VIJAY MODI

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Personal Data: Citizenship: United States

Education:

CORNELL UNIVERSITY
Ph.D. in Mechanical Engineering, 1984

INDIAN INSTITUTE OF TECHNOLOGY (Mumbai, India)
B. Tech. in Mechanical Engineering, 1978

Positions Held:

Department of Mechanical Engineering
COLUMBIA UNIVERSITY
Professor (2001-)
Department Chair (2002-2005)
Associate Professor (1993 - 2000)
Assistant Professor (1986 -1992)

The Earth Institute
COLUMBIA UNIVERSITY
Director, Quadracci Sustainable Engineering Lab (2007-)

Gas Turbine Laboratory
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Postdoctoral Associate, 1985-1986

Mechanical and Aerospace Engineering
CORNELL UNIVERSITY
Visiting Assistant Professor, 1984 (Fall)

Prof. **Vijay Modi**'s current areas of research interest fall broadly under two themes. Firstly: decarbonization of the energy system, electrification of heat/transport), digitization, interaction of the grid or a local micro-grid with buildings/storage/vehicles/HVAC. Much of this effort is built through modeling tools that aim to replicate the key features of the supply, demand, transmission, regulatory and market systems. Secondly: energy access, energy resource and infrastructure planning for access and renewable integration, demand estimation and role of novel payment systems in breaking barriers to upfront costs. Much of this effort is aimed at analysis and field experiments that aid cost-effective access. His laboratory, the **Quadracci Sustainable Engineering Lab (QSEL)** [http://qsel.columbia.edu/], has been responsible for innovations such as a low-cost lead-acid charge/discharge circuit for solar lanterns (2005), fully digital pay-as-you-go minigrids (Sharedsolar) that have been continuously operating as pilots since 2011, battery-less PAYG smallholder irrigation systems (2013-15) and widely used tools such as "Network Planner" for making technology choices under demographic, demand and geographic variations. His laboratory has been responsible for a free open-source app called FormHub, used over a million times for assessing field data. Most recently, he has worked on larger scale electricity and natural gas networks, their long-term cost/benefits and impact on access to energy, fertilizer and industrial growth.

While his early work was on heat transfer, cooling towers, gas turbines, computational fluid dynamics and micro-electro-mechanical systems, his recent work has been on energy infrastructure design & planning; solar energy; energy efficiency in agriculture, and data analytics spanning from urban settings to remote rural settings. He is currently working closely with city and national agencies/utilities to understand how energy services can be more accessible, more efficient and cleaner. His recent project on minigrids is providing a unique understanding of consumer behavior, demand for energy, and business models for deploying energy solutions and energy efficiency.

Awards:
Distinguished Faculty Teaching Award 1996
Great Teacher Award 1997 from Society of Columbia Graduates, 1997
McMullen Fellowship, Cornell University
Silver Medal in Mechanical Engineering, Indian Institute of Technology
Outstanding Teaching Assistant Award, 1984
Tuition Scholarship, ASEE

Memberships:
Member, Council of Engineers for the Energy Transition (CEET):
An independent advisory council to the U.N. Secretary General
Member, American Society of Mechanical Engineers (current)
Member, ASHRAE (past)
Member, AAAS (past)

Reviewer
Ecological Economics
Physics of Fluids
Journal of Heat Transfer

International Journal of Heat and Mass Transfer
Numerical Heat Transfer
ASME Conferences
Journal of Applied Mechanics
National Science Foundation
Journal of Fluid Mechanics
Optimal Control Applications and Methods
Inverse Problems in Engineering

Seminar Speaker:

Princeton University, Energy Seminar, 2024
Stanford University, Energy Seminar, 2022
U.C. Berkeley, Energy Seminar, 2016
University of Texas-Austin, energy seminar, 2015
Stanford University, Global Climate & Energy Project seminar 2014
U.C. Berkeley, energy seminar 2014
Cornell University, Mechanical/Aerospace Engineering colloquium 2014
New York University, "Citizen Cyberscience" course 2012
UN Seminar on gender and energy
UNDP seminar on Mali, Brazil, Phillipines Energy Analysis
UN-DESA Seminar on Energy and MDGs
USAID-MDI Energy Management Program, 2006
Energy Week, World Bank 2005
Earth Institute, Cross-Cutting Initiatives 2004
ECA, Addis Ababa, 2003
Indian Institute of Science, 2003
School of International and Public Affairs, 2003
Syracuse University, 2002
UC Berkeley 2002
Rensselaer Polytechnic Institute, 2001
City University of New York, 2000
Cornell University, 2000
Lamont Doherty Earth Observatory, March 1999
Solar Turbines, 1998
New Jersey Institute of Technology, 1998
University of Pennsylvania, 1997
Levich Institute, City College, 1996
University of California, Berkeley, 1996
University of Connecticut, Storrs, 1996
University of California, Santa Barbara, 1996
University of California, Irvine, 1996
Indian Institute of Technology, Bombay, 1996
SUNY, Stonybrook, 1995

University of Southern California, 1995
University of California, Los Angeles, 1995
Columbia University (Chemical Engineering)
University of Tennessee at Knoxville, 1993
Pennsylvania State University, 1986
Massachusetts Institute of Technology, 1984
Hunter College, 1988
Cornell University, 1996

Professional Activities:

- Invited Speaker, Princeton University, Andlinger Center for Energy and the Environment, March 2024
- Invited Speaker, Stanford University's Carnegie Institution for Science, Stanford, CA, April 2022
- Invited Panelist, Global India conference, Princeton University (online), March 2020
- Invited Panelist, National Science Foundation (NSF) Data Science Workshop, Stony Brook University, Stony Brook, New York, January 2020
- Invited Panelist, 17 Rooms-Global Flagship meeting, Rockefeller Foundation, New York, September 2019
- Invited Panelist, Notre Dame Energy Research Symposium, South Bend, Indiana, March 2019
- Invited Panelist, Electrification and Development, Duke University/Oxfam, Washington, D.C., February 2019
- Invited Panelist, Forum on Our Energy Future, City Gardens Club, New York, January 2019
- Invited Panelist, Georgia Tech Energy Thought Leaders Symposium, Atlanta, October 2018
- Invited Panelist, Energy for Development in a Carbon Constrained World, London, U.K., August 2018
- Invited Panelist, Vienna Energy Forum, Vienna, Austria, May 2018
- Invited Panelist, Symposium on Renewable Energy Microgrids for Sustainable Development, Northwestern University, Evanston, IL, April 2018
- Invited Panelist, Advancing the 2030 Agenda: Interlinkages a Common Themes at the HLPF 2018, held at UN Headquarters, New York, January 2018
- Invited Panelist, Innovations at the Nexus of Food, Energy and Water Systems (INFEWS) Conference sponsored by National Science Foundation (NSF), Santa Barbara, January 2018
- Invited Panelist, Low-Emissions Solutions Conference (LESC), New York, September 2017
- Invited Panelist, Sustainability Day Event (part of FORMULA-E & Enel Week), United Nations, New York, July 2017
- Invited Panelist, 40th International Association for Energy Economics (IAEE) International Conference, Singapore, June 2017

