

Quadrennial Energy Review Second Installment Electricity: Generation to End Use Stakeholder Meeting #7: Atlanta, GA May 24, 2016 Georgia Institute of Technology



Georgia Institute of Technology GTRI Conference Center 250 14th Street, NW

Host and Panelist Bios



Dr. Ernest Moniz, United States Secretary of Energy

As United States Secretary of Energy, Dr. Ernest Moniz is tasked with implementing critical Department of Energy missions in support of President Obama's goals of growing the economy, enhancing security and protecting the environment. This encompasses advancing the President's all-of-the-above energy strategy, maintaining the nuclear deterrent and reducing the nuclear danger, promoting American leadership in science and clean energy

technology innovation, cleaning up the legacy of the cold war, and strengthening management and performance.

Prior to his appointment, Dr. Moniz was the Cecil and Ida Green Professor of Physics and Engineering Systems at the Massachusetts Institute of Technology (MIT), where he was a faculty member since 1973. At MIT, he headed the Department of Physics and the Bates Linear Accelerator Center. Most recently, Dr. Moniz served as the founding Director of the MIT Energy Initiative and as Director of the MIT Laboratory for Energy and the Environment where he was a leader of multidisciplinary technology and policy studies on the future of nuclear power, coal, nuclear fuel cycles, natural gas and solar energy in a low-carbon world.

From 1997 until January 2001, Dr. Moniz served as Under Secretary of the Department of Energy. He was responsible for overseeing the Department's science and energy programs, leading a comprehensive review of nuclear weapons stockpile stewardship, and serving as the Secretary's special negotiator for the disposition of Russian nuclear materials. From 1995 to 1997, he served as Associate Director for Science in the Office of Science and Technology Policy in the Executive Office of the President.

In addition to his work at MIT, the White House and the Department of Energy, Dr. Moniz has served on a number of boards of directors and commissions involving science, energy and security. These include President Obama's Council of Advisors on Science and Technology, the Department of Defense Threat Reduction Advisory Committee, and the Blue Ribbon Commission on America's Nuclear Future.

A member of the Council on Foreign Relations, Dr. Moniz is a Fellow of the American Association for the Advancement of Science, the American Academy of Arts and Sciences, the Humboldt Foundation, and the American Physical Society.

Dr. Moniz received a Bachelor of Science degree summa cum laude in Physics from Boston College, a Doctorate in Theoretical Physics from Stanford University, and honorary degrees from the University of Athens, the University of Erlangen-Nurenberg, Michigan State University, and Universidad Pontificia de Comillas.



Dr. Tim Lieuwen, Executive Director, Strategic Energy Institute, Professor and David S. Lewis, Jr. Chair in the School of Aerospace Engineering, Georgia Institute of Technology

Dr. Tim Lieuwen is the Executive Director of the Strategic Energy Institute at Georgia Tech, Professor and Davis S. Lewis, Jr. Chair in the School of Aerospace Engineering, and the CTO of Turbine Logic, a firm specializing in data analytics for power generation performance optimization and monitoring. Professor Lieuwen is an international authority on energy and power. He is author of the textbook Unsteady Combustor Physics, edited three other monographs, authored seven book chapters, and over 300 publications. He is a member of

the National Petroleum Counsel, is on the Board of Governors for Oak Ridge National Labs, and a board member of the ASME International Gas Turbine Institute.

Professor Lieuwen is a Fellow of the ASME and AIAA, and has been a recipient of the AIAA Lawrence Sperry Award and the ASME Westinghouse Silver Medal.

Dr. Lieuwen earned his Bachelor of Science degree, in Engineering, from Calvin College, in Grand Rapids, Michigan, and his Master's and Ph.D., both in Mechanical Engineering, from Georgia Tech.



Joshua Cohen, Deputy Administrator, USDA Rural Utilities Service

Josh Cohen was appointed Deputy Administrator of USDA's Rural Utilities Service in October 2015. Before coming to USDA, he served for 14 years in state and local government, including as Chief Administrative Officer of the Maryland Department of General Services and as Mayor of Annapolis, Maryland. Before working in rural development he was in the criminal justice field, working as a Parole and Probation Agent, as a trainer for police and correctional officers, and as a grant director for a crime victims'

resource center.

