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Current Positions

James A Baker III and Susan G Baker Fellow in Energy and Resource Economics | Senior Director, Center for Energy Studies, Baker Institute for Public Policy, Rice University

Manage a team of 52 fellows, scholars, doctoral students, and research and administrative staff. Lead fund-raising efforts and act as a principal investigator in multiple research endeavors across Rice University. Disseminate research and engage in testimonies, briefings, workshops, conferences, and other meetings with industry, government, NGOs, academia, and international ministerial groups on matters related to energy sector evolution and market design, policy and regulatory oversight, and hurdles for technology adoption.

Co-director, Masters of Energy Economics | Adjunct Professor and Lecturer, Department of Economics, Rice University

Design curriculum for the STEM designated Masters of Energy Economics (MEECON) program. Oversee admissions for 20-25 new matriculants, annually, into the MEECON program. Teach two core courses in Energy Economics and oversee the capstone practicum. Advise PhD student research.

Governing Board, Sustainability Institute, Rice University

Coordinate activities on campus and develop strategy for engaging with internal and external stakeholders.

Adjunct Professor, Department of Civil and Environmental Engineering, Rice University

Advise PhD student research.

Fields and Areas of Research

Fields

Energy, natural resource, and environmental economics and policy, energy and economic growth, applied microeconomics, applied econometrics, productivity analysis

Areas of Research

Natural gas markets, electricity markets, crude oil and petroleum product markets, energy commodity price relationships, transportation, national oil company behavior, economic development and energy demand, energy use and the environment, engineered and nature-based carbon capture, hydrogen, economics of technology adoption

Highest Education

Ph.D., Economics, Rice University, May 2000

Thesis: "Essays on Economic Development, Energy Consumption, and the Environment"

Honors and Affiliations

Honors

- OPEC Award for Research 2025, received at the 9th OPEC International Energy Symposium for "a career dedicated to the objective study and balanced analysis of the energy sector."
- Lifetime Achievement Award for the Advancement of the Education of Future Energy Leaders, Abdullah Bin Hamad Al-Attiyah Foundation, 2019
- Distinguished Fellow, Institute Energy Economics Japan (IEEJ), 2016-

- Adelman-Frankel Award to Center for Energy Studies, U.S. Association for Energy Economics (USAEE), 2013
- Senior Fellow, USAEE, 2012
- Haydn Williams Fellowship, Curtin University, Perth, Australia, 2012-2013
- Award for Outstanding Paper in *The Energy Journal*, International Association for Energy Economics (IAEE), 2001

Boards and Committees

- Energy Leadership Institute, Advisory Board, 2025-
- Marunouchi Innovation Partners, External Advisor, 2024-
- American Statistical Association (ASA), Committee on Energy Statistics, 2023-2025, 2026-2028
- Texas Energy Poverty Research Institute (TEPRI), Research Advisory Council, 2023-
- Greater Houston Partnership, Energy Committee, 2023-
- KAPSARC School of Public Policy, Advisory Committee, 2022-
- Houston Energy Transition Initiative, Advisory Board, 2022-
- Carbon Neutral Coalition, Advisory Council, 2021-
- T20 Task Force Chair, Sustainable Energy, Water, and Food Systems, 2020
- Colorado School of Mines, Payne Institute, Advisory Board, 2018-
- American Council for Capital Formation, Center for Policy Research, Board of Scholars, 2015-

Professional Affiliations

- USAEE, Vice President, Conferences, 2014-2015
- USAEE, Vice President, Academic Affairs, 2012-2013
- IAEE, Council Member, 2011, 2019
- American Association for the Advancement of Science (AAAS), Member
- American Economic Association (AEA), Member
- International Association for Energy Economics (IAEE), Member
- National Association of Business Economists (NABE), Member
- National Petroleum Council (NPC), Academic Member

Sponsored Research/Gifts/Grants

- Gift Portfolio, Center for Energy Studies Energy Forum (2012-2026): \$1,600,000/yr
- Aramco, "Analysis of Energy Transitions" (2023-2026): \$3,000,000
- Korea Foundation, "Visiting Fellow in US-Korea Energy Policy" (2022-2023): \$85,000
- Gas Technology Institute, "Assess Regulatory Pathways and Policy for Scaling Hydrogen in the Texas Gulf Coast Region" (2022): \$50,000
- Cynthia and George Mitchell Foundation, "Expanding the Hydrogen Market in Texas" (2021-2022): \$50,000
- Baker Botts, "Annual Energy Conference and Leadership Engagement" (2017-2031): \$3,200,000
- Lyda Hill Philanthropies, Challenge Grant, "Texas Carbon Market" (2021): \$500,000
- Lyda Hill Philanthropies, Lone Star Prize Finalist, "Texas Carbon Market" (2021): \$40,000
- Energy Futures Initiative, workshops and reports, "The Future of Natural Gas as Energy Transitions" with focus on Sub-Saharan Africa and North America (2020-2021): \$50,000
- Cynthia and George Mitchell Foundation, "Expanding Carbon Capture in Texas" (2019-2021): \$101,605
- Oil and Gas Climate Initiative, "Expanding Carbon Capture in Texas" (2020-2021): \$30,000
- Shell, "Energy Transitions" (2019-2025): \$3,100,000
- Korea Energy Economics Institute, "Mercantilism's Groundhog Day: The US-China Trade War and Regional Energy Market Implications" (2019): \$20,000
- Tellurian, "The Evolution of Global Gas Markets" (2018-2019): \$175,000
- Qatar Leadership Center, "Energy Leadership Roundtable Series" (2016): \$252,896
- U.S. Department of Energy, National Energy Technology Laboratory, "The Macroeconomic Impact of U.S. LNG Exports" (2015): \$186,752

