

## CURRICULUM VITAE

James L. Sweeney, Stanford University

**Director, Precourt Energy Efficiency Center**  
**Professor, Management Science and Engineering**  
**Senior Fellow, Stanford Institute for Economic Policy Research**  
**Senior Fellow, Precourt Institute for Energy**  
**Senior Fellow, by courtesy, Hoover Institution on War, Revolution, and Peace**  
**Senior Fellow, by courtesy, Freeman Spogli Institute for International Studies**

### CONTACT INFORMATION:

Home: Telephone: (650) 322-9835  
Mobile: (650) 787-4333

Work: Department of Management Science and Engineering  
Yang & Yamazaki Environment & Energy Building – MC 4206  
Stanford University  
473 Via Ortega, Room 389, Stanford, CA 94305  
Telephone: (650) 723-2847  
Email: Jim.Sweeney@stanford.edu  
Web: PEEC.stanford.edu  
[www.stanford.edu/dept/MSandE/people/faculty/sweeney](http://www.stanford.edu/dept/MSandE/people/faculty/sweeney)

### COLLEGES:

Massachusetts Institute of Technology  
B.S., Electrical Engineering 1966  
Stanford University  
Ph.D., Engineering-Economic Systems 1971

### PROFESSIONAL EMPLOYMENT:

#### Stanford University

Department of Engineering-Economic Systems:  
Research Assistant 1967 - 1970  
Acting Instructor 1970 - 1971  
Assistant Professor 1971 - 1976  
Associate Professor 1976 - 1980  
Professor 1980 - 1996  
Department Chairman 1991 - 1996  
Department of Engineering-Economic Systems and Operations Research:  
Professor 1996 - 1999  
Department Chairman 1996 - 1999

Department of Management Science and Engineering:	
Professor	2000 - current
Department of Economics:	
Affiliated Professor	1978 - current
School of Law:	
Cooperating Professor	1981-1982
Energy Modeling Forum:	
Director	1978-1984
Senior Advisory Panel Member	1988 - current
Institute for Energy Studies:	
Chairman	1981-1985
Stanford Institute for Economic Policy Research (formerly, Center for Economic Policy Research):	
Director	1984-1986
Chairman: Energy, Natural Resources and the Environment Program	1984 - current
Steering Committee	1982 - current
Senior Fellow	1998 - current
Public Policy Program:	
Steering Committee	1987-1991
Program in Earth Systems Science:	
Steering Committee	1992 - 2000
Freeman Spogli Institute for International Studies	
Senior Fellow (by Courtesy)	2005 - current
Steering Committee, Center for International Security and Cooperation:	1996 - current
Hoover Institution:	
Senior Fellow (by Courtesy)	2001 - current
Interdisciplinary Program in Environment and Resources:	
Executive Committee	2002 -2007
Precourt Energy Efficiency Center (formerly named Precourt Institute for Energy Efficiency)	
Director	2006 - current

### **U.S. Federal Energy Administration**

Consultant	1974
Director, Office of Energy Systems	1974-1975
Director, Office of Quantitative Methods	1975
Director, Office of Energy Systems Modeling & Forecasting	1975-1976

### **CORPORATE BOARDS/ADVISORY BOARD**

Hara Software. Board of Directors  
American Efficient. Board of Advisors  
Sun Synchrony. Board of Advisors  
Geothermic Solution. Board of Advisors

## **MEMBERSHIP IN PROFESSIONAL/CIVIC SOCIETIES or ADVISORY BOARDS:**

Association of Environmental and Resource Economists  
American Economic Association  
California Council on Science and Technology  
Fellow 2000 - current  
Council Member 2007 - current  
Economic and Allocation Advisory Committee, of California Air Resources Board,  
2009-2010  
Governor Schwarzenegger's Council of Economic Advisors, 2004 - current  
Independent Review Panel, Public Interest Energy Research Program (California Energy  
Commission), First, Second, Third, Fourth Panels  
International Association for Energy Economics – Past Vice President for Publications  
National Renewable Energy Laboratory,  
External Advisory Council, 2003 - current  
National Research Council Board on Energy and Environmental Systems, 1996 - 1999  
Palo Alto-University Rotary Club – Past President  
Stanford Campus Residential Leaseholders  
Board Member  
President of Board of Directors – 2002 - current  
U.S. Association for Energy Economics – Senior Fellow