- Invited Panelist, Renewable Energy Solutions for the Mediterranean (RES4MED) Forum, Rome, May 2017
- Invited Panelist, Sustainable Energy For All (SE4All) Forum, Brooklyn, April 2017
- Invited Panelist, Columbia University Energy Symposium, New York, February 2017
- Invited Panelist, Global Water Summit, New York, December 2016
- Invited Panelist, U.N. Conference of Parties 22 (COP22), Marrakech, Morocco, November 2016
- Invited Panelist, World Energy Security Forum, New York, September 2016
- Keynote Speaker, 7th ACM International Conference on Future Energy Systems, Waterloo, Canada, June 2016
- Invited Panelist, Expert Meeting on Access to Energy in Healt Care Facilities hosted by World Health Organization (WHO), Geneva, March 2015
- Invited Panelist, Energy Access Targets Working Group hosted by the Center for Global Development (CGD), Washington, D.C., March 2015
- Invited Panelist, Technical Workshop on a Quality Assurance Framework for Isolated Mini-Grids, Dar es Salaam, Tanzania, March 2015
- Keynote Speaker, ACM Symposium on Computing for Development, San Jose, CA, December 2014
- Invited Panelist, Africa Progress Panel Expert Consultation, Geneva, October 2014
- Invited Panelist, World Bank Mini-Grid Conference, Washington, D.C., October 2014
- Invited Speaker, International Energy Agency, Africa Energy Outlook, Paris, April 2014
- Invited Speaker, Asian Development Bank Forum, Nay Pyi Taw, Myanmar, March 2014
- Keynote Speaker, 'Energy Accounts: Designing the Future." Department of Energy Energy Efficient Building HUB, University of Pennsylvania, Philadelphia, February 2014.
- Invited Speaker, World Bank, Washington, D.C., September 2013
- Invited Panelist, United Nations General Assembly energy/water debate, May 2013
- Invited Speaker, Energy Days, World Bank, Washington, D.C., March 2013
- Invited Speaker, Energythink V Conference, Milan, November 2012
- Invited Speaker, State of the Planet Conference, New York, October 2012
- Invited Speaker, United Nations Rio+20 Sustainable Development Conference, Rio de Janeiro, June 2012
- Invited Speaker, UN and Sustainable Development - Progress not Perfection, New York, May 2012
- Session Moderator, Africa Economy Forum, New York, April 2012
- Invited Panelist, Environmental Summit: Sustainable Perspectives, New York, April 2012
- Moderator, Africa Economy Forum, New York, April 2012
- Invited Speaker, Global Energy and Ecology Initiatives, NewYork, April 2012
- Invited Speaker, Energy Efficiency Global Forum, Orlando, March 2012
- Invited Speaker, World Bank, Washington, D.C., February 2012
- Invited Speaker, African Development Bank, Tunis, January 2012
- Invited Speaker, World Bank, Washington, D.C., November 2011
- Invited Speaker, Energy for All Conference, Oslo, October 2011

- Invited Speaker, Phase II of the Millennium Villages Project luncheon at the United Nations, New York, October 2011
- Invited Member, United Nations Technical Group for Secretary General's High Level Group on Sustainable Energy for All, launched in New York, September 2011
- Invited Speaker, Vienna Energy Forum, Vienna, June 2011
- Invited Speaker, United Nations Social Innovation Summit, New York, June 2011
- Invited Speaker, Columbia University, 17th Annual International Sustainable Development Research Conference, New York, May 2011
- Invited Speaker, Columbia University, "ECO:nomics – The Present and Future Directions of the Green Economy," New York, April 2011
- Invited Speaker, Mediterranean Climate Change Initiative, Athens, Greece, October 2010
- Invited Speaker, Columbia University, "Revitalizing the Climate Debate," New York, October 2010
- Invited Speaker, National Academies, "Innovation in Computing and Information Technology for Sustainability Workshop," Washington, D.C., May 2010
- Invited Speaker, U.N. Foundation, "Scaling-Up Clean Cooking Solutions in the Developing World: Forging a Consensus on Next Steps," Washington, D.C., March 2010
- Invited Speaker, IIASA Executive Committee meeting on Energy Access, Vienna, Austria, November 2009
- Invited Speaker, ASEAN-U.S. Next-Generation Cook Stove Workshop, Bangkok, Thailand, November 2009
- Invited Speaker, Global Renewable Energy Forum, Leon, Mexico, October 2009
- Invited Speaker, World Bank conference on indoor air pollution, Washington, D.C., February 2009
- Invited Speaker and Session Chair, UNIDO conference on renewable energy in Africa, Dakar, Senegal, April 2008
- Moderator, IEA Conference on Biomass Fuels, Paris, April 2006
- Invited Speaker, Transport Division, World Bank January 2006
- Invited Speaker at Energy Week 2005, World Bank, 2005
- Invited Speaker at UNDP and UNDESA, 2005
- Invited Speaker E4D, Energy for Development Conference, Netherlands, 2005
- Invited Speaker IEA, Paris, 2004
- Invited Speaker and panelist at the Roundtable on Biomass Gasification, Bangalore, December 2003
- Invited Speaker at the NJIT Microelectronics Research Center Mini-symposium April 17, 2002
- Invited Speaker/Panelist, Share the Future-II, A Working Conference of Succeed, Gateway and Foundation Coalitions, Clemson University, March 18-20, 2001
- Invited Speaker, National Educators Workshop, Dayton, Nov 2000
- Invited Keynote Speaker, Fourth International ASHMT/ASME Heat and Mass Transfer Conference, January 12-15, 2000