In his late teens, Mr. Cohen spent two summers working the fields of his grandparents' blueberry farm in rural Michigan. This time on the farm instilled in him a lifelong affection and respect for the caring, hardworking and down-to-earth people of rural America.

Mr. Cohen earned a degree in Economics from the University of Maryland, and is pursuing a Master's in Public Administration from the University of Baltimore. He lives in Annapolis with his wife Lesley, an oncology research nurse, and their two daughters aged 11 and 7.



David Friedman, Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy

As Principal Deputy Assistant Secretary of the Office of Energy Efficiency and Renewable Energy (EERE), David Friedman helps manage day-to-day operations and oversee a broad technology portfolio designed to accelerate development and deployment of energy efficiency and renewable energy technologies.

Before joining EERE, Mr. Friedman served as both Deputy and Acting Administrator of the National Highway Traffic Safety Administration, where he led the agency's mission to save lives, prevent injuries and reduce economic costs due to road traffic crashes, through education, research, safety standards, and enforcement activity.

Mr. Friedman has been an influential sustainable transportation and clean energy technologies expert for more than two decades, including service on several National Academies committees and the President's Hydrogen Technical Advisory Committee.

Specifically, he worked 12 years at the Union of Concerned Scientists (UCS) in several different capacities, including Senior Engineer, Research Director, and Deputy Director of their Clean Vehicles program. He engaged in research and policy issues regarding conventional fuel economy technology, mass-size-safety interactions, and the energy and environmental impacts of hybrid, battery, and fuel cell electric vehicles. In 2007, his team's efforts helped lead to the first legislative increase in corporate average fuel efficiency standards since its creation in 1975. In recognition of that and other work, he was named an Automotive News All-Star, and one of Washingtonian Magazine's 30 People Changing the Environment in Washington in 2008.

In addition, before joining UCS in 2001, Mr. Friedman worked for the University of California, Davis in the Fuel Cell Vehicle Modeling Program, and also volunteered on the UC Davis FutureCar team that built a plug-in hybrid electric family car that doubled its fuel economy.

A Rhode Island native, Mr. Friedman earned his B.S. degree in mechanical engineering from Worcester Polytechnic Institute and is a Ph.D. candidate at the University of California, Davis, with a focus on modeling and optimizing automotive fuel cell vehicle systems and their fuel efficiency.



Christopher Kelley, PMP, Vice President, Energy Solutions Division, Energetics, Inc., and QER Public Meeting Moderator

Chris Kelley has nearly twenty years of experience in the energy and technologies industries. As an experienced program management consultant and FORTUNE 200 corporate director, his background includes developing and improving utility, technology and energy strategy and execution-oriented program management offices. He has facilitated effective collaborations of disparate groups focused on critical national challenges, industry-wide

opportunities, and organizational strategy. His experience includes a history of increasing effectiveness of project management throughout organizations – pushing efficiency and creating higher visibility into the project work that results in execution on strategy.

In addition to facilitating public meetings related to the Department of Energy's (DOE's) Quadrennial Energy Review, including moderating discussions on energy transportation, transmission, and storage, including a focus on electricity, Mr. Kelley has provided program and project guidance for DOE's ~\$8 billion, 99-project Smart Grid Investment Grant (SGIG), strategic and technology consulting for DOE's geothermal technology program, and similar services for the National Institute of Standards and Technology (NIST) and the American Society of Mechanical Engineers. Mr. Kelley has also engaged in program and project management activities for large utility, government, and non-governmental organizations' energy, organizational development, and technology projects, and has provided strategy development and implementation for FORTUNE 200 corporate services organizations.

Mr. Kelley has been with Energetics since 2009, when he joined the company from Constellation Energy, where he was Director of that company's IT and Supply Chain Project Management Office. He had been with Constellation Energy, and its regulated utility subsidiary Baltimore Gas & Electric (BG&E), since 2000. Prior to joining BG&E, Mr. Kelley worked on Y2K compliance issues for utilities for the Maxim Group.