## **PROFESSIONAL JOURNAL EDITORIAL POSITIONS:**

*The Energy Journal*, Editorial Board member (past)  
*Resource and Energy Economics*, Editorial Board member (past), Past Co-editor

## **AWARDS AND HONORS:**

Tau Beta Pi, MIT, 1966  
Eta Kappa Nu, MIT, 1966  
Federal Energy Administration Distinguished Service Award, 1975  
Excellence in Teaching Award, Stanford Society of Black Scientists  
and Engineers, 1989  
Senior Fellow, U.S. Association for Energy Economics, 1999 -  
National Associate of the National Academies 2004 –  
Adelman-Frankel Award, 2007. United States Association for Energy Economics.  
The award is given to “an individual or organization for a unique and innovative  
contribution to the field of energy economics.”  
Outstanding Contribution Award, 2008. International Association for Energy Economics.  
“The 2008 Award for Outstanding Contributions to the Profession of Energy  
Economics and to its Literature.”

## JOURNAL ARTICLES

"Quality, Commodity Hierarchies, and Housing Markets," *Econometrica*, Volume 42, No. 1, January 1974, pp. 147-167.

"Modeling Housing Markets: Commodity Hierarchies in a Spatial Setting," *Stanford Journal of International Studies*, Volume 10, Spring 1974, pp. 167-197.

"Housing Unit Maintenance and the Mode of Tenure," *Journal of Economic Theory*, Volume 8, No. 2, June 1974, pp. 111-138.

"A Commodity Hierarchy Model of the Rental Housing Market," *Journal of Urban Economics*, Volume 1, No. 3, July 1974, pp. 288-323.

"Economics of Depletable Resources: Market Forces and Intertemporal Bias," *Review of Economic Studies*, Volume 44, No. 1, February 1977, pp. 125-141. Reprinted in *The Economics of Exhaustible Resources*, Geoffrey Heal (ed.), Edward Elgar Publishing, Ltd., London, 1993.

"The Impact of the President's Proposed Gasoline Tax and Gas-Guzzler Tax on Gasoline Consumption," *DRI Energy Bulletin*, August, 1977, pp. 6-11.

"Methodologies for Petroleum Product Price Forecasting: A Review," with M. Therese Flaherty, *Topics in Energy*, Data Resources, Inc., September 1978, pp. 1-45.

"Optimal Growth with Depletable Resources," with P. C. Garg, *Resources and Energy*, Volume 1, No. 1, 1978, pp. 43-56.

"Energy Policy Models in the National Energy Outlook," with W. W. Hogan and M. H. Wagner, *Management Science*, Volume 10, 1978, pp. 37-62.

"The Energy Modeling Forum: Past, Present, and Future," with J. P. Weyant, *Journal of Business Administration*, Volume 10, Nos. 1 and 2, Fall, 1978 - Spring, 1979, pp. 295-320.

"Effects of Federal Policies on Gasoline Consumption," *Resources and Energy*, Volume 2, September 1979, pp. 3-26.

"Aggregate Elasticity of Energy Demand," principal author with EMF 4 Working Group members, *The Energy Journal*, Volume 2, No. 2, April 1981, pp. 37-75.

"World Oil: Preliminary Results from the Energy Modeling Forum Study," *Kvartals Skrift*, Bergen Bank: March-April 1981, pp. 161-179.

"Modeling For Insights, Not Numbers: The Experiences of the Energy Modeling Forum," with J. P. Weyant and H. G. Huntington, *Omega*, Volume 10, No. 5, November 1982, pp. 449-462.

"The Response of Energy Demand to Higher Prices: What Have We Learned?," *American Economic Review*, Volume 74, No. 2, May 1984, pp. 31-37; also published in *Global Energy Interactions*, R. K. Pachauri (ed.), Allied Publishers Private Limited, New Delhi, India, 1987, pp. 573-584.

"Analyzing Impacts of Potential Tax Policy Changes on U.S. Oil Security," *The Energy Journal*, with M. J. Boskin, Volume 6, August 1985, pp. 89-108.

"Changing World Oil Markets: What Should We Expect?," *Zeitschrift fur Energie Wirtschaft*, March 1986, pp. 73-74.