- Subcontract Award from the University of Texas for the Alfred P. Sloan Foundation, “Shale Oil” (2014-2016): \$100,000
- Alfred P. Sloan Foundation, “The Market Impacts of New Shale Gas-Directed Policies in the United States” (2013-2014): \$275,000
- Sub-Award from the University of Texas for the Alfred P. Sloan Foundation, “The Role of Shale Gas in the U.S. Energy Transition: Recoverable Resources, Production Rates, and Implications” (2011-2013): \$100,000
- Qatar Petroleum, “International Natural Gas and Policy” (2011-2013): \$725,000
- U.S. Department of Energy, Office of International Policy and Affairs, “Shale Gas and US National Security” (2011): \$100,000

Publications

Journal Articles

- “[Additionality Constrains Investment in Carbon Sequestration](#),” with Stan Kanneigeter, *npj Sustainable Agriculture*, 4, 40 (May 2026) DOI: 10.1038/s44264-026-00155-8.
- “[Carbon market development in Africa: Ethiopia as a model](#),” with Bezaye Tessema, Carrie Masiello, and Shih Yu Hung, *npj Climate Action*, 5, 43 (Apr 2026). DOI: 10.1038/s44168-026-00365-3.
- “[Operational Constraints and the Merit Order Effect in ERCOT](#),” with Peter Hartley and Shih Yu Hung, *Energy Journal*, Vol 47, Issue 3 (Mar 2026). DOI: 10.1177/01956574261425735.
- “[The Texas Deep Freeze of February 2021: What Happened and Lessons Learned?](#)” with Peter Hartley and Shih Yu Hung, *Economics of Energy and Environmental Policy*, Vol 12, No 2, p. 5-30 (June 2023). DOI: 10.5547/2160-5890.12.2.phar.
- “[Debt and Optionality in US LNG Export Projects](#),” with Peter Hartley, *The Energy Journal*, Vol 44, No 2, p. 57-80 (June 2023). DOI: 10.5547/01956574.44.2.phar.
- “[Cheap Money, Geopolitics and Supernormal Backwardation of the WTI Forward Curve](#),” with Mahmoud El-Gamal and Amy M Jaffe, *Economics of Energy and Environmental Policy*, Vol 12, No 1 (2023). DOI: 10.5547/2160-5890.12.1.melg.
- “[COVID-19 and the Value of Safe Transport](#),” with Ted Temzelides and Shih Yu Hung, *Springer Nature Scientific Reports* (Nov 2021). DOI: 10.1038/s41598-021-01202-9.
- “[Mercantilism’s Groundhog Day: The US-China Trade War and US Energy Exports to Northeast Asia](#),” with Ted Temzelides and Woongtae Chung, *Energy Strategy Reviews* (Nov 2021). DOI: 10.1016/j.esr.2021.100741.
- “[Shale Renders the ‘Obsolescing Bargain’ Obsolete: Political Risk and Foreign Investment in Argentina’s Vaca Muerta](#),” with Gabriel Collins, Mark Jones, Jim Krane and Francisco Monaldi, *Resources Policy*, Vol 74 (Nov 2021). DOI: 10.1016/j.resourpol.2021.102269.
- “[Price elasticity of demand for fuels by income level in Mexican households](#),” with Araceli Ortega Diaz, *Energy Policy*, Vol 151 (Apr 2021). DOI: 10.1016/j.enpol.2021.112132.
- “[A Cost-benefit Analysis of the Jones Act: Petroleum Product Tankers](#),” with Igor Hernandez, Anna Mikulska and Ted Temzelides, *Journal of Transport Economics and Policy*, Vol 55, Issue 1 (Jan 2021), p. 65-84.
- “[Water cost savings from soil biochar amendment: A spatial analysis](#),” with Jennifer Kroeger, Ghasideh Pourhashem and Caroline Masiello, *GCB Bioenergy*, Vol 13, Issue 1 (Jan 2021), p. 133-142. DOI: 10.1111/gcbb.12765.
- “[Electricity Reform and Retail Pricing in Texas](#),” with Peter Hartley and Olivera Jankovska, *Energy Economics*, Vol 80 (May 2019), p. 1-11. DOI: 10.1016/j.eneco.2018.12.024.
- “[Policy support for biochar: Review and recommendations](#),” with Ghasideh Pourhashem, Shih Yu Hung and Caroline A Masiello, *GCB Bioenergy*, Vol 11, Issue 2 (Feb 2019), p. 364-380. DOI: 10.1111/gcbb.12582.
- “[Geopolitical Dimension of US Oil Security](#),” with Jim Krane, *Energy Policy*, Vol. 114 (Mar 2018). DOI: 10.1016/j.enpol.2017.12.050.

