U.S.-Japan Exchange Program for Green Growth Collaboration through Clean Energy Technologies

Second EXCET Workshop

September 11 & 12, 2024

169 Student Union Building

University of Tennessee, Knoxville

Zoom link: https://tennessee.zoom.us/j/2792684816

Wednesday, September 11

169 Student Union • Zoom link: https://tennessee.zoom.us/j/2792684816

8:15–9:00am	Light Breakfast, Check-in, and Networking
9:00–9:15	**Welcome,** Mingzhou Jin, ISSE Director, ISE Department Head, University of Tennessee, Knoxville **Opening Remarks**, Chancellor Donde Plowman, University of Tennessee, Knoxville **Introduction of Keynote Speakers**, Mingzhou Jin
9:15–10:05	**Challenges and Policies towards Net-Zero Emissions Energy Systems**, Hiroshi Asano, Gifu University, Central Research Institute of Electric Power Industry Changing Modeling and Simulation Tools Needed for Grid Modernization, Kevin Tomsovic, Clemson
10:05–10:30	Q & A Discussion & Coffee Break
10:30–11:45	**Panel #1: Power Systems, Resilience, and Interconnected Infrastructure, Chair: Hideo Ishii, Waseda University** • Electric Grid and Market Impact from Transportation Electrification: A Case Study of Heavy-duty Freight Electrification in the Atlanta-Chattanooga Region, Zhou Zhi, Argonne National Lab • Expectations for Microgrids: Hokkaido Blackout 2018 and Beyond, Ryoichi Hara, Hokkaido U. • Power Grid Resilience, Amin Kargarian, LSU • Toward the Realization of Carbon Neutrality: Toshiba's Technologies and Solutions, Masayuki Kosakada, Toshiba ESS • Integrated Urban Systems Design for a More Resilient and Equitable Future, Chao Fan, Clemson • Japan's Power System Reforms at a Turning Point for GX, Naoki Toda, TEPCO
11:45–Noon	Q & A Discussion
12:00–1:30pm	Group Photo, Lunch, and Poster Session in Room 377A
1:30–2:30	**Panel #2: Building Energy Efficiency & Demand Response, Chair: Yohei Yamaguchi, Osaka University** • Policy Tools for Demand Response: Monetary Incentives, Moral Suasion, and Automation, Hideki Shimada, AIST • Applying Avoided Emissions to the Built Environment, Megumi Horii, Nikken Sekkei • Impact of Building Performance Standards Policies on Peak Electric Demand for Regional Grids: A Building Stock Modeling Approach, Jeetika Malik, BLNL • Building Technologies for Sustainable Schools: Enhancing Indoor Environment Quality, Efficiency and Equity, Zhihong Pang, LSU • Low-carbon Building Envelope Materials Research at ORNL, Som Shrestha, ORNL
2:30–3:00	Q & A Discussion & Coffee Break
3:00–4:00	**Panel #3: Decarbonization, NetZero Strategies and Policy, Chair: Shinya Yoshizawa, Osaka University** • Assist Municipalities in Developing Climate Change Mitigation Plans, Yohei Yamaguchi, Osaka U. • US–Japan Cooperation in Energy, Trade and Environmental Protection for the Anthropocene, Paolo Farah, WVU • Tennessee's State Energy Office and its Impact, Molly Cripps, Director, Tennessee State Energy Office • City Sustainability Achievements and Operational Challenges, Vasu Primlani, City of Knoxville Office of Sustainability • Investment and Innovation: Celebrating Progress and Exploring Future International Partnerships, Michael Walton, Energy Transition Finance
4:00–4:15	Q & A Discussion
4:15–5:00	Walk to Engineering Research Center, CURENT for Grid Lab Tour
5:00–5:45	**Panel #4: Interactive Discussion,** Hideo Ishii
5:45–8:30	**Walk to Calhoun's on the River for Workshop Banquet** 400 Neyland Dr, Knoxville, TN 37902