"On Economic Policy Responses to Disruptions: A Reply to Harry Saunders," with Bert Hickman and Hillard Huntington, *The Energy Journal*, October 1989, Vol 10 no. 4, pp. 189-198.

"Oil Import Fees With Exemptions: An Empirical Examination," *Resources and Energy*, March 1990, Vol. 11 no.3, pp. 215-239.

"The California Electricity Crisis: Lessons for the Future," *The Bridge*, Summer 2002, pp 23-31.

"An Energy Policy for the Twenty-first Century", *Hoover Digest*, 2005, No. 1. pp. 33-36.

"Low Carbon Growth: Our Ethical Responsibility", *Development Outreach*, World Bank Institute. February 2008.

"Learning-by-Doing and the Optimal Solar Policy in California", Arthur van Benthem, Kenneth Gillingham, and James Sweeney, *The Energy Journal*, 2008, Volume 29, No. 4, pp 131-151.

"Climate Speculations" Review of *Climatopolis: How Our Cities Will Thrive in the Hotter Future* by Matthew E. Kahn. *Stanford Social Innovation Review*. Winter 2011

## **BOOKS/MONOGRAPHS:**

*A Dynamic Theory of the Housing Market*, Ph.D. dissertation, Department of Engineering-Economic Systems, Stanford University, 1971.

*Handbook of Natural Resource and Energy Economics*: A.V. Kneese and James L. Sweeney (ed.), North Holland, Volumes I and II, 1985. (Translated into Chinese, 2001.)

*Macroeconomic Impacts of Energy Shocks*: Bert G. Hickman, Hillard Huntington, James Sweeney (eds.), North Holland, 1987.

*Potential Costs and Regulatory Burdens of the Energy Policy Act of 1992: Provisions for Alternative Fuel Vehicles*. (Monograph) W. David Montgomery, Margaret Rhodes, and James Sweeney, DRI/McGraw-Hill and Charles River Associates, July 1993.

*Handbook of Natural Resource and Energy Economics: A.V. Kneese and James L. Sweeney* (ed.), North Holland, Volume III, 1993. (Translated into Chinese, 2001.)

*Environmentally Significant Consumption: Research Directions: Paul C. Stern, Vernon W. Ruttan, Robert H. Socolow, and James L. Sweeney, editors.* National Academy Press, Washington, D.C., 1997.

*Trade and Industry Impacts of the Kyoto Protocol.* W. David Montgomery and James L. Sweeney. (White Paper) The Business Roundtable. October 1999.

*The California Electricity Crisis.* James L. Sweeney. Hoover Institution Press. Stanford California. July 2002.

### **CONTRIBUTIONS TO BOOKS:**

*Project Independence Report*, contributor, Federal Energy Administration, November, 1974.

"A Mathematical Model of Housing Markets," *Proceedings: IEEE International Symposium on Circuits and Systems*, April 1974, pp. 468-472.

"Toward Housing Market Dynamics," *Proceedings; IEEE Conference on Decision and Control*, November 1974, pp. 814-817.

"Demand for Gasoline: Application of Commodity Hierarchy Theory," with D. B. Cato and M. E. Rodekohr, *Proceedings: Business and Economic Statistics Section*, American Statistical Association, 1975.

*National Energy Outlook*, major contributor, directed development of supply/ demand/price forecasts, Federal Energy Administration, February 1976.

"The Capital Stock Adjustment Process and the Demand for Gasoline; A Market Share Approach," with D. B. Cato and M. E. Rodekohr, in *Economic Dimensions and Energy Supply and Demand*, J. Kraft, B. Askin (eds.), Lexington Books, Lexington, Massachusetts, 1976.

"Energy Regulation: Solution or Problem?," in *Options for U.S. Energy Policy*, Institute for Contemporary Studies, San Francisco, 1977 pp. 179-209.

"The Demand for Gasoline: A Vintage Capital Model," in *Select Papers from Workshops on World Energy Supply and Demand*, International Energy Agency, Paris, 1978, pp. 240-277.

"A Price Forecasting System for Refined Petroleum Products," with G. R. Doenges, H. G. Huntington, and E. R. Novicky, a report submitted to the Department of Energy, Data Resources, Inc., JRB Associates, Inc., July 1978.