- ["Valuing the air quality effects of biochar reductions on soil NO emissions,"](#) with Ghasideh Pourhashem, Quazi Z. Rasool, Rui Zhang, Daniel S. Cohan, and Caroline A. Masiello, *Environmental Science and Technology*, 51, 17, 9856-9863 (Jul 2017). DOI: 10.1021/acs.est.7b00748.
- ["Employment Impacts of Upstream Oil and Gas Investment in the United States,"](#) with Mark Agerton, Peter Hartley and Ted Temzelides, *Energy Economics*, Vol. 62 (Feb 2017). DOI: 10.1016/j.eneco.2016.12.012.
- ["Geospatial, temporal and economic analysis of alternative fuel infrastructure: The case of freight and U.S. natural gas markets,"](#) with Yueyue Fan, Allen Lee, Nathan Parker, Amy Myers Jaffe, Rosa Dominguez-Faus, *Energy Journal*, Vol 38, No 6 (2017). DOI: 10.5547/01956574.38.6.yfan.
- ["The Valley of Death for New Energy Technologies,"](#) with Peter Hartley, *Energy Journal*, Vol 38, No 3 (2017). DOI: 10.5547/01956574.38.3.phar.
- ["A view to the future of natural gas and electricity: An integrated modeling approach,"](#) with Wesley Cole and Aditya Jani. *Energy Economics*, Vol. 60 (Nov 2016). DOI: 10.1016/j.eneco.2016.03.005.
- ["Energy Sector Innovation and Growth: An Optimal Energy Crisis,"](#) with Peter Hartley, Ted Temzelides and Xinya Zhang, *Energy Journal*, Vol. 37, No. 1 (Jan 2016). DOI: 10.5547/01956574.37.1.phar.
- ["Employment impact from competing energy sources: Shale gas versus wind generation in Texas,"](#) with Peter Hartley, Ted Temzelides and Xinya Zhang, *Energy Economics*, Vol. 49 (May 2015). DOI: 10.1016/j.eneco.2015.02.023.
- ["A review of water and greenhouse gas impacts of unconventional natural gas development in the United States,"](#) with Douglas Arent, Jeffrey Logan, Jordan Macknick, William Boyd, Francis O'Sullivan, Jae Edmonds, Leon Clarke, Hillard Huntington, Garvin Heath, Patricia Statwick and Morgan Bazilian, *MRS Energy & Sustainability*, Vol. 2 (2015). DOI: 10.1557/mre.2015.5.
- ["The Global Gas Market, LNG Exports, and the Shifting U.S. Geopolitical Presence,"](#) with Amy M. Jaffe and Meghan O'Sullivan, *Energy Strategies Reviews*, Vol. 5 (Dec 2014). DOI: 10.1016/j.esr.2014.10.006.
- ["The Relationship between Crude Oil and Natural Gas Prices: The Role of the Exchange Rate,"](#) with Peter Hartley, *Energy Journal*, Vol. 35, No. 2 (2014). DOI: 10.5547/01956574.35.2.2.
- ["Environmental, Economic, and Energy Assessment of the Ultimate Analysis and Moisture Content of Municipal Solid Waste in a Parallel Co-Combustion Process,"](#) with Ana McPhail, Robert Griffin, Mahmoud El-Halwagi, and Pedro J.J. Alvarez, *Energy and Fuels* (Dec 27, 2013). DOI: 10.1021/ef401373n.
- ["Shale Gas in China: Prospects, Concerns, and Potential International Collaborations,"](#) with Morgan Bazilian, Ascha Lychett Pedersen, Jacquelyn Pless, Jeffrey Logan, Francis O'Sullivan, and Jane Nakano, *International Shale Gas and Oil Journal*, Vol.1, Issue 1 (Sep 2013).
- ["Changes in the Operational Efficiency of National Oil Companies,"](#) with Peter Hartley, *Energy Journal*, Vol. 34, No. 2 (2013). DOI: 10.5547/01956574.34.2.2.
- ["Modeling the implications of expanded US shale gas production,"](#) *Energy Strategies Review*, No. 1, (Jan 2012). DOI: 10.1016/j.esr.2011.12.002.
- ["Empirical Evidence of the Efficiency of National Oil Companies,"](#) with Stacy Eller and Peter Hartley, *Empirical Economics*, (May 2011). DOI: 10.1007/s00181-010-0349-8.
- ["Potential Futures for Russian Natural Gas,"](#) with Peter Hartley, *Energy Journal*, Special Issue, "World Natural Gas Markets and Trade: A Multi Modeling Perspective" (2009). DOI: 10.5547/ISSN0195-6574-EJ-Vol30-NoSI-6.
- ["A Model of the Operation and Development of a National Oil Company,"](#) with Peter Hartley, *Energy Economics*, Vol.30, No.5 (Sep 2008). DOI: 10.1016/j.eneco.2007.12.017.
- ["The Relationship between Crude Oil and Natural Gas Prices,"](#) with Peter Hartley and Jennifer Rosthal, *Energy Journal*, Vol. 29, No.3 (2008). DOI: 10.5547/ISSN0195-6574-EJ-Vol29-No3-3.
- ["Future World Market for Natural Gas Highly Dependent on Interactions,"](#) with Peter Hartley, *Natural Gas and Electricity*, Wiley Periodicals, Vol. 22, No. 1 (August 2005). DOI: 10.1002/gas.10048.
- ["The Economics of Energy Demand,"](#) ed. Cutler J. Cleveland, *Encyclopedia of Energy*, Elsevier Press (April 2004). DOI: 10.1016/B0-12-176480-X/00133-9.