Thursday, September 12

169 Student Union • Zoom link: https://tennessee.zoom.us/j/2792684816

8:00–8:30am	Light Breakfast and Networking
8:30–9:45	**Panel #5: Energy Justice & Social-Technological Integration, Chair: Chien-fei Chen, Clemson University** • Energy as a Service by On Site Power Purchase Agreement Empowers "Sanpo-yoshi", Harumi Fujii, Haru Energy (online) • Micro-climate based Urban Neighborhood Resilience and Improved Building Performance Assessment in a Warming Climate, Ulrike Passe, ISU • Incentivizing or Disincentivizing Participation in Demand Response Programs? Evidence on Customer Willingness to Enroll, Yu Wang, ISU • Learning from the Leaders: Lessons from Excellent Energy Efficiency Programs, Jasmine Mah, ACEEE • Decarbonization Efforts of an Electricity Retail Company in Japan and Issues of Electrification, Takeo Yagihashi, TEPCO • Energy Insecurity and Housing Quality: Addressing Overlapping Challenges, Will Bryan, SEEA
9:45–10:15	Q & A Discussion & Coffee Break
10:15–11:30	**Panel #6: Decarbonization Technology and Manufacture, Chair: Kevin Tomsovic, Clemson University** • U.S. Department of Energy Resources to Decarbonize Industry, Chris Price, ORNL • Recyclable Biobased Composites and Coatings for Automotive Industry, David Harper, UTK • Decarbonization through Widespread use of Inverter Heat Pump system, Ichiro Hongo, Daikin Corp. • Dynamic Pricing Control for In-Home Appliances with Nudging and Education, Takamitsu Yasukochi, Panasonic • Energy & Decarbonization Initiatives at Volkswagen Chattanooga, Michael Finley, Volkswagen US • Toward Low-Cost Hydrogen and Decarbonization with High-Efficiency Electrolyzers, Feng-Yuan Zhang
11:30–11:45	Q & A Discussion
11:45–1:00pm	Group Photo, Lunch, Networking, and Poster Award in Room 377A
1:00–2:00	**Panel #7: Electric Vehicles & Charging Infrastructure, Chair: Akihisa Kaneko, Waseda University** • Recent Development of EV Charging Technologies, Kevin Bai, UTK • Use of Smartphone Mobility Data for Estimating the Impact of Electric Vehicle Demand, Shinya Yoshizawa, Osaka University • Challenges and Expectation for Electric Vehicles Installation in Power System Operation, Akihisa Kaneko, Waseda University • Charging Station Access and Human Urban Mobility, Xinwu Qian, Rice University • Clean Fuels, Danniel Siksay, East Tennessee Clean Fuels & Drive Electric TN
2:00–2:30	Q & A Discussion & Coffee Break
2:30–4:00	**Panel #8: Next Steps: Interactive Discussion,** Mingzhou Jin
4:00–4:10	**Concluding Remark,** Brad Day, Associate Vice Chancellor for Research, UTK
4:10–4:20	**Closing Remarks,** Gretchen Neisler, Vice Provost for International Affairs, UTK
4:20–6:00	Break
6:00–8:00	**Dinner at Sunsphere, 8th Floor** 810 Clinch Ave, Knoxville, TN 37902

Workshop Speakers

Hiroshi Asano, Gifu University, Central Research Institute of Electric Power Industry

Prof. Asano received the B.Eng., M.Eng. and D.Eng.degrees in Electrical Engineering from the University of Tokyo. He is presently a professor at Gifu University, Research Advisor, the Central Research Institute of Electric Power Industry(CRIEPI) and Tokyo Institute of Technology, Cross-ministerial Strategic Innovation Promotion Program "Smart Energy Management Systems," Research Fellow, Waseda University, and Board member, Chubu Electric Power Grid Company, Incorporated. He served on Japanese government energy policy committees including the Ministry of Economy, Trade and Industry and Green Innovation Strategy. His research interests include systems analysis of demand response, smart grid, and distributed energy resources integration and power markets. Dr. Asano has been a member of CIGRE, IEEE, and IAEE, and IEEJ, and is the past president of JSER.

Will Bryan, Southeast Energy Efficiency Alliance

Will Bryan is Director of Research for the Southeast Energy Efficiency Alliance (SEEA), leading a team focused on advancing equitable energy policies through research, geospatial analysis, and storytelling. Prior to joining SEEA, Dr. Bryan taught at Georgia State University and conducted independent research as a postdoctoral fellow at Emory University. Dr. Bryan earned a Ph.D. from Penn State University, and his research and writing explore sustainable development in the U.S. His about the origins of sustainability in the South, *The Price of Permanence: Nature and Business in the New South* (University of Georgia Press, 2018), is based on his dissertation. His research and writing have also appeared in popular and peer-reviewed venues ranging from The Washington Post to Environmental History.