- Invited Speaker at the Combined Heat and Power Technology Forum, NYSERDA and DOE, Hofstra University, New York, March 1999
- Co-Organizer and Panelist, Decentralized Energy Alternatives Symposium, Columbia University, March 15-17, 1999
- Invited Panel Speaker at Symposium on "Computer Programs for Heat Exchanger Design" held at the 26th National Heat Transfer Conference, Philadelphia, August 1989
- Invited Speaker at the Third International Conference on Inverse Design, Washington D.C., October 1991
- Attended ASME Professional Course, "Experimental Methods in Heat Transfer", National Heat Transfer Conference, Philadelphia, August 1989
- Attended ASEE Summer Institute, "Laser and Optics for applications" Massachusetts Institute of Technology, July 1989
- Co-organizer, Workshop on Electronic Cooling held at Columbia University, New York, April 1987

Service:

Department of Mechanical Engineering:
1. Executive Committee member (2005-)
2. Graduate Committee member (2005-)

Earth Institute/Climate School:
1. Practice Committee member (2012-2017)
2. Education Committee member (2017-)

New Courses Created & Taught:

ME 4210	Energy Infrastructure Planning
ME 6102	Computational Heat Transfer and Fluid Mechanics
ME 6103	Experimental Thermo-fluid Sciences
ME 4302	Numerical Methods for Chemical/Thermal Systems
ME 4211	Energy: Sources and Conversion
ME 4212	Microelectromechanical Systems
IA U8103	SIPA Energy Wkshp–Int'l Energy Mgmt/Policy w/D.Nissen 2004, Mali, Phillipines, Brazil 2005, Nepal, Dominican Republic, Kenya 2006, Senegal

Other Courses Taught:

ME 6310	Heat Conduction
ME 6311	Heat Convection
ME 3301	Thermodynamics

ME 3311	Heat Transfer
ME 3018	ME Junior Laboratory
ME 3028	ME Senior Laboratory
ME 3508	Instrumentation Laboratory

Doctoral Students: Hayri Cabuk (1987-1991)
Richard Quadracci, (1990-1993)
Jianchun Huan (1991-1994)
Jian-Hong Zhang (1993-1996)
Ahmet Shehata (1994-1999)
Qian Chen (1995-2000)
Dulyachot Cholaseuk (1997-2001)
Edmundo Nunez (1997- 2001)
Mingyong Chen (1998-2001)
Jiang Zhe (1998-2002)
Songbae Hong (1999-2003)
Dean Madroukas (2001-2005)
Matthew McCarthy (2002-2006)
Lily Parshall (2006-2009)
Matthew Basinger (2005-2010)
Andrew O'Grady (2005-2011)
Panagiotis Kotsidas (2007-2012)
Aly Sanoh (2006-2012)
Bianca Howard (2009-2016)
Selin Kocaman (2008-2014)
Michael Waite (2011- 2016)
Belinda Archibong (2012-2014)
Carlos Abad Lopez (2013-2015)
Shengxi Max Yuan (2013-2019)
Terence Conlon (2016-2023)
Sally Simone Fobi Nsutezo (2016-2022)
Noah Rauschkolb (2016-2023)
Ibraheam Ali Al Aali (2017-2023)
Yuezi Wu (2020 -)
Yinbo Hu (2021 -)
Hasan Siddiqui (2021 -)
Joel Mugyenyi (2022 -)
Vongaishe Mutatu (2023 -)
Vlad Pyltsov (2023 -)

