

2021 *Virtual* State Energy Conference of North Carolina

Connecting North Carolina's diverse energy economy



April 19 – 22, 2021

#NCenergy2021

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Keynote Speakers: April 20

9:20a.m **Keynote:**

Sharon Allan, Chief Strategy Officer, Smart Electric Power Alliance (SEPA)



Sharon Allen serves as the Chief Strategy & Innovation Officer providing leadership and strategic direction for the organization. She is an executive known for business transformation and growth and has advised corporate boards, Fortune 100 companies, venture & private equity companies, as well as the U.S. Department of Energy, the U.S. National Institute of Standards & Technology, and many U.S. National Laboratories on their efforts to address the transformation of the energy sector.

Prior to joining SEPA, she held roles as the CEO of the Smart Grid Interoperability Panel; Managing Director/partner Accenture; President, Elster Integrated Solutions as well as executive roles at ABB. She currently sits on the advisory board of Enertech Capital.

Sharon holds a Bachelor of Science degree in electrical engineering from the University of Florida and a Master of Business Administration degree from the Duke University Fuqua Business School.

Keynote Speakers: April 21

9:00a.m **Keynote Plenary:**

Offshore Wind Opportunity for the Mid-Atlantic

Katharine Kollins, President of the Southeastern Wind Coalition - Moderator



Katharine Kollins is President of the Southeastern Wind Coalition, a non-profit dedicated to advancing wind power in the Southeast through outreach and education. Since September 2015 she has managed SEWC's programming across 11 states working with a wide variety of stakeholders to promote land-based, offshore, and imported wind power.

Katharine's experience in the wind industry includes working for Boston-based developer First Wind, consulting with Vestas R&D to formulate a federal grant funding strategy, and a role as business development manager for The Wind Alliance. Katharine has also worked in other renewable energy capacities as an analyst at the Nicholas Institute and authoring an NREL paper on third-Party PPA financing of solar systems..

Prior to the Southeastern Wind Coalition, Katharine worked for RTI International where she was the finance lead for two \$30M+ divisions. In her role at RTI Katharine led the creation and start-up of a new business segment that allowed RTI to win over \$30M in new work during its first year.

Katharine is a 2009 graduate of Duke's Fuqua School of Business and Nicholas School of the Environment, where she earned her MBA and Master of Environmental Management. Katharine currently services on the board of Advanced Energy as an appointee of North Carolina Governor, Roy Cooper.

10:00a.m **Keynote:**

Karen Wayland, CEO, The GridWise Alliance, Inc.



Karen Wayland is CEO of GridWise Alliance and Principal at kW Energy Strategies, where she provides strategic consulting on grid modernization and clean energy policy. She is a recognized expert in national energy and environmental policy and served in leadership positions at the highest levels of government and nonprofits, including as policy advisor at the U.S. Department of Energy and to the Speaker of the House. She serves as Director on the Board of Center for Sustainable Energy and is a Distinguished Associate at Energy Futures Initiative, a Nonresident Senior Fellow at Boston University Institute for Sustainable Energy and an Equity in Energy Ambassador at the US Department of Energy. She holds a Master of Science from the University of Connecticut and a Dual Ph.D. in the fields of geochemistry and resource development from Michigan State University.

Andy Geissbuehler, Advisory Director (Renewable Resources Int'l), BVG Associates



Andy brings over 25 years of EPC energy project experience and held executive positions with multinationals such as ABB, Alstom and GE. He led Alstom's wind business in North America for seven years, including delivery and installation of Block Island while heading up GE's US offshore wind operations. Further, he served as Chairman for several wind energy operators.

Andy's consulting experience includes advising US East Coast States on supply chain, port infrastructure and wind energy strategic planning. He also progressed an innovative Jones Act marine logistic solution in partnership US oil & gas, European project- and vessel operating companies and US based private equity.

Brian Krevor, Lead Environmental Protection Specialist, Office of Renewable Energy Programs, Environment Branch for Renewable Energy, Bureau of Ocean Energy Management



Brian is the NEPA Team Lead within the Environmental Branch for Renewable Energy in BOEM's Office of Renewable Energy Programs (OREP). Prior to serving as the NEPA Team Lead, Brian was an environmental coordinator with OREP for 9 years. During that time Brian served as the environmental lead for projects in Massachusetts, North Carolina, and South Carolina and coordinated the Draft EIS for the Vineyard Wind project. He is currently also the environmental lead for the Ocean Wind project as well as the office lead for CZMA and Environmental Justice. Brian received a bachelor's degree with a Major in Environmental Policy and a Minor in History from Tulane University.

John Larson, Director of Public Policy & Economic Development, Dominion Energy



John Larson joined Dominion Energy in 1996 and is currently the Director of Public Policy and Economic Development. During John's career at the company he has held various leadership positions in business development, alternative energy technologies and construction. He is well versed in offshore wind through his experience in the development and early permitting activities for Coastal Virginia Offshore Wind (CVOW) Pilot Project.