Chien-fei Chen, Clemson University

Dr. Chien-fei Chen is professor of sociology at the department of sociology, anthropology, and criminal justice, Clemson University. Chen's research centers on environmental sociology, energy justice and policy, and renewable energy technology adoption and community engagement. Her goals are to conduct interdisciplinary research in integrating social-technological aspects of building efficiency and sustainability, E.V. and solar adoption, power grid resilience, and energy justice for underserved communities, providing practical knowledge to academics, communities, utilities, and policymakers. Dr. Chen is involved with several international and interdisciplinary networks. She has research awards from NSF and Alfred P. Sloan Foundation, including two large scale NSF projects: "Advancing Human-Centered Sociotechnical Research to Enable Independent Mobility in People with Physical Disabilities," and "Strengthening American Infrastructure: Community-centered decision making Framework for Microgrid Deployment to Enhance Energy Justice and Power System Resilience." Dr. Chen received a 2019-2020 Fulbright U.S. and U.K. Global Scholar Awards for her energy justice work.

Molly R. Cripps, TDEC Office of Energy Programs

Molly leads teams that focus on the design and implementation of clean energy and sustainable transportation programs and projects, including those funded by the Infrastructure Investment and Jobs Act, Inflation Reduction Act, and Tennessee's allocation under the Volkswagen Diesel Settlement Environmental Mitigation Trust. She has served on the National Association of State Energy Officials (NASEO) Board of Directors since 2014 and is currently serving as the Vice-Chair of the Executive Committee. She also serves as the Co-chair of the NASEO & National Association of Regulatory Utility Commissioners Advanced Nuclear State Collaborative and supports Governor Lee's Nuclear Energy Advisory Council. Molly is a member of the Executive Committee for the Drive Electric TN Consortium and represents TDEC on the Energy Efficient Schools Council and various TVA information exchanges and working groups. Prior to joining the State in 2010, Molly spent several years practicing law in Tennessee, with a focus on compliance and municipal liability defense. She holds a B.A. in History and Political Science from the University of Tennessee and a J.D. from Vanderbilt University Law School.

Kevin Bai, University of Tennessee, Knoxville

Kevin Bai received BS and PHD degrees from the Department of Electrical Engineering of Tsinghua University in 2002 and 2007, respectively. He joined Kettering University (former General Motor Institute) as an assistant professor in 2010, the University of Tennessee, Knoxville (UTK) as associate professor in 2018, and became a full professor at UTK this year. His research interests include power electronics with motor drives, EV battery chargers, dc-dc converters and battery management systems. He is the author of two books, 150 IEEE papers, and holds 11 industrial patents. He is associate editor of SAE International Journal of Electrified Vehicles and associate editor of IEEE Transactions on Transportation Electrification.

Chao Fan, Clemson University

Chao Fan is an Assistant Professor in the School of Civil and Environmental Engineering and Earth Sciences at Clemson University. He earned his Master in Civil Engineering from the University of California, Davis in 2017 and Ph.D. from Texas A&M University in 2020. His research focuses on creating science-based solutions to address global challenges of sustainability and resilience at the nexus of human, infrastructure, and the environment in the context of a changing climate. His lab encompasses a wide spectrum of topics from adaptation science and resilience to computing and infrastructure system design. Dr. Fan and his team have published over 80 research articles and had dozens of their works featured in over 20 international news outlets. He serves as an editorial board member and a reviewer for more than 50 peer-reviewed journals and is a member of program committees for various academic conferences. He has given over 50 academic talks at research institutions globally.

Paolo Farah, West Virginia University

Paolo Davide Farah is a Full Professor of Public Administration and Public Policy at West Virginia University, Eberly College of Arts and Sciences, John D. Rockefeller IV School of Policy and Politics, since 2014. He is Coordinator of the Eberly College Interdisciplinary Research Collaborative on Global Challenges and Local Responses Initiatives and Director of the Energy Justice and Just Transition Lab at Center for Resilient Communities (CRC). Professor Farah is Founder, President and Director of gLAWcal – Global Law Initiatives for Sustainable Development. He is also an “Internationally Renowned Professor/Distinguished Professor of Law” at Beijing Foreign Studies University (BFSU), Law School, Beijing, China and a Senior Research Fellow at the Institute of International Economic Law (IIEL), Georgetown University Law Center, Washington DC, USA.

