James Nicolaisen, Valentin Petrov, Matthew Smith, Leigh Tesfatsion (2000), **"Concentration and Capacity Effects on Electricity Market Power,"** presentation, *2000 IEEE Congress on Evol. Comp.*

Leigh Tesfatsion (1980)**, "Criterion Decomposition for the Myopic Sequential Control of Uncertain Systems,"** presentation, *13th Annual Asilomar Conf. on Circuits, Systems, & Computers*, IEEE Comp Soc.

Leigh Tesfatsion (1979), **"Criterion Filtering Methods for Adaptive Control,**'' presentation, *12th Annual Asilomar Conference on Circuits, Systems, & Computers, IEEE Computer Society.*

===

ECpE OPEN-SOURCE SOFTWARE (OSS) TEST-SYSTEM RELEASES:

AMES Market Package (Java/Python): Homepage

*A*gent-Based *M*odeling of *E*lectricity *S*ystems (*AMES*)

https://www2.econ.iastate.edu/tesfatsi/AMESMarketHome.htm

AMES V5.0 (Java/Python) -- Latest AMES release (2020): GitHub Repository

https://github.com/ames-market/AMES-V5.0

DCOPFJ (Java) -- A DC Optimal Power Flow solver for AMES V2.06: Homepage

https://www2.econ.iastate.edu/tesfatsi/DCOPFJHome.htm

Eight-Zone ISO-NE Test System (Java/Python): BitBucket Repository

An eight-zone test system for an ISO-managed wholesale electric power market based on ISO New England data, implemented via AMES V4.0.

https://bitbucket.org/kdheepak/eightbustestbedrepo

ERCOT Test System (Java/Python): GitHub Repository

An agent-based test system modeling wholesale power market operations in the Electric Reliability Council of Texas (ERCOT), using AMES V5.0.

https://github.com/ITDProject/ERCOTTestSystem

ITD Project/Household Formulation (Python): GitHub Repository

https://github.com/ITDProject/HouseholdFormulationRepository

ITD TES Platform V2 (Co-Simulated, Java/Python/C++/C): GitHub Repository:

https://github.com/ITDProject/ITDTESPlatform