Currently, a large part of his time is spent on Dominion Energy's Business to Business, Workforce Development and Community Outreach activity for as the Company moves forward implementing the requirements of the Virginia Clean Economy Act, including the 16,100 MW of solar, 5,200 MW of offshore wind and 2,700 MW of storage, with the objective of maximizing opportunities for Virginia's vendors, subcontractors and suppliers.

Jenifer Mundt, Senior Policy Advisor, N.C. Department of Environmental Quality (DEQ)



Jenifer Mundt joined the N.C. Department of Environmental Quality (DEQ) in April 2017, after spending more than a decade as a nonpartisan senior legislative analyst serving the North Carolina General Assembly. While at the legislature, Jennifer drafted and evaluated environmental, energy, and public health legislation and policy.

policy.

Jennifer earned bachelor's degrees in environmental science and political science from Virginia Tech before working as an environmental consultant in the private sector. She earned her master's degree in

Public Health from the Gillings School of Global Public Health at the University of North Carolina at Chapel Hill in 2007. While at Carolina, Jennifer focused her studies on environmental policy.

In addition to her role as Senior Policy Advisor, Jennifer represents North Carolina on the Regional Energy Resources Council to the Tennessee Valley Authority, and currently serves as Council Chair. Her energy expertise has been tapped by Governor Cooper to lead the Bureau of Ocean Energy Management's North Carolina Renewable Energy Task Force.

Eric A. Thumma, Senior Director for New Business Offshore Wind, Avangrid Renewables



In this role as Senior Director for New Business **Eric A. Thumma** leads the U.S. offshore businesses' commercial activities including RFP responses, offtake agreements, lease auction bids as well as external communications and state policy, legislative and regulatory affairs.

He is an energy and environmental professional with over twenty years of experience in senior management positions with Avangrid Renewables (formerly Iberdrola Renewables) and the Pennsylvania Department of Environmental Protection. Eric joined Avangrid Renewables in 2007 as Director of Policy and Regulatory Affairs. In concert with the Avangrid Renewables team, he has participated in the development of over 1,200 megawatts of wind energy in seven states.

Prior to joining Avangrid Renewables, Eric was Deputy Secretary for Pollution Prevention and Compliance Assistance and energy director for the Pennsylvania Department of Environmental Protection. He earned a Bachelor of Arts (Political Science) and Master of Public and International Affairs from the University of Pittsburgh.

Keynote Speakers: April 22

9:00a.m. **Keynote Plenary:**
What's Going on at the Legislature?

Betsy McCorkle, Partner, Kairos Government Affairs - Moderator



Betsy McCorkle has served the clients of Kairos Government Affairs since 2015. Beyond expertise in lobbying, she provides a unique understanding of the policy process with extensive experience navigating complex issues and diverse stakeholders.

Before joining the firm, Betsy directed the government affairs work for the North Carolina Sustainable Energy Association, a non-profit membership organization, where she gained extensive experience in leading diverse coalitions of businesses and other non-profits toward legislative goals. Betsy also has experience in workforce development, economic development, agricultural policy, and has been responsible for policy analysis and communications for political campaigns across the southeastern United States.

Betsy received a Master Degree in Environmental Management from Duke University, and she holds a Bachelor Degree in Environmental Economics from the University of Georgia (UGA), where she graduated magna cum laude. Betsy was a 2013 Recipient of the UGA College of Agricultural and Environmental Sciences Young Alumni Achievement Award and the 2012 Recipient of the J.W. Fanning Distinguished Young Professional Award.

Christina Cress, Statewide Initiatives Supervisor at NC Department of Transportation



Christina Cress is Of Counsel to the law firm Bailey & Dixon, LLP in Raleigh, North Carolina. Her practice focuses primarily on energy and utilities work, including serving as Regulatory Counsel to the Carolina Industrial Group for Fair Utility Rates (CIGFUR), a group of large customers of electric and gas public utilities in North Carolina who intervene in rate cases and other important electric utility proceedings at the North Carolina Utilities Commission.

Before she returned to private practice, Christina served as a Staff Attorney at the North Carolina Utilities Commission, where she spent the majority of her time advising the Commission regarding electric and water utility matters, including general rate cases, and the implementation of clean energy programs created by the enactment of HB 589 (S.L. 2017-192).

Originally from rural Florida, Christina fell in love with North Carolina upon moving here in 2010 to attend law school at UNC - Chapel Hill. Save for traveling, she hasn't left the state since. When not working, Christina usually is immersed in reading non-fiction books, listening to energy policy podcasts, or spending time with her fiancé, Sam, and their rescue dogs, George and Kramer (like the Seinfeld characters).

Trafton Dinwiddie, Policy Advisor, Office of the Speaker of the House, NC General Assembly



A native of Raleigh, N.C. and graduate of North Carolina State University with a degree in Political Science and History, **Trafton Dinwiddie** is a current Policy Adviser for Speaker Tim Moore in the North Carolina House of Representatives. He has been in the Speaker's office in different capacities since 2015, and now is the lead adviser on issues ranging from Agriculture, Energy, and Environment policies among others..