Michael Finley, Volkswagen Group of America, Chattanooga Operations

Michael is the Senior Manager for Plant Infrastructure at the Volkswagen Group of America Manufacturing Plant in Chattanooga Tennessee. His responsibilities include Facilities Operations, Environmental Management, and Construction Planning. He and his team ensure that the production facility is prepared and operating in an energy-efficient manner, support the VW Group’s “Go To Zero” strategy, and ensure that the site maintains Environmental Compliance. He has been with VW Chattanooga since 2009 and has also worked in TPM planning, MRO management, and Paint Shop planning for the company. Before joining VW, Michael worked for Toyota Motor Manufacturing Texas as a Painting Process manager, Sony Chemicals Corporation as the head of Facility Planning and Maintenance, Cooper-Standard Automotive as a Program Manager supporting injection molding and coating operations, and Hamilton Company as a Manufacturing Engineer in the field of medical devices. Michael holds a B.S. degree in Mechanical Engineering from the University of Utah in Salt Lake.

Harumi Fujii McClure, HARU Energy

Harumi Fujii McClure brings more than 25 years of executive experience in the solar energy and semiconductor industries to Haru Energy. She is promoting a new business model that provides sustainable and reliable renewable energy to communities. She has spoken at numerous PV conferences about her new business model that overcomes the gap between end users and Utilities. Harumi had started PV Energy Service company in2019 and in 2021 she acquired a couple Solar Company (EPC) in Hawaii. She previously held the position of President of Tabuchi Electric Company of America, a global solar inverter and power electronics manufacturer. Prior to Tabuchi, she was responsible for Corporate Strategy and Investor Relations at C2 Energy Capital (a Financing and Investment firm in the Solar Industry) in NY. She was also the co-founder of Smart Solar International, a solar module technology company in Japan. Additional senior positions include KLA and LasertecCorporation (semiconductor companies). Harumi holds a B.A. from Sophia University, Tokyo, Japan and an MBA from the Pepperdine President/Key Executive MBA program in California.

Ryoichi Hara, Hokkaido University

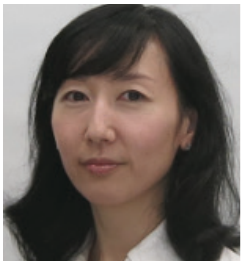
Ryoichi Hara received his Ph.D. from Hokkaido University in 2003. He served as an assistant professor at Yokohama National University from April 2003 to March 2006. Since then, he has been an associate professor at the Graduate School of Information Science and Technology, Hokkaido University. His primary research focus is on electric power system engineering, particularly on the harmonization of bulk power systems and renewable energy resources. Additionally, he has been a member of the steering committee for the International Microgrid Symposiums since 2009.

David Harper, University of Tennessee, Knoxville

David P. Harper is a tenured Professor in the Department of Forestry, Wildlife, and Fisheries; faculty in the Center for Renewable Carbon with a 100% Research appointment; and Joint Professor of Materials Science and Engineering. He has been a faculty member at UT since 2004. His research focuses on developing materials from plant-based sources that concentrate on regionally abundant sources that do not compete with food crops. His goal is to create materials that can replace or are superior to fossil or mined materials. He has worked extensively with a low-value co-product of pulp, paper making, and biofuels production, lignin, to make this goal a reality. Work in the Harper lab focuses on developing sustainable materials derived from plant materials to create an array of new commercial products, such as carbon fibers, activated carbon, carbon black, carbon quantum dots, graphitic carbon, resins, plastics, and biomedical devices.

Ichiro Hongo, Daikin Corporation

Ichiro Hongo has been an adviser at the Technology and Innovation Center of Daikin Industries since 2023. Before joining Daikin, Ichiro worked for Toshiba, Toshiba Carrier and Toshiba Carrier North America, Inc; for HVAC R&D activities as general manager, director, and president. Also, he was a Chairman of the Japan Refrigeration and Air Conditioning Association (2014-2016), steering committee member of EPEE (The European Partnership for Energy and the Environment) (2014-2016 and 2019-2023) and Executive Director of Japan Society of Refrigerating and Air Conditioning Engineers (2003-2007). Ichiro has a B.S. and M.S. degrees in Mechanical Engineering from the University of Tokyo.