[“Car Ownership and Economic Development with Forecasts to the Year 2015,”](#) with Ron Soligo, *Journal of Transport Economics and Policy* (Spring 2002). DOI: 10.3828/jtep.2002.36.2.163.

[“Economic Development and End-Use Energy Demand,”](#) with Ron Soligo, *Energy Journal*, Vol. 22, No. 2 (2001). DOI: 10.5547/ISSN0195-6574-EJ-Vol22-No2-4.

Baker Institute Research Papers

[“Prospects for Carbon Markets in Africa: Ethiopia as a Case Study,”](#) with Bezaye G. Tessema, Caroline A. Masiello, and Shih Yu Hung, Rice University’s Baker Institute for Public Policy (April 28, 2025). DOI: 10.25613/WJV1-CG38.

[“Scenarios for Global Natural Gas Markets to 2050: The Dynamics of US LNG Exports, the Deepening Connection Between Oil and Gas Production, and Shifts in Global Demand,”](#) Rice University’s Baker Institute for Public Policy (March 20, 2025). DOI: 10.25613/ZAET-5W61.

[“US LNG Exports: Truth and Consequence Revisited,”](#) Rice University’s Baker Institute for Public Policy (February 17, 2025). DOI: 10.25613/H0B7-6054.

[“Ukraine’s Electricity Sector: Urgency and Resilience in a Time of War,”](#) with Gabriel Collins, Houston: Rice University’s Baker Institute for Public Policy (August 14, 2024). DOI: 10.25613/BC9H-J996.

[“Harnessing Hydrogen: A Key Element of the U.S. Energy Future,”](#) Contributing Author, National Petroleum Council (April 2024).

[“Charting the Course: Reducing GHG Emissions from the U.S. Natural Gas Supply Chain,”](#) Contributing Author, National Petroleum Council (April 2024).

[“ERCOT and the Future of Electric Reliability in Texas,”](#) with Peter R. Hartley and Shih Yu Hung, Houston: Rice University’s Baker Institute for Public Policy (February 7, 2024). DOI: 10.25613/EP4G-KW61.

[“U.S. LNG Exports: Supply, Siting, and Bottlenecks: The U.S. Natural Gas Market in a Global Setting,”](#) prepared for the Energy Futures Initiative, *The Role of U.S. Natural Gas Exports in a Low-Carbon World* (January 2023).

[“Developing a Robust Hydrogen Market in Texas,”](#) with Shih Yu Hung, Houston: Rice University’s Baker Institute for Public Policy (February 16, 2023). DOI: 10.25613/YKKH-8K02.

[“Strategic Response Options if Russia Cuts Gas Supplies to Europe,”](#) with Gabriel Collins, Anna Mikulska and Steven Miles (Feb 11, 2022). DOI: 10.25613/32SK-5588.

[“ERCOT Froze in February 2021. What Happened? Why Did It Happen? Can It Happen Again?”](#) with Peter Hartley and Shih Yu Hung (Feb 2, 2022).

[“The Future of Houston as Energy Transitions,”](#) Baker Institute Report (May 2021). DOI: 10.25613/5A4S-SB83.

[“Expanding Carbon Capture in Texas,”](#) with Keily Miller, Baker Institute Research Paper (Jan 2021). DOI: 10.25613/9FFX-6H23.

[“BCarbon: A New Soil Carbon Storage Standard,”](#) with Jim Blackburn, Baker Institute Working Paper (Nov 2, 2020).

[“Promoting Energy Market Stability in a Transitioning World,”](#) with Hossa Almutairi and Axel Pierru, Policy Brief for T20 Solutions (Oct 2020).

[“Refreshing Global Energy Security Policy and Infrastructure for the Energy Transition,”](#) with Mark Finley, Morgan Bazilian and Steve Griffiths, Policy Brief for T20 Solutions (Oct 2020).

[“Carbon Capture in Texas: Comparative Advantage in a Low Carbon Portfolio,”](#) with Keily Miller, Baker Institute Research Paper (Jun 2020). DOI: 10.25613/9ffx-6h23.

[“Price War and Pandemic: The Oil Market Reaction,”](#) with Jim Krane and Mark Finley, Baker Institute Research Paper (Apr 2020). DOI: 10.25613/d772-t130.

[“The Role of Foreign Direct Investment in Resource-Rich Regions: Research Protocol and Executive Summary,”](#) with Keily Miller, Baker Institute Report from the working paper series on “The Role of Foreign Direct Investment in Resource-Rich Regions” (Feb 2020). DOI: 10.25613/MW6M-8T26.