Mr. Kelley earned his Bachelor's degree, *Magna cum laude*, in Information Systems, from the University of Maryland Baltimore County, and his MBA, in Global Strategy and Management, from the University of Maryland,

Robert H. Smith School of Business. During his MBA studies, Mr. Kelley did graduate-level coursework and onsite consulting in developing nations, including business strategy for multinational and regional companies in Delhi, Bangalore, and Mumbai, India. He received his certificate as a Project Management Professional (PMP) from the Project Management Institute (PMI) in 2005. Since 2013, Mr. Kelley have been a member of the Maryland Clean Energy Center Advisory Council. Mr. Kelley became an Eagle Scout in 1990.

<u>Panel 1: Bulk Power Generation and Transmission: How Can We Plan, Build, and Operate the Appropriate</u> Amount for Future Needs?



Stacy Dochoda, President and Chief Executive Officer, Florida Reliability Coordinating Council (FRCC)

Stacy Dochoda was named President and CEO of the Florida Reliability Coordinating Council in April 2012. FRCC is the Regional Entity for peninsular Florida. FRCC is also a NERC registered Reliability Coordinator and Planning Authority.

Ms. Dochoda previously served as the General Manager of the Southwest Power Pool Regional Entity (SPP RE), an eight-state area that includes all or parts of Arkansas, Kansas, Louisiana, Mississippi, Missouri, New Mexico, Oklahoma, and Texas.

Ms. Dochoda has over 30 years' experience in the electric utility industry, including 25 years with Reliant Energy Inc. and its predecessor, Houston Lighting and Power Company. Her experience there was primarily in regulatory and electric market design, including serving as Vice President of Regulatory Affairs.

Ms. Dochoda holds a BS in Industrial Engineering and an MBA from the University of Houston. She is also a Certified Public Accountant registered in the state of Texas.



Brian Thumm, Senior Director of Compliance and Reliability, SERC Reliability Corporation (SERC)

Brian F. Thumm, PE, is currently the Senior Director of Compliance and Reliability for the SERC Reliability Corporation in Charlotte, NC. In this role, Mr. Thumm oversees the Compliance Monitoring, Entity Assessment, and Mitigation Plan functions of the SERC Compliance Monitoring and Enforcement Plan (CMEP). These functions include not only

audits, self-certifications, and compliance investigations, but also Internal Risk Assessments (IRA) and Internal Controls Evaluations (ICE) which help inform the compliance monitoring function from an integrated risk perspective. Mr. Thumm also oversees the Reliability Assessment and Performance Analysis (RAPA) program which uses data collection and analysis to identify reliability risks within the SERC footprint.

Prior to joining SERC in February 2016, Mr. Thumm was the Director of Regional Planning for ITC Holdings Corp., where he led a group of engineers engaged in economic planning analysis, load forecasting, stability analysis, technical studies, and NERC compliance, as well as ITC's post-Order 1000 planning-related efforts across the country.

Mr. Thumm has over 22 years of electric industry experience, which includes positions in Transmission Planning, Transmission Operations, Regulatory Strategy, External Affairs, Project Development, Nuclear Licensing, and Computer Services.

Mr. Thumm earned a Master's Degree in Business Administration from Michigan State University; a Master of Science degree in Electrical Engineering from Tulane University; and a Bachelor of Science degree in Electrical Engineering from Rensselaer Polytechnic Institute. Mr. Thumm is a registered Professional Engineer in Michigan and Louisiana.



Doug Esamann, Executive Vice President, and President, Midwest and Florida Regions, Duke Energy Corporation

Doug Esamann serves as Executive Vice President of Duke Energy Corporation, and President of Duke Energy's Midwest and Florida regions. He has responsibility for the profit/loss, strategic direction and performance of the company's regulated utilities in Indiana, Ohio, Kentucky and Florida, including the natural gas distribution business in the Midwest. He also has responsibility for grid solutions and emerging technology efforts throughout the enterprise. He assumed his current position in June 2015.

Previously, Mr. Esamann served as president of Duke Energy Indiana, the state's largest electric utility, serving approximately 810,000 customers in 69 of the state's 92 counties. He was responsible for the company's regulatory, governmental relations, economic development and community affairs work in Indiana. He served in that role since November 2010.