Masters Thesis Students:
Michael Waite (2005-2006)
Hildigunnur Jonsdottir (2009-2010)

Jonathan Thompson (2010)
Justin Elszasz (2011)
Levi Kingery (2011)
Belinda Archibong (2011-2012)
Poojan Parekh (2017-2018)
Necdet Kaan Karagulle (2018)

Postdoctoral Associates:

Hayri Cabuk (1991-1993)
Tamer Wasfy (1994 -1995)
Stephen Pothier (1998- 1999)
Norbert Mueller (2000-2001)
Jessika Trancik (2003- 2005)
Susan Doll (2005-2007)
Jiehua Chen (2008-2011)
Matt Basinger (2010-2011)
Daniel Soto (2010-2012)
Jonathan Demierre (2013-2015)
Francisco Sebastian Rodriguez-Sanchez (2014-2015)
Elliot Cohen (2014-2015)
Hernan Figueroa (2015-2016)
Michael Waite (2016-2022)
Anna Katharina von Krauland (2023 -2025)

Modi Ph.D. committee service for other recent students:

Josh Browne (CU: Mech. Eng.), January 2016
Jorge Izar (Carnegie Mellon), April 2021
W. Michael Eull (CU: Electrical Eng.), July 2021
Ian Stewart (CU: Applied Physics), July 2021
Raimundo Atal (SIPA), July 2021
Xueting “Sherry” Wang (SIPA), September 2021
Rodger Cornell (CU: Mech. Eng.), June 2022
Abhishek Sivaram (CU: Chem.Eng.), October 2022
Yash Amonkar (CU: EEE), April 2023
Mark Barbet (CU: Mech. Eng.), May 2023
Nik Zheng (CU:EEE), December 2024

Books

Vijay Modi, "Too Cheap to Meter: The Promise of Unstored Solar Power." In Breakthrough: The Promise of Frontier Technologies for Sustainable Development, edited by Homi Kharas, John W. McArthur, and Izumi Ohno (Washington, DC: Brookings Institution Press), pp. 63–76, 2021.

Vijay Modi, S. McDade, D. Lallement and J. Saghir. Energy Services for the Millennium Development Goals, the Millennium Project, ESMAP, World Bank, and the UNDP. (Also translated into French), 2006

and Seminal Reports

Reports (* = students/employees of Vijay Modi)

Yinbo Hu*, Yuezi Wu* and **Vijay Modi**. Potential options for Paraguay's electric system to meet its future energy and power needs: observations from experience and a modelling exercise. New York: Columbia Center on Sustainable Investment (CCSI), September 2021

Michael Waite* and **Vijay Modi**. Roles of Electrification and a Cleaner Electric Grid in Achieving Deep Emission Reductions from Space Heating in the U.S., July 2020, https://qsel.columbia.edu/assets/uploads/blog/2020/publications/achieving-deep-emission-reductions-from-space-heating-in-the-us.pdf

Michael Waite* and **Vijay Modi**. How Do We Heat Our Homes in the U.S.? And What Does It Mean for Greenhouse Gas Emissions?, May 2020, https://qsel.columbia.edu/assets/uploads/blog/2020/publications/heating-our-homes.pdf

Vijay Modi, Jack Bott*, Simone Fobi Nsutezo*, Roberto Gabriel Aiello, Michelle Carvalho Metanias Hallack and Carolina Aclan. How Information and Communications Technology (ICT) is Poised to Transform the Delivery of Energy Services. Inter-American Development Bank (IDB), https://publications.iadb.org/handle/11319/8785, 2017

Vijay Modi, Edwin Adkins*, Jonathan Carbajal*, Shaky Sherpa* and Naichen Zhao*. Liberia Power Sector Capacity Building and Energy Master Planning Final Report, Phase 4: National Electrification Master Plan, http://qsel.columbia.edu/assets/uploads/blog/2013/09/LiberiaEnergySectorReform_Phase4Report-Final_2013-08.pdf, August 2013