"Structural/Econometric Modeling of Gasoline Consumption," *Proceedings: Second Lawrence Symposium on Systems and Decision Sciences*, October 1978, pp. 241-252.

"Effects of Federal Policies on Gasoline Consumption," *Foresight: The Economic Impact of Energy Conservation*, Volume 3, Library of Congress, December 1978, pp. 241-225.

"New Car Efficiency Standards and the Demand for Gasoline," in *Advances in the Economics of Energy and Resources: The Structure of Energy Markets*, Volume 1, Robert Pindyck (ed.), JAI Press, Inc., Greenwich, Connecticut, 1979, pp. 105-133.

"U.S. Oil and Gas Supply Study," with J. P. Weyant, *Proceedings: AIME Annual Meeting*, Council of Economics, Las Vegas, Nevada, February 1980, pp. 73-84.

"The Energy Modeling Forum, an Overview", in *Validation and Assessment Issues of Energy Models*, Saul Gass (ed.), U.S. Department of Commerce/National Bureau of Standards Special Publication 569, February 1980, pp. 65-96.

*Electric Load Forecasting: Probing the Issues with Models*, Energy Modeling Forum Working Group 3, Volumes 1 and 2, Energy Modeling Forum, Stanford University, Stanford, California, March 1980.

"Overview," in *Electric Load Forecasting: Probing the Issues with Models*, EMF Report 3, Volumes 1 and 2, March 1980, pp. 5-15.

"Energy Problems and Policies," in *The Economy in the 1980's: A Program for Growth and Stability*, Institute for Contemporary Studies, San Francisco, Spring 1980, pp. 353-392.

"Energy Policies and Automobile Use of Gasoline," in *Selected Studies on Energy/Background Papers for Energy: The Next Twenty Years*, H. H. Landsberg, Spring 1980, pp. 93-125.

"Energy and Economic Growth: A Conceptual Framework," in *Symposium Papers: Energy Modeling and Net Energy Analysis*, Institute of Gas Technology, Chicago, 1978; also in *Mathematical Modeling of Energy Systems*, NATO Advanced Study Institute, Istanbul, Turkey, 1979; also in *Directions in Energy Policy: A Comprehensive Approach to Energy Resource Decision-Making*, B. Kursunoglu, A. Permuter (eds.), Fall 1979, pp. 115-140; also in Preprint of *IBM Systems Science Symposium: Modeling and Prediction of Large Scale Systems*, Nippon IBM Co., Ltd., September 1980, pp. 1-32 (volume title translated from Japanese).

"The Energy Modeling Forum: Past, Present, and Future," with J. P. Weyant, in *Energy Policy - The Global Challenge*, P. N. Nemetz (ed.) Institute for Research on Public Policy, Fall 1979, pp. 292-320; also in *Energiemodelle für die Bundesrepublik Deutschland*, A. Voss, K. Schmitz, (eds.), Verlag TUV Rheinland Köln, Spring 1980, pp. 149-167.

"Energy Modeling Forum 5: U.S. Oil and Gas Supply," in *Energy Modeling III: Dealing with Energy Uncertainty*, April 1981, pp. 283-303.

"The Theory and Practice of Energy Aggregation," with A. B. Borison and T. F. Wilson, in *Aggregate Elasticity of Energy Demand*, Volume 2, Energy Modeling Forum.

"Price and Quantity Change Decomposition for Aggregated Commodities," in *Aggregate Elasticity of Energy Demand*, Volume 2, Energy Modeling Forum.

"Energy Modeling Forum 4: Aggregate Elasticity of Energy Demand," with W. W. Hogan and J. P. Weyant, *Proceedings: Conference on Alternative Energy Sources*.

"Resource Depletion, Research and Development and the Social Rate of Discount: A Commentary and Extension," in *The Rate of Return for Energy Investment*, Robert Lind, Martin Greenberger, (eds.).

"Model Comparison for Energy Policy and Planning," in *Energy Policy Planning*, Bayraktar, Cherniavsky, Laughton, and Ruff, (eds.), NATO.

"The Relationship Between Energy Use and the Economy," in *Energy Independence for the United States*, Nake M. Kamrany, The Newport Foundation, 1981. Also published in *U.S. Options for Energy Independence*, Nake M. Kamrany, D. C. Heath & Co., 1982.