Prior to that, Mr. Esamann was Senior Vice President of Corporate Strategy for Duke Energy, where he led the company's strategy development and business planning efforts, including load forecasting and market fundamentals. He has also served as Senior Vice President of Strategy and Planning, with additional responsibilities for integrated resource planning, environmental compliance planning, transactional support, customer market analytics, load research and renewable energy compliance. Immediately following the merger between Duke Energy and Cinergy in April 2006, Mr. Esamann served as Group Vice President of Strategy and Planning for Duke Energy's regulated utilities.

With Cinergy, he served as Senior Vice President of Energy Portfolio Strategy and Management for Cinergy's commercial business unit, with responsibility for fuel management, environmental risk management, generation dispatch, power purchases and sales, portfolio analytics, load forecasting, generation asset planning, demand-side management planning and environmental compliance planning.

Mr. Esamann began his employment with Public Service Indiana (predecessor of PSI Energy) in 1979. In the course of his PSI/Cinergy career, he held a variety of leadership roles, including Vice President and Chief Financial Officer of the commercial business unit from 1999 until 2001, and president of PSI Energy until 2004.

Mr. Esamann has been active on a number of community and industry boards. He currently serves as a member of the board of directors for the Electric Power Research Institute (EPRI) and a board member of Energy Systems Network, a nonprofit industry initiative focused on clean technology development. He also serves as chair of the advisory board for the University of Missouri Financial Research Institute.

A native of Plainfield, Indiana, Mr. Esamann earned a Bachelor of Science degree in Accounting from Indiana University. He and his wife, Kimberly, have two daughters, a son and three granddaughters.

Duke Energy, one of the largest electric power companies in the United States, supplies and delivers electricity to approximately 7 million customers in the Southeast and Midwest. The company also distributes natural gas in Ohio and Kentucky. Its commercial and international businesses operate diverse power generation assets in North

America and Latin America, including a growing renewable energy portfolio. Headquartered in Charlotte, N.C., Duke Energy is a Fortune 125 company traded on the New York Stock Exchange under the symbol DUK.



Mike Langford, National President, Utility Workers of America, AFL-CIO

Mike Langford has held a variety of Union offices throughout his career, which began with the Detroit Edison Company in 1978, to his election as President of the Utility Workers Union of America. A graduate of Wayne State University Labor School, he continued his labor studies at the University of Michigan and Michigan State University. He sits on the Executive Council of the AFL-CIO, the Advisory Board of American Income Life, has served on the Midwest Governors Association Advisory Board, on the Executive Committee for the Center for Energy Workforce Development, and was a member of the U.S. Department

of Labor Secretary's Advisory Committee on Apprenticeship. Previously, he also served on the Board of Trustees of the Council for Adult Experiential Learning (CAEL), and as Co-Chair of the Council of Competitiveness' Energy Security, Innovation & Sustainability Steering Committee.

Mike Langford was elected President of the UWUA in 2006 and re-elected in 2011 and 2015. He has pledged that his members would be the safest, most productive and highest skilled utility workers in the world. Recognizing as well the rapidly approaching challenge of an overwhelming graying energy workforce, he is dedicated to promoting continuous life-long learning which steered him to design and develop the Power for America Training Trust, where he serves as Chair of the Trustee Board. A multi-employer training fund, jointly administered by union and management, the Trust serves as the vehicle through which proven successful and college degree programs continue to be developed. Of particular pride is the incorporation of the Utility Workers Military Assistance Program (UMAP) which is training Veterans for jobs in the utility industry.

Under his leadership, the Utility Workers Union of America has committed to represent the interests of both the public and its workers to bring about long over-due national reform that will deliver safe, reliable, cost-effective and environmental friendly utility services across the country. On a state by state basis, the UWUA is doing its own investigations, writing position papers from its findings and urging government to commit to the development of, and investment in, more durable and sustaining physical and human utility infrastructures. Mike Langford sees it as a win- win for all. "Investing in utility infrastructure reform is good for the economy, it's good for the environment, it's good for the consumer, and it's good for our workers. We all need to work together to be part of the solution because it is the right thing to do."