D.P. van Vuuren, N. Nakicenovic, K. Riahi, Albert Brew-Hammond, Dean M. Kammen, **Vijay Modi**, M. Nilsson and K. R. Smith. An Energy Vision for a Planet Under Pressure, Rio+20 Policy Brief #8. www.planetunderpressure2012.net, 2012

Vijay Modi, Edwin Adkins*, Kate K. Freeman*, Hisham Fouad*, Lee F. Konstanty*, Shaky Sherpa*, Joaquin Aviles*, Peter Koinei, Jonathan Thompson* and Roxana Cosmaciuc*. Infrastructure from the Bottom Up: An Overview and Assessment of the Millennium Village Project Energy and Infrastructure Sector After Five Years. Columbia Earth Institute,

http://qsel.columbia.edu/assets/uploads/blog/2012/06/Infrastructure_and_Energy_Report_WEB.pdf, 2011

Morgan Bazilian, P. Nussbaumer, A. Cabraal, R. Centurelli, R. Detchon, D. Gielen, H. Rogner, M. Howells, H. McMahon, **Vijay Modi**, N. Nakicenovic, B. O'Gallachoir, M. Radka, K. Rijal, Minoru Takada and F. Ziegler. Measuring Energy Access: Supporting a Global Target. Columbia Earth Institute Working Paper, May 2010

Lily Parshall*, Dana Pillai*, Shashank Mohan*, Aly Sanoh* and **Vijay Modi**. National Electrification Coverage Planning: Investment Costing Estimation Model - Kenya Final Report to the World Bank. The Energy Group, Columbia Earth Institute with input from the Kenya Power and Lighting Company (KPLC), November 2007

Lily Parshall*, Dana Pillai*, Shashank Mohan*, Aly Sanoh* and **Vijay Modi**. Costing for National Electricity Interventions to Increase Access to Energy, Health Services, and Education - Senegal Final Report to the World Bank. The Agence Sénégalaise d'Electrification Rurale (ASER) and the Energy Group, Columbia Earth Institute, August 2007

Journal Publications

(* = students/employees of Vijay Modi)

1. Joel Mugyenyi*, Bob Muhwezi, Simone Fobi*, Civian Massa, Jay Taneja, Nathaniel J Williams and Vijay Modi. Post-connection electricity demand and pricing in newly electrified households: Insights from a large-scale dataset in Rwanda. Energy Policy, 198(1), article 114449, March 2025. https://doi.org/10.1016/j.enpol.2024.114449
2. Joel Mugyenyi*, B Muhwezi, Simone Fobi*, Civian Massa, Vijay Modi, Nathan J Williams, and Jay Taneja. Rwanda's path to universal electricity access: Consumption trends, tariff impact, and challenges ahead. Tariff Impact, and Challenges Ahead, 2024.
3. L Masselus, J Ankel-Peters, Gabriel Gonzalez Sutil*, Vijay Modi, Joel Mugyenyi*, A Munyehirwe, Nathan Williams and M Sievert. 10 years after: Long-term adoption of electricity in rural Rwanda. Ruhr Economic Papers; 2024. https://doi.org/10.4419/96973261
4. Yash Amonkar, James Doss-Gollin, David Farnham, **Vijay Modi** and Upmanu Lall. Differential effects of climate change on average and peak demand for heating and cooling across the contiguous United States. *Communications Earth and Environment*, 4(1), article 402, November 2023. https://doi.org/10.1038/s43247-023-01048-1
5. Yinbo Hu*, Michael Waite*, Evan Patz*, Bainan Xia, Yixing Xu, Daniel Olsen, Naveen Gopan and **Vijay Modi**. A data-driven approach for the disaggregation of building-sector heating and cooling loads from hourly utility load data. *Energy Strategy Reviews*, 49(1): article 101175, September 2023. https://doi.org/10.1016/j.esr.2023.101175