*World Oil*, Energy Modeling Forum Working Group 6, Energy Modeling Forum, Stanford University, Stanford, California, January 1982.

"Energy Model Comparison: An Overview," in *Large-Scale Energy Models -- Prospects and Potential*, Westview Press, Inc., Boulder, CO, 1983, pp. 191-217.

"Price Asymmetry in the Demand for Energy," with David Fenichel, *Energy Demand Prospects & Trends*, Paul Stevens (ed.) Camelot Press Ltd. Southampton, Great Britain, 1987, pp. 48-70. Also in *Papers and Proceedings of the Eighth Annual North American Conference, the Changing World Economy*, International Association of Energy Economists, Cambridge, MA, May, 1987, pp. 218-222.

"Principles of Geographic Market Definition," *Manual on Antitrust Economics*, Economics Committee Antitrust Division, American Bar Association.

"Optimal Control and Time Consistent Equilibria in Dominant Firm/Competitive Fringe Dynamic Games," with Patricio del Sol, *IFAC/IFORS/IAEE International Symposium on Energy Systems, Management, and Economics*, October 1989, Tokyo.

"Production Costs for Alternative Liquid Transportation Fuels," *Methanol As An Alternative Fuel Choice: An Assessment*, Wilfrid Kohl (ed.), The Johns Hopkins Foreign Policy Institute, Washington D.C., 1990.



*Fuels to Drive our Future*, Committee on Production Technologies for Liquid Transportation Fuels, National Academy Press, Washington D.C. 1990. Principal Author, Chapter 3 and Appendix D.

*The National Energy Modeling System*, Committee on the National Energy Modeling System, National Research Council, National Academy Press, Washington D.C. 1992. Principal Author, Chapter 3: "NEMS Architecture."

"Economic Theory of Depletable Resources: An Introduction," Chapter 17 in *Handbook of Natural Resource and Energy Economics*, Volume III, A.V. Kneese and J.L. Sweeney (editors), North Holland, 1993.

"Natural Resource Economics," in *The Social Science Encyclopedia*, Edition 2, Routledge, London 1996.

"Energy Economics", In: Neil J. Smelser and Paul B. Baltes, Editor(s)-in-Chief, *International Encyclopedia of the Social & Behavioral Sciences*, Pergamon, Oxford, 2001, Pages 4513-4520 ([www.sciencedirect.com/science/article/B7MRM-4MT09VJ-PS/2/17641810797ce56d07449fd00b951033](http://www.sciencedirect.com/science/article/B7MRM-4MT09VJ-PS/2/17641810797ce56d07449fd00b951033))

"Natural Resource Economics," *The Social Science Encyclopedia*, Edition 3, Routledge, London 2004.

*California Public Interest Energy Research: Independent PIER Panel Report*, Independent PIER Panel. California Council on Science and Technology, March 2000.

*California Public Interest Energy Research: Independent PIER Panel Final Report*, Independent PIER Panel. California Council on Science and Technology, March 2001.

*Energy Research at DOE: Was It Worth It?* Committee on Benefits of DOE R&D in Energy Efficiency and Fossil Energy. National Academy Press, Washington, D.C. July 17, 2001.

*Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*. Committee on Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards. National Academy Press, Washington, D.C. July 30, 2001.

*The Hydrogen Economy: Opportunities, Costs, Barriers, and R&D Needs*. Committee on Alternatives and Strategies for Future Hydrogen Production and Use. National Academy Press, Washington, D.C. July 2004

*Prospective Evaluation of Applied Energy Research and Development at DOE (Phase One): A First Look Forward*. Committee on Prospective Benefits of DOE's Energy Efficiency and Fossil Energy R&D Programs (Phase One.) National Academy Press, Washington, D.C. 2005.

“California Electricity Restructuring, the Crisis, and its Aftermath;” Chapter 10 in *Electricity Market Reform: An International Perspective*, Perry Shiohansi and Wolfgang Pfaffenberger (eds.) Elsevier, April 2006

“Hydrogen for Light Duty Vehicles: Opportunities and Barriers in the United States”, Chapter 17 in *Human-Induced Climate Change: An Interdisciplinary Assessment*; Michael Schlesinger (Ed.), Cambridge University Press, 2007

*National Security Consequences of U.S. Oil Dependency*. Independent Task Force Report No. 58, Council on Foreign Relations, 2006.