Lisa Johnson, Chief Executive Officer and General Manager, Seminole Electric Cooperative, Inc.

Lisa D. Johnson is Seminole Electric Cooperative's Chief Executive Officer and General Manager. As Seminole's CEO, she is responsible for overall Cooperative operations and reports directly to Seminole's Board of Trustees. At Seminole since 2013, she is the first woman to lead a generation and transmission cooperative in the United States.

Prior to joining Seminole, Ms. Johnson served as Senior Vice President and Chief Operating Officer of Old Dominion Electric Cooperative (ODEC) in Glen Allen, Va. Ms. Johnson joined

ODEC in 2006, following an eleven-year tenure with Mirant Corporation and Southern Company. Collectively, she has more than twenty years of professional and management experience in the electric utility sector.

Ms. Johnson holds a Bachelor of Science degree in Mechanical Engineering and Materials Science from Duke University. She serves as a Director on the Florida Reliability Coordinating Council, Secretary/Treasurer of the Florida Electric Power Coordinating Group, a Trustee on the Board of Averett University, a Director and a member of the Executive Committee on the Board of the Florida Electric Cooperatives Association, a Director on the Board of the Electric Power Research Institute, as Second Vice-President of the National G&T Managers Association, and was named one of Virginia's most "Influential Women" in 2012.

Panel 2: Electricity Distribution and End Use: How Do We Manage Challenges and Opportunities?



Gordon L. Gillette, President, Tampa Electric and Peoples Gas Systems

Gordon L. Gillette is president of Tampa Electric and Peoples Gas Systems. He is responsible for the operations of both utilities, including Energy Supply, Electric and Natural Gas Delivery, Customer Care, Fuels Management, and Regulatory Affairs.

Mr. Gillette previously was Executive Vice President and Chief Financial Officer for TECO Energy. Since joining Tampa Electric in 1981, Mr. Gillette has held leadership positions in Regulatory

Affairs, Finance, Generation Planning and TECO Guatemala (then a subsidiary of TECO Energy).

Mr. Gillette received both his Bachelor of Science in Mechanical Engineering and his Master of Science in Engineering Management from the University of South Florida (USF). A licensed Professional Engineer, Mr. Gillette is a member of the American Society of Mechanical Engineers and the Florida Engineering Society. A graduate of The Tampa Connection Leadership Program and the Harvard Business School Advanced Management Program, he has also completed doctoral level coursework in Industrial Engineering at USF.

Mr. Gillette serves on the board of the American Gas Association, chairing its Audit Committee and is Chair of the American Gas Foundation. He serves on the boards of Enterprise Florida and is past chair of the Tampa Hillsborough Economic Development Corporation, is chair of the Florida Coordinating Group, and is past chair of the Florida Reliability Coordinating Council.

Gillette serves on the boards of the Tampa General Hospital Foundation and Positive Coaching Affiliation. Past chair of the USF Foundation, he currently serves as Co-Chairman of the USF Foundation's Unstoppable Campaign. Gillette has also served as President of the Board for the Children's Museum of Tampa, chair of the Hillsborough County Education Foundation, and Chair of the Leadership Council for the Consortium of Florida Education Foundations.



Greg Merritt, Vice President, Marketing and Public Affairs, Cree, Inc.

As Vice President, Marketing and Public Affairs, Greg Merritt is one of Cree's top marketing executives working to drive the game-changing transformation from obsolete, energy wasting lighting to higher-quality, more efficient LED technology. Working in tandem with energy leaders, Mr. Merritt is a catalyst in driving conversation on public policy environment for energy-efficient lighting and the implications of current initiatives in driving global competitiveness with better lighting. In 2015, he was unanimously selected as one of the six business, utility and

industry leaders to join the Alliance to Save Energy Board of Directors, aimed at empowering a more energy-efficient future.