[“Mercantilism’s Groundhog Day: The US-China Trade War and Some Regional Energy Market Implications,”](#) with Ted Temzelides and Woongtae Chung, Baker Institute Research Paper (Feb 2020). DOI: 10.25613/nkkj-9b05.

[“Economic Assessment of Biochar Benefits,”](#) with Caroline Masiello, Kyriacos Zygourakis, Christian Davis and Ghasideh Pourhashem, Shell Center for Sustainability (Sep 2017).

[“Confronting Climate Change: Policies and Opportunities,”](#) with Regina Buono and Shih Yu Hung, Baker Institute Conference Report as part of the French Ameri-Can Climate Talks (Feb 2016).

[“The Macroeconomic Impact of Increasing U.S. LNG Exports,”](#) with Adrian Cooper, Michael Kleiman and Scott Livermore, U.S. Department of Energy (Dec 2015).

[“Review of Sector and Regional Trends in U.S. Electricity Markets. Focus on Natural Gas,”](#) with Jeffrey Logan and William C. Boyd, in *Natural Gas and the Evolving U.S. Power Sector*, Technical Report, NREL/TP-6A50-64652 (October 2015). DOI: 10.2172/1226162.

[“To Lift or Not to Lift? The U.S. Crude Oil Export Ban: Implications for Price and Energy Security,”](#) Baker Institute Research Paper (Mar 2015). DOI: 10.25613/1YWV-7Q35.

[“Exploring the Role of Natural Gas in U.S. Trucking,”](#) with Amy Myers Jaffe, Rosa Dominguez-Faus, Allen Lee, Nathan Parker, Daniel Scheitrum, Andrew Burke, Hengbing Zhao and Yueyue Fan. University of California, Davis. Institute of Transportation Studies Research Report, No. UCD-ITS-RR-15-05 (Feb 2015).

[“North American Resources and Natural Gas Supply to the State of California,”](#) University of California, Davis. Institute of Transportation Studies Research Report, No. UCD-ITS-RR-15-06 (Feb 2015).

[“The Market Impacts of New Natural Gas-Directed Policies in the United States,”](#) with Peter Hartley, Baker Institute Research Paper, sponsored by Alfred P. Sloan Foundation (Feb 2015).

[“The Land of Opportunity? Policy, Constraints and Energy Security in North America,”](#) Baker Institute Report, sponsored by Goldman Sachs (Jun 2014). DOI: 10.25613/3263-A413.

[“HVDC Transmission and Solar Power in the US Southwest,”](#) with Peter Hartley, Baker Institute Working Paper (2014).

[“Natural Gas Price in Asia: What to Expect and What it Means,”](#) Report commissioned by the Non-proliferation Education Center (Feb 2014).

[“Speculation, Fundamentals, and the Price of Crude Oil,”](#) Baker Institute Research Paper (Aug 2013).

[“New Dynamics of the U.S. Natural Gas Market,”](#) Contributing author, Bipartisan Policy Commission (May 2013).

[“U.S. LNG Exports: Truth and Consequence,”](#) Baker Institute Research Paper (Aug 2012). DOI: 10.25613/X7MS-RN47.

[“Vehicle Stocks in China: Consequences for Oil Demand,”](#) with Ron Soligo and James Coan, Baker Institute Research Paper (Nov 2011).

[“Quantitative Analysis of Scenarios for Chinese Domestic Unconventional Natural Gas Resources and Their Role in Global LNG Markets,”](#) with Peter Hartley, Baker Institute Research Paper (Nov 2011).

[“The Status of World Oil Reserves: Conventional and Unconventional Resources in the Future Supply Mix,”](#) with Ron Soligo, Baker Institute Research Paper sponsored by the Emirates Center for Strategic Studies and Research (Nov 2011).

[“Prudent Development of North American Oil and Gas Resources,”](#) Contributing Author, Macroeconomic/Data & Studies Subgroups, National Petroleum Council (2011).

[“Shale Gas and U.S. National Security,”](#) with Peter Hartley and Amy Myers Jaffe, Baker Institute Research Paper sponsored by the US Department of Energy Office of International Policy and Affairs (Jul 2011). DOI: 10.25611/78DG-BF12

[“The Revenue Efficiency of Pemex: A Comparative Approach,”](#) with Peter Hartley, Baker Institute Research Paper (Apr 2011). DOI: 10.25611/C4A0-ER95.

[“Scenarios for Oil Supply, Demand and Net Exports for Mexico,”](#) with Ron Soligo, Baker Institute Research Paper (Apr 2011). DOI: 10.25611/0RP5-PQ94.

[“Energy Market Consequences of Emerging Renewable Energy and Carbon Dioxide Abatement Policies in the United States,”](#) with Peter Hartley, Baker Institute Research Paper (Sep 2010).