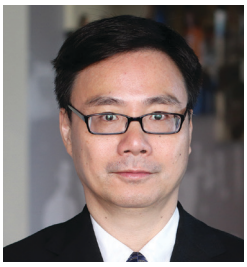


Megumi Horii, Nikken Sekkei Ltd.

Megumi Horii joined Nikken Sekkei in 2007 after she graduated the master course of Architecture in Waseda University. Nikken Sekkei is an urban planning, architectural and engineering design firm. She started her career as an electrical engineer in the firm and continued for four years until 2010, before she moved to the sustainability area and started working as a LEED consultant for Japanese clients mainly in Tokyo and Osaka as a qualified LEED AP. She was one of the starting members of Green Building Japan, a point of contact of USGBC in Japan. She now focuses on decarbonization consulting in the built environment.

Hideo Ishii, Waseda University

Hideo Ishii joined Tokyo Electric Power Company (TEPCO) in 1988. He was a visiting scientist at Massachusetts Institute of Technology from 1989 to 1991. He received Ph.D. from the University of Tokyo in 1996. From 2010, he has been engaged in some major smart grid related National projects in Japan as an organizer. He is now a Professor with Advanced Collaborative Research Organization for Smart Society (ACROSS) at Waseda University. His current activity is in the Electric Energy System, especially regarding Demand Response (DR) and integration of distributed energy resources (DER) including renewable energy. He has been leading DR standards in Japan. Since August 2020, he has been a Chair of IEC TC 8 SC 8C. Since December 2023, he has been a visiting researcher at National Institute of Advanced Industrial Science and Technology (AIST).



Mingzhou Jin, University of Tennessee

Mingzhou Jin is a John D. Tickle Professor and the department head of Industrial and Systems Engineering at the University of Tennessee, Knoxville (UT). He is also directing the Institute for a Secure and Sustainable Environment (ISSE) for UTK and the Center for Freight Transportation for Efficient & Resilient Supply Chain (FERSC), a DOT/UTC tier-1 center. His research interests include sustainability, climate change, operations research, additive and smart manufacturing, clean energy and energy efficiency, supply chain, logistics, transportation, and data analytics. His research has been well sponsored with more than $20 million in grants and contracts from a broad spectrum of federal, and local government agencies and corporations He is a fellow of the Institute of Industrial and Systems Engineers (IISE) and was IISE Regional Vice President from 2018 to 2020. Currently, he is the Editor-in-Chief for Cleaner and Circular Bioeconomy and the executive editor of the Journal of Cleaner Production.

Akihisa Kaneko, Waseda University

Akihisa Kaneko received B.E., M.E., and Ph.D. degrees in engineering from Waseda University, Tokyo, Japan, in 2016, 2018, and 2021, respectively. He is currently an Assistant Professor with the Advanced Collaborative Research Organization for Smart Society (ACROSS), Waseda University. His current research interests include the operation and control of distribution and transmission systems with renewable energy sources.

Amin Kargarian, Louisiana State University

Amin Kargarian is an associate professor in the Department of Electrical and Computer Engineering at Louisiana State University. His research spans the theory and application of optimization, machine learning, quantum computing, and social justice within cyber-physical infrastructure systems. He has authored over 90 publications and has received several awards, including an IEEE TPEC Best Paper Award and the LSU Rising Faculty Research Award. Kargarian is a recipient of an NSF CAREER Award for his work in learning-assisted decomposition and distributed optimization. He has organized a variety of research symposiums and K-12 outreach initiatives, such as the LSU Clean Energy and Sustainability Day. In recognition of his contributions to education, Kargarian has received the LSU College of Engineering Instructor Excellence Award.

Masayuki Kosakada, Toshiba Energy Systems & Solutions Corporation

Masayuki Kosakada is a Chief Fellow of Toshiba Energy Systems & Solutions Corporation. He has over 26 years of experience in the development and engineering of substation equipment and systems. Since 2013, he has been involved in technical and business development for IT-based service solution businesses. From 2014 to 2020, he was also a member of the hydrogen energy solution project. From 2017, he has been responsible for the R&D and business development of T&D systems and energy service solution business including renewable energy. Now he covers the technology and business strategy of T&D systems and energy service solutions including renewable energy. Mr. KOSAKADA is a Fellow of IEE of Japan, a Senior Member of IEEE, and a Member of CIGRE. He is a Vice Chair of the CIGRE Japan, Vice President of the Japanese Electrotechnical Committee.