Mr. Merritt has a long history in driving adoption of new technologies, from the adoption of digital communications and fiber optics and the move to Voice-Over-IP to the current transformational shift to LED lighting. He joined Cree in March 2006 to help define the LED market and execute corporate marketing, branding and promotion. His role at Cree is part of his overall mission to identify and capitalize on new market opportunities through creative marketing tactics. Mr. Merritt also works in tandem with leaders and customers across the energy industry to fortify the role of LED lighting in creating brighter, more sustainable cities and businesses, a cleaner environment and reducing the world's energy footprint. These efforts span from government and public affairs to promoting STEM education and collaborating with a utilities to further education and market penetration of energy-efficient LED lighting.

Prior to Cree, Mr. Merritt served as president of New Dominion Group, LLC, where he provided marketing and business development consulting to firms entering new markets, introducing new products, or developing strategic marketing and business plans. Additionally, he spent nearly 20 years with Nortel Networks, rising to vice president of enterprise marketing where he managed the global portfolio marketing for the enterprise division including voice, data, optical, VoIP and business applications.

Mr. Merritt holds a Master's of Operations Research from the University of California-Berkeley and a Bachelor of Science in Systems Engineering from the University of Virginia.



Dr. Deepak Divan, John E. Pippin Chair and Georgia Research Alliance Eminent Scholar, Director, Georgia Tech Center for Distributed Energy, and, Professor, School of Electrical and Computer Engineering, Georgia Institute of Technology

Dr. Deepak Divan is Professor, John E Pippin Chair, GRA Eminent Scholar, and Director of the Center for Distributed Energy at the Georgia Institute of Technology in Atlanta, GA. His field of research is in the areas of power electronics, power systems, smart grids, and distributed control of power systems. He works closely with utilities and industry and is actively involved in research,

teaching, entrepreneurship, and starting new ventures.

Dr. Divan also serves as Founder and Chief Scientist at Varentec, in Santa Clara, CA, and was President and CTO from 2011-14, leading the company as it developed its suite of innovative distributed real-time grid control technologies. Varentec is funded by leading green-tech Venture Capital firm Khosla Ventures and renowned investor Bill Gates.

Dr. Divan is an elected Member of the U.S. National Academy of Engineers, a Fellow of the IEEE, past President of the IEEE Power Electronics Society, and is a recipient of the IEEE William E. Newell Field Medal. He has 40 years of academic and industrial experience, 65 issued and pending patents, and over 250 refereed publications. He has founded or seeded several new ventures including Soft Switching Technologies, Innovolt, Varentec, and Smart Wires, which together have raised >\$150M in venture funding. He received his B. Tech from the Indian Institute of Technology (IIT) Kanpur, and his MS and PhD degrees from the University of Calgary, Canada.



Cameron Griffith, Energy Solutions Advisor, Trane

Cameron Griffith is an Energy Solutions Advisor for Trane. He is a LEED Accredited Professional and a Certified Energy Manager. He holds a BS in Mechanical Engineering from Clemson University and an MS in Technical Marketing from Rensselaer Polytechnic Institute.

Mr. Griffith's role at Trane is to work with building owners to understand their business and operational goals. Then, he uncovers whether their buildings are helping or hindering their path

to business results. Energy Performance Contracting is one of the procurement tools he uses to help his clients improve their business results. His most recent project, currently under construction, is the \$27.9M Energy Performance Contract with the Georgia World Congress Center.



Stan Wise, Commissioner, Georgia Public Service Commission

Stan Wise has served on the Public Service Commission since January 1995, having been elected statewide four consecutive times. He was reelected for his fourth term as Commissioner in November 2012. His first elected public office was Cobb County Commissioner in 1990 and he served the county as a member of the Cobb County Planning Commission and the Board of Zoning Appeals. Commissioner Wise was a Board Member of the ten-county Atlanta Regional Commission from 1992 through 1994.

Commissioner Wise was elected by his regulatory peers as President of the National Association of Regulatory Utility Commissioners (NARUC) in 2003 and 2004, furthering his responsibilities and interaction with Congress, federal agencies, state officials, industry leaders, Wall Street, consumer groups and the news media. He has testified multiple times before Congress. Commissioner Wise is a past President of the Southeastern Association of Regulatory Utility Commissioners (SEARUC) and serves on the International Relations Committee and Gas Committee of NARUC. He is also on the Advisory Council for the New Mexico State University Center for Public Utilities. He is a member of the Board of Trustees for the Feed the Hungry Foundation, a faith-based charity, and a member of the Action Ministries Board of Directors.