6. Yuezi Wu*, Terence Conlon*, Michael Waite* and **Vijay Modi**. The role of electrification induced peak loads and gas infrastructure constraints on decarbonization pathways in New York State. *Energy Strategy Reviews*, 44(1): article 100985, November 2022. https://doi.org/10.1016/j.esr.2022.100985
7. **Vijay Modi**. Solar for small-holder farmers made affordable through innovative co-design and financing – lessons learnt. *Solar Compass*, 3-4(1): article 100027, September 2022. https://doi.org/10.1016/j.solcom.2022.100027
8. Terence Conlon*, Michael Waite*, Yuezi Wu* and **Vijay Modi.** Assessing trade-offs among electrification and grid decarbonization in a clean energy transition: Application to New York State. *Energy*, 249(1): article 123787, June 2022. https://doi.org/10.1016/j.energy.2022.123787
9. Terence Conlon*, Christopher Small and **Vijay Modi**. A multiscale spatiotemporal approach for smallholder irrigation detection. *Frontiers in Remote Sensing: Learning with Limited Labels (3L)*, 3(1): 871942, Spring 2022. https://doi.org/10.3389/frsen.2022.871942
10. Candise L. Henry, Hadi Eshraghi, Oleg Lugovoy, Michael B. Waite*, Joseph F. DeCarolis, David J. Farnham, Tyler H. Ruggles, Rebecca A. M. Peer, Yuezi Wu*, Anderson de Queiroz, Vladimir Potashnikov, **Vijay Modi** and Ken Caldeira. Enhancing Benchmarking Efforts for Electric Sector Capacity Expansion Models. *Applied Energy*, 304(1): article: 117745, December 15, 2021. https://doi.org/10.1016/j.apenergy.2021.117745
11. Noah Rauschkolb*, Nathalie Limandibhratha, **Vijay Modi** and Ignacia Mercadal. Estimating Electricity Distribution Costs Using Historical Data. *Utilities Policy*, 73(1): article 101309, 2021. https://doi.org/10.1016/j.jup.2021.101309
12. Lechen Li*, Christoph Meinrenken, **Vijay Modi** and Patricia Culligan. Impacts of COVID-19 related stay-at-home restrictions on residential electricity use and implications for future grid stability. *Energy and Buildings*, 251(1): article 111330, November 2021. https://doi.org/10.1016/j.enbuild.2021.111330
13. Lechen Li*, Christoph Meinrenken, **Vijay Modi** and Patricia Culligan. Short-term apartment-level load forecasting using a modified neural network with selected auto-regressive features. *Applied Energy*, 287(1): article 116509, April 2021. https://doi.org/10.1016/j.apenergy.2021.116509
14. Simone Fobi*, Ayse Selin Kocaman*, Jay Tenaja and **Vijay Modi**. A Scalable Framework to Measure the Impact of Spatial Heterogeneity on Electrification. *Energy for Sustainable Development*, 60(1): 67-81, February 2021. https://doi.org/10.1016/j.esd.2020.12.005
15. Christoph Meinrenken, Sanjmeet Abrol, Gaurav Gite, Christopher Hidey, Kathleen McKeown, Ali Mehmani, **Vijay Modi**, Elsbeth Turcan, Wanlin Xie and Patricia Culligan. Residential electricity conservation in response to auto-generated, multi-featured, personalized eco-feedback designed for large scale applications with utilities. *Energy and Buildings*, 232(1): article 110652, February 2021. https://doi.org/10.1016/j.enbuild.2020.110652
16. Christoph Meinrenken, Noah Rauschkolb*, Sanjmeet Abrol, Tuhin Chakrabarty, Victor Decalf, Christopher Hidey, Kathleen McKeown, Ali Mehmani, **Vijay Modi** and Patricia

Culligan. MFRED, 10 second interval real and reactive power for 26 groups of US apartments of varying size and vintage. *Scientific Data*, 7(1): article 375, November 2020. https://www.nature.com/articles/s41597-020-00721-w