Jasmine Mah, American Council for an Energy-Efficient Economy

Jasmine researches policies, programs, and funding sources that simultaneously improve human health and energy efficiency. She also cooperates with researchers across different programs, including the utilities, buildings, state policy, and local policy teams. Prior to joining ACEEE in 2021, Jasmine worked for the National Center for Sustainable Transportation. She has a Master of Science in environment and development from the University of Leeds, and a Bachelor of Science and Bachelor of Arts from UC Davis.

Jeetika Malik, Lawrence Berkeley National Laboratory

Jeetika Malik is a Research Scientist with the Building Technology and Urban Systems Division of Lawrence Berkeley National Laboratory. Her research efforts are directed toward improving climate resilience within buildings, evaluating building decarbonization approaches for effective policymaking, and exploring human factors in building decarbonization. She actively contributed to ASHRAE Technical Committee 7.10 occupant behavior in building design and operation and the related IEA EBC Annex 79. Malik has a background in architecture and building science and received her Ph.D. from the Indian Institute of Technology (IIT) Bombay, India.

Zhihong Pang, Louisana State University

Dr. Pan is currently an Assistant Professor in the Bert S. Turner Department of Construction Management at Louisiana State University. He obtained a Bachelor's Degree in Building Science from Tongji University in 2017 and a Doctorate in Mechanical Engineering from Texas A&M University in 2022. Dr. Pang's research interests focus on Building Energy Efficiency and Analysis, Intelligent Building Controls, Smart and Healthy Buildings, Grid-Interactive Efficient Buildings, and Occupant's Well-being in the Built Environment.

Ulrike Passe, Iowa State University

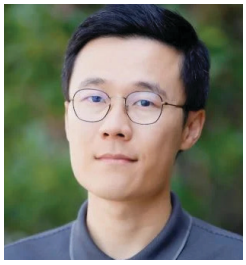
Ulrike Passe is a Professor of Architecture at Iowa State University (ISU) and serves as the Director of the ISU Center for Building Energy Research. An architect with a professional German architecture degree and license, she is an internationally recognized scholar of building science with specific emphasis on natural ventilation and on integrative sustainable design strategies. Her book, Designing Spaces for Natural Ventilation (2015), co-authored with Francine Battaglia (University of Buffalo) is used globally. Her projects include the Interlock House built for the 2009 US DOE Solar Decathlon, and the Sustainable Cities Research Group, founded 2015 at ISU to expand her research towards urban environmental modeling and is currently funded by the US National Science Foundation and the Iowa Economic Development Authority.

Christopher Price, Oak Ridge National Laboratory

Christopher Price is an R&D associate staff member in the Manufacturing Energy Efficiency Research and Analysis (MEERA) Group at Oak Ridge National Laboratory. He is a Technical Account Manager for the DOE's Better Buildings, Better Plants and Better Climate Challenge programs where he supports companies in baselining and tracking their energy consumption and carbon footprints and implementing environmental management programs. He also supports the development of numerous software tools and technical resources for industry including energy and carbon baseline tracking, renewable energy, and utility bill analysis. Chris is also involved in strategic analysis of new technologies, assessing their potential to save energy and improve productivity including in the geothermal energy sector and smart manufacturing.

Vasu Primlani, City of Knoxville Office of Sustainability

Vasu Primlani was Knoxville's Director of Sustainability by Mayor Indya Kincannon in Spring 2024. Before that, she was Metro Nashville Decarbonization Manager. Primlani has more than three decades of experience in sustainability and has received countless awards for her environmental innovation, including the EPA's Environmental Achievement Award. Her experience and creative thinking will help Knoxville meet its goal of an 80 percent reduction in greenhouse gases by 2050 by adapting to climate change in a way that is just, equitable, and helps everyday people and small business owners save money. Outside her current role, Primlani is a sustainability and diversity corporate trainer, comedian, professor, and an author.



Xinwu Qian, Rice University

Dr. Qian is an assistant professor in Civil Engineering at Rice University. Before Rice, he served as an assistant professor and Hewson Faculty Fellow at the University of Alabama from 2020 to 2024. His areas of specialization include mathematical modeling and data-driven methods for transportation problems, focusing on transportation electrification, public transportation, and shared mobility applications. He has published over 60 journal and conference papers in esteemed journals and conferences. He completed his M.S.E (2014) and Ph.D. (2018) in Civil Engineering from Purdue University, where he investigated the transmission of infectious diseases in transportation systems for his Ph.D. dissertation.