His alma mater, Charleston Southern University, named Commissioner Wise the Outstanding Alumnus of the Year in 2006. In addition, he was named the Bonbright Center of the Terry College of Business Honoree of the Year in 2005.

He has also served on the U.S. Department of Energy State Energy Advisory Board (STEAB), the Cobb County Public Schools Educational Foundation, Inc., the Board of Directors of the Cobb YMCA, the Boys Club of Cobb County, and the Advisory Board of the North Georgia Law Enforcement Academy. He owned and operated an insurance business in Cobb County for twenty years. Wise was awarded his B.S. in Business Management from the Charleston Southern University in 1974. He also served in the U.S. Air Force Reserve for six years. Commissioner Wise and his wife Denise have two grown children.

Panel 3: Financing New Electricity Infrastructure

Bruce Edelston, Vice President, Energy Policy, Southern Company

Bruce Edelston was appointed Vice President, Energy Policy, with Atlanta-based energy provider Southern Company in March 2016. In this position he is responsible for helping the company develop and coordinate a response to policy issues across its various operating companies and subsidiaries and for supporting state and federal policy efforts.

Prior to rejoining Southern Company, Mr. Edelston was president of the Energy Policy Group, a consulting firm he founded to provide technical and policy advice on current strategic issues to utilities, law firms, energy companies and government agencies. While at the Energy Policy Group, Mr. Edelston also served as Executive Director of the Coalition for Fair Transmission Policy and as president of the Electric Markets Research Foundation.

Prior to founding the Energy Policy Group, Mr. Edelston held previous positions at Southern Company, with his last role being Director of Energy Policy. At Southern Company and subsidiary Georgia Power, Mr. Edelston had responsibilities for developing corporate policy positions on industry structure and environmental issues and responding to federal and state legislative and regulatory initiatives.

Before then, he held several positions at the Edison Electric Institute, where he was involved in legislative and regulatory initiatives involving transmission access, industry structure, markets and state regulatory policy. He also has prior experience with Charles River Associates (CRA) International and the Westinghouse Electric Corporation. Mr. Edelston holds a B.S. degree in Electric Engineering/Engineering and Public Policy and an M.S. degree in Urban and Public Affairs, both from Carnegie Mellon University.

Tres Carpenter, Principal, ZWJ Investment Counsel



Tres Carpenter is a principal and an analyst at ZWJ Investment Counsel, Inc. He joined the firm in 2007. Previously, Mr. Carpenter was an equity research analyst at Citigroup Asset Management/Legg Mason (2003-2007). Prior to that he was an intern at Federal Reserve Branch in San Francisco.

Mr. Carpenter received a BA in Economics and History at Hampden-Sydney (1998), and an MBA in Finance from the University of California, Davis (2003).

Cheryl Roberto, Partner, Utility Transformation & Regulation, Twenty First Century Utilities LLC



Cheryl Roberto has broad expertise in utility operations, energy regulation and public policy. Previously, she led the Environmental Defense Fund (EDF) Clean Energy Program, a national initiative dedicated to modernizing the U.S. energy infrastructure through regulatory reform. Ms. Roberto served as a Commissioner of the Public Utilities Commission of Ohio (PUCO) from 2008 to 2012, where she was Co-Chair of the 2012 National Electricity Forum. In 2013, Ms.

Roberto received the Inspiring Efficiency Leadership Award presented by the Midwest Energy Efficiency Alliance to the organization or individual within a thirteen state region who has demonstrated exceptional leadership in support of energy efficiency.

Prior to joining PUCO, Ms. Roberto led the City of Columbus, Ohio Department of Public Utilities for four years. As CEO of the city's four utilities, she managed a team of over 1,300 employees and established and successfully managed a \$2.5 billion dollar capital engineering and construction program. Ms. Roberto is also an experienced environmental litigator who has served as an Ohio Assistant Attorney General and an Assistant General Counsel for the Commonwealth of Pennsylvania.