17. Michael Waite* and **Vijay Modi**. Electricity Load Implications of Space Heating Decarbonization Pathways. *Joule*, 4(2): 376-394, February 2020 https://doi.org/10.1016/j.joule.2019.11.011
18. Terence Conlon*, Michael Waite* and **Vijay Modi**. Assessing new transmission and energy storage in achieving increasing renewable generation targets in a regional grid. *Applied Energy*, 250(1): 1085-1098, September 2019 https://doi.org/10.1016/j.apenergy.2019.05.066
19. Shengxi Yuan*, Wendell Stainsby, Mo Li, Kewei Xu, Michael Waite*, Daniel Zimmerle, Richard Feiock, Anu Ramaswami and **Vijay Modi**. Future energy scenarios with distributed technology options for residential city blocks in three climate regions of the United States. *Applied Energy*, 237(1): 60-69, March 2019 https://doi.org/10.1016/j.apenergy.2019.01.048
20. Michael Waite* and **Vijay Modi**. Impact of deep wind power penetration on variability at load centers. *Applied Energy*, 235(1): 1048-1060, February 2019 https://doi.org/10.1016/j.apenergy.2018.11.021
21. Simone Fobi*, Varun Deshpande, Samson Ondiek, **Vijay Modi** and Jay Taneja. A longitudinal study of electricity consumption growth in Kenya. *Energy Policy*, 123(1): 569-578, December 2018 https://doi.org/10.1016/j.enpol.2018.08.065
22. Ayse Selin Kocaman* and **Vijay Modi**. Value of pumped hydro storage in a hybrid energy generation and allocation system. *Applied Energy*, 205(1): 1202-1215, November 2017 https://doi.org/10.1016/j.apenergy.2017.08.129
23. Shengxi Yuan*, Ayse Selin Kocaman* and **Vijay Modi**. Benefits of forecasting and energy storage in isolated grids with large wind penetration – The case of Sao Vicente. *Renewable Energy*, 105(1), 167-174, May 2017 https://doi.org/10.1016/j.renene.2016.12.061
24. Michael Waite*, Elliott Cohen*, Henri Torbey*, M. Piccirilli, Y. Tian and **Vijay Modi**. Global trends in urban electricity demands for cooling and heating. *Energy*, 127 (1), 1-17, May 2017 https://doi.org/10.1016/j.energy.2017.03.095
25. Michael Waite*, Ankita Deshmukh* and **Vijay Modi**. Experimental and analytical investigation of hydronic system retrofits in an urban high-rise mixed use building. *Energy and Buildings,* 136 (1), 173-188, February 2017 https://doi.org/10.1016/j.enbuild.2016.12.004
26. Bianca Howard*, Michael Waite* and **Vijay Modi**. Current and near-term GHG emissions factors from electricity production for New York State and New York City. *Applied Energy*, 187 (1), 255-271, February 2017 https://doi.org/10.1016/j.apenergy.2016.11.061
27. Michael Waite* and **Vijay Modi**. Modeling Wind Power Curtailment With Increased Capacity in a Regional Electricity Grid Supplying a Dense Urban Demand, *Applied Energy*, 183 (1), 299-317, December 2016 https://doi.org/10.1016/j.apenergy.2016.08.078

28. Ram Fishman, Upmanu Lall, **Vijay Modi** and Nikunj Parekh. Can Electricity Pricing Save India's Groundwater? Field Evidence from a Novel Policy Mechanism in Gujarat. *Journal of the Association of Environmental and Resource Economists*, 3 (4), 819-855, November 2016 https://doi.org/10.1086/688496
29. Radhika Iyengar, Angelique Mahal, Liya Aklilu, Annika Sweetland, Alia Karim, Haeln Shin, Balaraba Aliyu, Ji Eun Park, **Vijay Modi**, Matt Berg* and Prabhas Pokharel*. The Use of Technology for Large-scale Education Planning and Decision-making. *Information Technology for Development*, 22 (3), 525-538, 2016 https://doi.org/10.1080/02681102.2014.940267
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