*California Action Plan for Transportation Energy Security*. California Strategic Transportation Energy Partnership. CalStart, January 2007.

*Prospective Evaluation of Applied Energy Research and Development at DOE (Phase Two.)* Committee on Prospective Benefits of DOE’s Energy Efficiency and Fossil Energy R&D Programs (Phase Two). National Academy Press, Washington, D.C. 2007.

*Liquid Transportation Fuels from Coal and Biomass: Technological Status, Costs, and Environmental Impact.*) America's Energy Future Panel on Alternative Liquid Transportation Fuels; National Academy of Sciences; National Academy of Engineering; National Research Council. National Academy Press, Washington, D.C. 2009.

*America’s Energy Future: Technology and Transformation*. Committee on America’s Energy Future; National Academy of Sciences; National Academy of Engineering; National Research Council. National Academy Press, Washington, D.C. 2009.

“Market Failure and the Structure of Externalities”, Kenneth Gillingham and James Sweeney in *Harnessing Renewable Energy in Electric Power Systems*, Boaz Moselle, Jorge Padilla, and Richard Schmalensee, (eds.), RFF Press, August 2010.

“Barriers to Implementing Low Carbon Technologies”, Kenneth Gillingham and James Sweeney in *Climate Change Economics*, Vol. 3, No. 4, World Scientific Publishing Company 2012

## **SELECTED WORKING PAPERS, REPORTS:**

"The Logic of Efficiency Standards and Their Influence on Gasoline Consumption," with M. E. Rodekohl and D. B. Cato, Working Paper, Federal Energy Administration, March 1975.

*The U. S. Oil and Gas Supply*, Energy Modeling Forum Working Group 5. Energy Modeling Forum, Stanford University, 1981.

"Time Inconsistency and the Advantage of Not Committing: The Importer of an Exhaustible Resource," with Patricio del Sol, Center for Economic Policy Research Working Paper, Stanford California, October 1988.

"Price Oscillations in Oligopoly," with William Comanor, Center for Economic Policy Research Publication No. 181, Stanford California, January 1990.

"Mandates for Alternative Fuels: A Policy Analysis," with David Montgomery, Charles River Associates, September 1991.

"Review of Transportation Fuels Analysis and Policy Recommendations in California Energy Commission: *California Energy Plan*," with David Montgomery, April 1992.

"Mandating a Transition to Alternative Transportation Fuels: Economic, Environmental and Energy Security Implications," with David Montgomery, June 1992.

"Gasoline Taxes: An Economic Assessment," Prepared for the Office of Technology Assessment, U.S. Congress, September 1993.

"Evaluation of the EPA's Proposal for Renewable Oxygenates," May 1994. Prepared for The American Petroleum Institute.

"Agricultural Damage of Common Crops and Externalities Associated with Bread Consumption," May 1997, with W. David Montgomery, J. Eric Bickel, Graydon Barz, Wenlong Weng, and Fehmi Ashaboglu. EES&OR Department Working Paper.

"Tradable Fuel Economy Credits. Analysis and Text Extended from Chapter 5 of *Impact and Effectiveness of Corporate Average Fuel Economy Standards*," August 12, 2001.

"Regulating Fuel Economy: Corporate Average Fuel Economy Standards," *Policy Brief*, Stanford Institute for Economic Policy Research, March 2003.

"Deconstructing the Rosenfeld Curve," Anant Sudarshan and James Sweeney, June 2008, <http://peec.stanford.edu/library>

"Analysis of Measures to Meet the Requirements of California's Assembly Bill 32" Precourt Energy Efficiency Team, September 2008. <http://peec.stanford.edu/library>

"Allocating Emissions Allowances Under a California Cap-and-Trade Program: Recommendations to the California Air Resources Board and California Environmental Protection Agency from the Economic and Allocation Advisory Committee" California Air Resources Board. March 2010

Authors: Justin Adams, Vicki Arroyo, Matthew Barger, James K. Boyce, Dallas Burtraw, James Bushnell, Robert Fisher, Richard Frank, Larry Goulder, Dan Kammen, Christopher R. Knittel, Stephen Levy, Joe Nation, Nancy E. Ryan, Nancy Sidhu, James L. Sweeney