- [“Innovation, Renewable Energy, and Macroeconomic Growth,”](#) with Peter Hartley, Ted Temzelides and Xinya Zhang, Baker Institute Research Paper (Sep 2010).
- [“LNG, Globalization, and Price Volatility: Understanding the Paradigm Shift,”](#) prepared for the American Clean Skies Foundation and the National Council on Energy Policy (June 2010).
- [“Fundamentals of a Sustainable U.S. Biofuels Policy,”](#) with Pedro Alvarez, Joel Burken, James Coan, Marcelo E. Dias de Oliveira, Rosa Dominguez-Faus, Diego E. Gomez, Amy Myers Jaffe, Susan E. Powers, Ronald Soligo and Lauren Smulcer, Baker Institute Research Paper (Jan 2010).
- [“Who’s in the Oil Futures Market and How has it Changed?”](#) with Amy Myers Jaffe, Baker Institute Research Paper (Aug 2009).
- [“Scenarios for Russian Natural Gas Exports: The Role of Domestic Investment, the Caspian, and LNG”](#) with Peter Hartley, Baker Institute Research Paper (May 2009). DOI: 10.25613/AZ4B-Y586.
- [“Energy Security in a Context of Hyper-Social Mobilization: Insights from Bolivia,”](#) with David Mares and Peter Hartley, Baker Institute Research Paper (May 2008).
- [“U.S. Energy Policy and Transportation,”](#) with Amy Myers Jaffe, Baker Institute Research Paper (May 2008).
- [“Climate policy and energy security: two sides of the same coin?”](#) with Peter Hartley, Baker Institute Research Paper (May 2008).
- [“Iran, Energy and Geopolitics,”](#) with Daniel Brumberg, Jareer Elass and Amy Myers Jaffe, Baker Institute Research Paper (May 2008). DOI: 10.25613/XWM1-EP52.
- [“The Future of Russian Natural Gas Exports,”](#) with Peter Hartley, Baker Institute Research Paper (May 2008). DOI: 10.25613/4ATT-EK98.
- [“Facing the Hard Truths,”](#) Contributing Author, LNG Subgroup, National Petroleum Council (2007).
- [“Electricity Sector Demand for Natural Gas in the United States,”](#) with Peter Hartley and Jennifer Rosthal, Baker Institute Research Paper (Nov 2007).
- [“International Influences on the Link between U.S. Crude Oil and Natural Gas Prices,”](#) with Peter Hartley and Amy Jaffe, Baker Institute Research Paper (Nov 2007).
- [“Western Integrated Energy Policy Report,”](#) Contributing author, California Energy Commission (2005).
- [“Energy and Natural Gas in Northeast Asia: Options for the Future,”](#) prepared for the SIIS conference *Energy Security: Options for US-China-Middle East Relations* (Jul 2005).
- [“Political and Economic Influences on the Future World Market for Natural Gas,”](#) with Peter R. Hartley, Baker Institute Research Paper, Energy Forum study “Energy Security: Implications for U.S.-China-Middle East Relations,” (March 2005).
- [“The Baker Institute World Gas Trade Model,”](#) with Peter R. Hartley, Baker Institute Research Paper, Energy Forum study “Energy Security: Implications for U.S.-China-Middle East Relations” (March 2005).
- [“Russian Natural Gas Supply: Some Implications for Japan,”](#) with Peter Hartley, Baker Institute Research Paper (Oct 2004).
- [“The Role of Nuclear Power in Enhancing Japan’s Energy Security,”](#) with Peter Hartley, Baker Institute Research Paper (Sep 2004). DOI: 10.25613/WWF5-8Q89.
- [“Balancing Natural Gas Policy,”](#) Lead modeler and contributing author, National Petroleum Council, Modeling Subgroup of the Supply Task group (2003).

Other Articles

- “US bipartisanship and regional divergence,” Transition Strategies in *PE Outlook 2022: Next Directions in the Evolving Energy Trajectory*, [Petroleum Economist](#), p. 42-43 (Dec 2021).
- “Today vs Tomorrow, as a market transitions,” with Jim Krane and Mark Finley, [Upstream](#) (Dec 2021).
- “Energy Transitions and Carbon Neutrality by 2050?” [Energy Economics](#), *Special Issue*, The Institute of Energy Economics Japan, p. 3-7 (2021).