Ms. Roberto holds a BA, in Political Science, from Kent State, and a JD from The Ohio State University.



James E. Fuller, President and Chief Executive Officer, Municipal Electric Authority of Georgia (MEAG)

Jim Fuller was elected President and Chief Executive Officer of MEAG Power (Municipal Electric Authority of Georgia) by a unanimous vote of the Board of Directors and assumed his duties on January 1, 2016. He currently serves on the Board of Directors of The Energy Authority, the nation's leader in public power energy trading and risk management; the

Large Public Power Council, an organization comprising the 26 largest public power utilities in the United States; and the Georgia Chamber of Commerce.

Mr. Fuller has more than 35 years of experience in the public power arena, specializing in the finance area, and has been employed by MEAG Power since 1997, most recently as Senior Vice President and Chief Financial Officer.

He is a Certified Public Accountant, received his undergraduate degree from Western New England College and holds a master's degree in taxation from Bentley College.

MEAG Power is a nonprofit, statewide generation and transmission organization that is recognized as one of the premier joint action agencies in the country, with an enviable diversified fuel portfolio and more than half of the energy mix coming from emissions-free generation resources. MEAG Power has over \$9 billion in assets, delivered 10.6 million megawatt-hours of energy in 2014, and owns more than 1,300 miles of high-voltage transmission lines and nearly 200 substations. The Authority provides electric power through its co-ownership of two nuclear and two coal-fired generating plants and sole ownership of a natural gas combined cycle facility. MEAG Power is also a co-owner of the new nuclear Plant Vogtle Units 3 & 4, estimated to come on line in 2019 and 2020. Created by the Georgia General Assembly in 1975, MEAG Power provides reliable, competitive wholesale electricity to its 49 member public power communities, who own their local distribution systems. MEAG Power also monitors and advocates on energy issues at the state and federal levels on behalf of our Participants.



John T. W. Mercer, Chairman and Founding Principal, Mercer Thompson LLC

John Mercer is the Chairman and Founding Principal of Mercer Thompson LLC, an Atlanta-based law firm with a Washington, DC office, representing energy industry clients around the world, particularly in the electric power sector. Mercer Thompson's attorneys and professionals employ a team-oriented approach to provide top-tier client service in the areas of corporate and capital markets finance, project finance and development, Department of Energy loan guarantees for qualifying energy projects, mergers, sales, acquisitions and joint ventures of power projects. Within the electric power industry, their current focus is on

finance and development of renewable energy and clean technology projects, as well as nuclear energy (including SMRs), and transmission projects.

Since his admission to the Georgia bar in 1977, Mr. Mercer has concentrated his law practice in the areas of project and corporate finance and other complex transactions, with particular emphasis on the electric power industry. Mr. Mercer has extensive experience and expertise in project finance, corporate finance and securities offerings for electric and gas utilities, joint ventures and joint ownership arrangements, mergers and acquisitions, and independent power projects.

Prior to the founding of Mercer Thompson LLC in 2009, Mr. Mercer had spent more than 30 years as an attorney in the Atlanta office of a large international law firm where he was the firm-wide head of the Project Development and Finance Practice Group since 1998, and a Partner with the firm since 1985

Mr. Mercer has been named as one of America's Leading Lawyers for Business in the practice area of Energy by Chambers USA every year since 2005. He has been selected by his industry peers as one of "The Best Lawyers in America" in the practice areas of Project Finance Law and Energy Law every year since 2011. In 2013, he was named Atlanta "Lawyer of the Year" by Best Lawyers for Energy Law. Law & Politics (Thompson Reuters) and Atlanta Magazine have named him a "Super Lawyer" in the areas of Securities and Corporate Finance Law and Energy Law, in nine of the last ten yearly surveys. In addition, in each of the last seven years, Mr. Mercer has achieved Martindale-Hubbell's highest possible peer rating of AV Preeminent for professional excellence, representing the confidential opinions of the members of the Bar and Judiciary.

Mr. Mercer earned his Bachelor's degree in Economics from the University of Michigan, and his law degree from the University of Michigan Law School.