Masafumi Sekine, Nikken Sekkei

Masafumi Sekine joined Nikken Sekkei after graduating from Waseda University in 1991. He has been in charge of electrical engineering for a variety of building types: offices, laboratories, and educational, production, sports, medical and welfare facilities. He is also involved in consulting related to building urban energy infrastructures, ensuring resilience functions, utilizing IoT, and for introducing renewable energy. From 2023, as CIO, he has been working to develop and promote internal DX strategies, and create digital workplaces. As head of sustainability promotion from 2024, he is responsible for the planning and management of the company's contributions to decarbonization.

Hideki Shimada, National Institute of Advanced Industrial Science and Technology

Hideki Shimada is a researcher at the National Institute of Advanced Industrial Science and Technology (AIST) in Japan. He is currently a visiting scholar at the University of California, Davis, and an affiliate at Lawrence Berkeley National Laboratory (LBNL). He earned his Ph.D. in Agricultural Science from Kyoto University and specializes in Environmental and Energy Economics. His research focuses on understanding how households use energy through data-driven analysis, with a particular emphasis on promoting decarbonization within the residential sector. He also evaluates the socio-economic impacts of decarbonization technologies, contributing valuable insights to the global discourse on sustainable energy practices.

Som Shrestha, Oak Ridge National Laboratory

Dr. Som S Shrestha is a Senior R&D Scientist in the Building Technologies Research and Integration Center at Oak Ridge National Laboratory. His current research is on developing technologies to enhance building energy efficiency and enable demand flexibility. Some of Dr. Shrestha's recently completed works at ORNL include thermal performance evaluation of various radiant barrier systems, thermochromic coatings for building applications, development of a protocol for lifetime energy and environmental impact assessment of building insulation materials, and evaluation of lower-GWP alternative refrigerants. Before joining ORNL, he worked at Industrial Assessment Center at Iowa State University and as a mechanical engineer in Nepal. Shrestha earned a PhD in Mechanical Engineering from Iowa State University in 2009.

Danniel Siksay, East Tennessee Clean Fuels

Danniel Siksay is the Chief of Staff at East Tennessee Clean Fuels and leads strategic development and implementation of initiatives to advance sustainable transportation across Tennessee. With a strong background in philosophy and extensive experience in web design and digital media, Danniel brings a unique perspective to clean energy advocacy. Their current work aims to increase access to electric bikes and zero-emission vehicles in underserved communities, promoting transportation resilience, and improving air quality that will lead to equitable solutions, positive health outcomes, and pathways out of poverty through innovative transportation.

Naoki Toda, Toshiba Energy Systems & Solutions Corporation

Naoki Toda is the Chief Economist of TEPCO Research Institute (TRI). He joined the Tokyo Electric Power Company (TEPCO) in 1985, after graduating from the University of Tokyo's Faculty of Engineering. He has been involved for a long time in the electricity market design in Japan. He was awarded Specialist S grade in TEPCO, for his knowledge of the Power System Economics gained in the course of his career. His research focuses on the electricity market design. In particular, he focuses on modification of the market design in response to the significant change of the environment surrounding the electricity supply industry from the start of the market reform.

Kevin Tomsovic, Clemson University

Dr. Tomsovic is executive director of Clemson University Restoration Institute (CURI), Duke Energy Endowed Chair in Smart Grid Technology and professor of Electrical and Computer Engineering. He is an IEEE Fellow and new member of the National Academy of Engineering. He received his B.S. in Electrical Engineering at Michigan Technological University and his M.S. and Ph.D. degrees in Electrical Engineering from University of Washington. Dr. Tomsovic's areas of interest include intelligent systems and optimization methodologies applied to various power system problems, including distribution system design, electricity market analysis, equipment diagnostics and maintenance, operation of dispersed energy resources, production scheduling, and stabilization control.