- "A U.S. Perspective: The Potential of Hydrogen Rests in its Diversity," [Oxford Energy Forum](#), Oxford Institute for Energy Studies, Issue 127 (May 2021), p. 52-55.
- "Decarbonization by 2050: Looking Back to Look Ahead," [Energy Economics](#), *Special Issue*, The Institute of Energy Economics Japan (Dec 2020).
- "Energy Transitions, COVID-19 and World of Uncertainty," [Oxford Energy Forum](#), Oxford Institute for Energy Studies, Issue 123 (July 2020), p. 63-66.
- "Climate and Energy Discourse in the US: What is the Path Forward?" [Energy Economics](#), *Special Issue*, The Institute of Energy Economics Japan (Dec 2019).
- "Energy Transitions and the Shifting Sands of Geopolitics," [Energy Economics](#), *Special Issue*, The Institute of Energy Economics Japan (Dec 2018).
- "Trade and Energy Under Trump," [Energy Economics](#), *Special Issue*, The Institute of Energy Economics Japan (Dec 2017).
- "[Well Productivity Analysis of the Bakken Shale Play](#)," with Emilian Vankov, Svetlana Ikonnikova, Gurcan Gulen, *Unconventional Resources Technology Conference* (July 2017). DOI: 10.15530/URTEC-2017-2671321.
- "The Shale Revolution and Its Implications for the World Energy Market," [Energy Economics](#), *The 50th Anniversary Special Issue*, The Institute of Energy Economics Japan (June 2016).
- "US Shale: Ever Onwards," *Petroleum Economist Outlook 2016*, [Petroleum Economist](#) (Dec 2015).
- "[China's Energy Hedging Strategy: Less Than Meets the Eye for Russian Gas Pipelines](#)," with Amy M Jaffe and Meghan O'Sullivan, *The National Bureau of Asian Research* (Feb 9, 2015).
- "Deepwater activity will drive US offshore production," [Offshore Magazine](#) (Jan 2014).
- "[Barnett Study Develops Full-Field Reserves, Production Forecast – Part 2 of 2](#)," with John Browning, Scott Tinker, Svetlana Ikonnikova, Gurcan Gulen, Eric Potter, Qilong Fu, Susan Horvath, Tad Patzek, Frank Male, William Fisher, and Forrest Roberts, *Oil and Gas Journal* (Sep 2, 2013).
- "[Barnett Study Develops Decline Analysis, Geologic Parameters for Reserves, Production Forecast – Part 1 of 2](#)," with John Browning, Scott Tinker, Svetlana Ikonnikova, Gurcan Gulen, Eric Potter, Qilong Fu, Susan Horvath, Tad Patzek, Frank Male, William Fisher, and Forrest Roberts, *Oil and Gas Journal* (Aug 5, 2013).
- "[The Status of World Oil Reserves: Conventional and Unconventional Resources in the Future Supply Mix](#)," with Ron Soligo and Amy Myers Jaffe, Rice University's Baker Institute for Public Policy (Oct 2011).
- "The Status of World Oil Reserves and Implications for the Gulf" with Ron Soligo and Amy Myers Jaffe, [The Emirates Occasional Papers 78](#) (Apr 2011).
- "[Impact of Shale Gas Development on Global Gas Markets](#)," in *Natural Gas and Electricity*, 27 (9), 22-28 (April 2011). DOI: 10.1002/gas.10116.
- "Potential Worldwide Effects of Shale Gas," in [Energy Studies Institute Bulletin on Energy Trends and Development, Vol. 4, Issue 2](#) (July 2011).
- "Recent Developments in the North American Natural Gas Market," *Diamond Gas Report*, No. 904 (Feb 2009).
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Book Chapters

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[“Energy, Infrastructure, and Politics in Europe,”](#) with Miaomiao Rimmer, Shih Yu Hung, and Matt Drwenski.

[“Energy’s Balancing Act,”](#) with Miaomiao Rimmer.

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[“Why the Middle East Oil Shock Is Raising Gas Prices,”](#) [Baker Briefing/The Energy Forum](#) (May 14, 2026).

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[“How tariffs could affect Houston,”](#) [Houston Matters](#) (Feb 4, 2025).

[“Minerals and Materials Challenges for Our Energy Future,”](#) [The Energy Forum](#) (Oct 29, 2024).

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"The Future of Fuels," [Baker Briefing](#) (May 13, 2024).
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"In The Oil Patch: Episode 418 – Energy 360," [Energy Mixx](#), [In the Oil Patch](#) (Dec 8, 2023).
"Is Texas the Next Hydrogen Hub?" [Baker Briefing](#) (Apr 20, 2023).
"Diving into the Texas Grid Collapse," [Grid Talk](#) (Mar 16, 2021).
"Energy Transitions," [Energy in Transition Podcast](#) (Nov 10, 2020).
"Energy Transition and Regional Comparative Advantages," [Insight Out Horizons](#) (Oct 28, 2020).
"Pandemic, Price War and the World Petroleum Market," [Policy Matters](#) (Apr 8, 2020).
"In The Oil Patch: Episode 184," [Energy Mixx](#), [In the Oil Patch](#) (Dec 8, 2018).

Conference and Workshop Reports

["Resource Adequacy in ERCOT: How Long-term Market Design Reforms Could Enhance Reliability,"](#) Baker Institute Conference Report (Dec 2022).
["Houston Energy Dialogues 2022,"](#) Baker Institute Conference Report (Dec 2022).
["A New Shale Renaissance? Summary of Workshop Proceedings,"](#) Baker Institute Conference Report (Dec 2022).
["Houston Energy Dialogues: Executive Summary,"](#) Baker Institute Conference Report (Apr 2022).
["Houston Energy Dialogues 2020,"](#) Baker Institute Conference Report (Jun 2021).
["Houston Energy Dialogues 2019,"](#) Baker Institute Conference Report (Feb 2020).
["Houston Energy Dialogues 2018,"](#) Baker Institute Conference Report (Aug 2018).
["Energy and Economic Diversification Policy Roundtable,"](#) with Jim Krane, Francisco Monaldi, Kristian Coates Ulrichsen and Gabriel Collins, Baker Institute Study (Sep 2017).
["Houston Energy Dialogues 2017,"](#) Baker Institute Conference Report (Jun 2017).
["From the 'What?' to the 'How?' in the Water-Energy Nexus,"](#) with Regina Buono and Shih Yu Hung, Baker Institute Conference Report (Jul 2016).
["Summary of the 2014-15 Climate Lecture Series,"](#) with Regina Buono and Anna Mikulska, Baker Institute Report summarizing a series of lectures delivered at the Baker Institute on Climate Science and Policy (Sep 2015).
["The Shale Revolution: What Do We Know and Where are We Going? A Conference Report,"](#) Baker Institute Conference Report, sponsored by the Alfred P. Sloan Foundation (Jan 2015).

Testimony

Testimony, Texas Senate Committee on Business and Commerce, ["Long-Term Reliability in ERCOT: Some Critical Issues to Consider"](#) (Jun 12, 2024).
Testimony, U.S. Senate Committee on Energy and Natural Resources, ["Use of Energy as a Tool & Weapon"](#) (Mar 11, 2022).
Testimony, Texas Railroad Commission, Hearing on Prorationing, ["The Best and Worst of Times Each Require Competitive Resolve for the Oil and Gas Industry"](#) prepared with Mark Finley (Apr 8, 2020).
Testimony, U.S. Senate Committee on Energy and Natural Resources, ["Electricity and a Changing Climate"](#) (Mar 5, 2019).
Testimony, U.S. House of Representatives Committee of Foreign Affairs, Subcommittee of Terrorism, Nonproliferation and Trade, ["Geopolitics of U.S. Oil and Gas Competitiveness"](#) (May 22, 2018).
Testimony, U.S. Senate Committee Energy and Natural Resources, ["The Evolution of Energy Infrastructure in the United States and How Lessons from the Past Can Inform the Future"](#) (Feb 8, 2018).
Testimony, U.S. House of Representatives Committee on Small Business, ["U.S. Crude Oil Exports"](#) (Jun 17, 2015).

Testimony, U.S. House of Representatives Committee of Foreign Affairs, Subcommittee of Terrorism, Nonproliferation and Trade, "[U.S. Crude Oil Exports](#)" (Apr 2, 2014).

Testimony, U.S. Senate Committee Energy and Natural Resources, "[Opportunities for U.S. Natural Gas](#)" (Feb 12, 2013).

Testimony, U.S. Senate Committee Energy and Natural Resources, "[The Prospect of LNG Exports from the United States](#)" (Nov 8, 2011).

Selected Speaking and Conference Organization Activities

IAEE/AEA Session Organizer and Chair, 2012-2017

IAEE International Conference, Special Subject Matter Workshop Organizer, 2013-2016

Various Board of Directors/Executive Committee Presentations – Accenture, Air Liquide, Baker Botts, Baker Hughes, BASF, BHP, Chevron, Chevron Phillips, CoBank, Direct Energy, EDP Renewables, ENGIE, EP Energy, Equinor, E&Y Energy, GDF Suez, GE, GenOn, Haddington Ventures, Linn Energy, Marathon, Methanex, Murphy Oil, NGS, Noble, Oceaneering, Phillips 66, Plains, PWC, Rice Management Company, Saudi Aramco, SLB, The Energy and Minerals Group, Trinity Industries, VAALCo, Yetter Coleman LLP

Over 900 speaking engagements from 2006-2026, including keynote addresses and panel discussions at venues such as AEA, IAEE, OTC, Gas Tech, METI LNG Producer-Consumer Conference, CERAWEEK, FLAME, OPEC, NAPE, NABE, WPC, WGLC, Goldman Sachs, URTEC, Dallas Federal Reserve, AAPG, Rio Oil and Gas, WGC, GCPA, and more.

University invited lectures from 2006-2026 at Boise State, Curtin University, Duke, Georgia Tech, Jacobs University, Louisiana State University, Rice University-Jones Graduate School of Business, Stanford University, Tulane University, Penn State University, University of Houston, Union College, University of Calgary, University of California-Davis, University of Colorado-Denver, University of Oklahoma, University of Texas-Bureau of Economic Geology, University of Texas-Hildebrand School of Petroleum Engineering, University of Tokyo, University of West Australia, USC, Washington & Jefferson College.

Consulting

All consulting is related to modeling energy markets or advising on published works and modeling frameworks – Chevron Corporation, California Energy Commission, US Department of Energy, Bipartisan Policy Commission, US Department of Justice, Congressional Budget Office, Non-Proliferation Education Center

Teaching

Energy Economics I, Energy Economics II, Economics and Policy of Energy Transitions, Economics of the Energy Industries, Macroeconomic Theory, Principles of Macroeconomics, Mathematical Economics

Senior Independent Research (57 Thesis Submissions)

Doctoral Dissertations (39 Thesis Committees)

Media

Various television and radio appearances.

Interviews for BBC, Bloomberg, New York Times, Wall Street Journal, Forbes, Oil and Gas Investor, USA Today, Minneapolis Star Tribune, San Francisco Chronicle, Congressional Quarterly, Financial Times, Fortune, Hard Assets Investors online, BusinessWeek, Wirtschaftswoche, Platts Gas Daily, Platts Oil Daily, Kallanish Energy, Natural Gas Intelligence Weekly, Time Magazine, Boston Globe, Dallas Morning News, Times-Picayune, Detroit Free Press, Houston Chronicle, San Antonio Express, Politico, E&E News, and others.