Michael Walton, General Manager, Energy Transition Finance

Michael Walton is an energy transition thought-leader with 20 years of experience in sustainable development, clean tech mentoring, and strategic consulting. He is the managing partner at Energy Transition Finance, adept in helping clients build a strong financial, environmental, and community-benefit strategy as well as guiding them through complex federal funding processes, particularly with the U.S. Department of Energy. His clientele has included prestigious organizations such as Mitsubishi Heavy Industries, Mitsubishi Power Americas, US DOE Advanced Research Projects Agency for Energy, US Government Services Agency, Generation Investment Management, US Green Building Council, Cummins, and the Bill and Melinda Gates Foundation. Recognized for his sustainability leadership, Michael has received accolades from the Mayor of Washington DC, the Governor of Tennessee, and was selected for the Harvard Business School Young American Leaders Program.

Yu Wang, Iowa State University

Dr. Y. Wang's research is in field of energy policy analysis, focusing on (1) the adoption of nascent clean energy/water technologies, (2) improving energy justice, and (3) understanding climate risk perception. She leads multiple research projects (funding from NSF, EPA, USDA, Sloan Foundation, etc) to investigate the social acceptance of and estimating willingness to pay for new technologies. Her expertise resides in a mix of modeling and social science methods for policy analysis, including survey, expert interviews, energy modeling, cost-benefit analysis, and life-cycle analysis. Dr. Wang, Y. has published many articles in prestigious peer-reviewed journals, as well as a book.

Takeo Yagihashi, Toshiba Energy Systems & Solutions Corporation

Takeo Yagihashi is a researcher at Tokyo Electric Power Company (TEPCO) Research Institute (TRI). He joined TEPCO in 1996. He has been involved in the planning and marketing departments for an extended period, where he has analyzed demand assumptions and electric power data until his current position in 2015. He is engaged in research for the household sector of TEPCO Energy Partners, an electricity retailer. His research analyzes equipment-controlled demand response (DR) data using HP water heating equipment and storage batteries. Additionally, he is studying the characteristics of each household based on their electricity usage to develop a data-driven understanding of consumer behavior.

Yohei Yamaguchi, Osaka University

Yohei Yamaguchi is an Associate Professor at the Graduate School of Engineering, Osaka University, where he has been in his current position since April 2015. His research interests include the development of modeling methods for energy demand of building stock and the application of the developed models to climate change mitigation analysis. His research deals with 1) stochastic modeling of people's daily activities, 2) analysis of people's activities and habits, 3) modeling and management of energy demand of community/building stock, and 4) climate change mitigation analysis.

Takamitsu Yasukochi, Panasonic

Takamitsu Yasukouchi is a liaison to the Board of Advisors for Panasonic. He is general manager of Panasonic's liaison department, which promotes energy and environmental business in Japan. He interfaces with the Ministry of Economy, Trade, and Industry (METI), the Ministry of the Environment, Tokyo Metropolis, and all corresponding research establishments and universities to promote battery storage systems, solar cells, and sustainable energy management for microgrid communities. Yasukouchi helped develop the first Japanese microgrid community with METI and promoted nationwide LED migration with government politicians, ministries, and municipalities. He is the smart grid committee leader of the Japan Electrical Manufacturers Association and speaks widely on topics of energy and the environment.

Shinya Yoshizawa, Osaka University

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UT and MABE professor Feng-Yuan Zhang leads the Nanodynamics and High-Efficiency Lab for Propulsion and Power (NanoHELP), led by. The core skills in NanoHELP group lie in thermal-fluid sciences and reactions, micro-/nano- technology, electrochemistry, advanced manufacturings, 3-D printings, and state-of-the-art spectroscopies and diagnostics. The research ranges from fundamental understanding to system optimization with a strong interdisciplinary study of micro/nano-scale chemical reaction, electrocatalyst, heat/mass transport, fluid mechanics, novel materials, corrosion, degradation, surface/mechanical/chemical properties and MEMS/NEMS. Our recent research activities include: hydrogen production, electrolysis, fuel cell, ammonia (NH3) production, CO2 conversion into high-products (e.g. methane (CH4), methanol (CH3OH), ethylene (C2H2), etc), energy storage, decarbonization and sensors.

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Dr. Zhi Zhou is a Principal Computational Scientist in the Center for Energy, Environmental, and Economic System Analysis at Argonne National Laboratory. His research interests include optimization, machine learning based forecasting, decision making under uncertainty, and applications on power grid, electricity markets, renewable energy, and the interdependency between power grids and other infrastructure systems. Zhi Zhou received his M.S. in Operations Research and Statistics, and Ph.D. in Decision Sciences and Engineering Systems from Rensselaer Polytechnic Institute.

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