Kevin McLaughlin, Vice President of Government Affairs & External Relations, Duke Energy



Kevin McLaughlin serves as vice president of government affairs and external relations for Duke Energy in North Carolina. He leads the groups responsible for the state's government and community relations strategies. This includes managing strategic relationships with the governor's office, executive branch agencies, legislators, local officials and communities.

Before joining Duke Energy in January 2020, McLaughlin served as policy director for the U.S. Government and Education practice at SAS Institute. In this role, he was the principal liaison to governors, attorneys general and legislative leadership to increase brand awareness and encourage the adoption of data-driven strategies. Prior to joining SAS, McLaughlin was the deputy chief of staff for the governor of North Carolina. He managed all sections of the Office of the Governor and worked directly with Cabinet secretaries and agencies to develop and implement executive branch priorities. He also led legislative negotiations for bipartisan reform to both North Carolina workers and tort laws. Before serving in the governor's office, he was chief operating officer and general counsel for the N.C. Department of Administration. Prior to his public service, McLaughlin was a litigation attorney and partner in The Van Winkle Law Firm in Asheville, N.C.

McLaughlin currently serves as a member of the WakeMed Foundation Board and gubernatorial appointee to the 2020 Complete Counts Commission. He is a member of Class XVI of Leadership North Carolina, past member of the board of visitors for the University of North Carolina and former chair of the advisory board of the Y-Guides of the Triangle. He has also served as secretary for the American Council of Young Political Leaders.

Alexander C. Miller, Founder and Principal of Alex Miller Government Affairs



Alex began lobbying in 2006 and has built Alex Miller Government Affairs into a leading lobbying and public relations firm, ranked among the "10 Most Powerful Lobbyists in North Carolina". Prior to founding the firm, he served as an Infantry Squad Leader in the United States Army and a direct practice Social Worker. In addition to the

firm's lobbying work, Alex has managed state legislative campaigns, run independent expenditure political efforts, and advised statewide and national campaigns. He holds a Bachelor's in Social Work from Pacific Lutheran University and Masters with a focus in Public Policy from the School of Social Work at UNC Chapel Hill.

9:45a.m. **Keynote Plenary:**
North Carolina's Clean Energy Future

Jeremy Tarr, Senior Advisor for Climate Change Policy, Office of Governor Roy Cooper, North Carolina - **Moderator**



Jeremy Tarr is Senior Advisor for Climate Change Policy for North Carolina Governor Roy Cooper. Before accepting this appointment, he served as the NC Governor's Office policy advisor for energy, environment, transportation, climate change, and natural resources. Jeremy oversees implementation of Governor Cooper's Executive Order 80 ("North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy"), serves as Governor Cooper's designee on the North Carolina Climate Change Interagency Council, and represents North Carolina in the U.S. Climate Alliance. He also serves on the Executive Committee of the National Council on Electricity Policy.

Jeremy previously worked at the U.S. Environmental Protection Agency where he helped finalize the Clean Power Plan (CPP) and led development of the CPP's Rate-Based Model Rule. Prior to federal employment, he worked on national climate and energy policy at Nicholas Institute for Environmental Policy Solutions at Duke University and served as a law clerk for the Honorable Patricia Timmons-Goodson at the Supreme Court of North Carolina.

Heather Hildebrand, Statewide Initiatives Supervisor at NC Department of Transportation



Since graduation with a Master of Science in Civil Engineering from North Carolina State University with a focus on Environmental Programs, **Heather Hildebrand** has worked at the intersection of transportation and air quality. With Mobile Source Compliance with the Division of Air Quality, she gained expertise with alternative fuels and emission control and also managed grants through both state and federal funded programs. Currently, Heather works with NC DOT in the Transportation Planning Division where she supervises the Statewide Initiatives Group that oversees Transportation Conformity, the Congestion Mitigation Air Quality Program as well as statewide multi-modal planning. The group also helps lead efforts in NCDOT for resiliency and electrification of the transportation sector. Heather has volunteered as a mentor with FIRST Robotics and has worked with the EV Challenge since 1996 and currently sit on the board of the Carolina Electric Vehicle Coalition.

Sushma Masemore, Acting Assistant Secretary for Environment, NC Department of Environmental Quality



Sushma Masemore was recently named the Acting Assistant Secretary for Environment, and served as the State Energy Director since 2018.

Sushma and her team are working to bring clean energy solutions and sustainable practices to North Carolina businesses, citizens, and government operations. As the agency's Acting Assistant Secretary, Sushma oversees regulatory programs such as permitting of discharges to surface waters; issuance of air emissions permits; permitting of coastal development; management of solid and hazardous wastes, and regulation of energy, mining, and land resources..

For Executive Order 80, Sushma lead the development of the statewide greenhouse gas inventory, the NC Clean Energy Plan, and the NC Climate Risk Assessment and Resilience Plan. She is involved in the

implementation of various climate change mitigation, adaptation, and resiliency actions. As the Executive Designee, Sushma organizes and oversees the convening of the Climate Change Interagency Council.

Sushma has over 30 years of public and private sector experience related to pollution control and energy systems planning. For the Division of Air Quality, Sushma managed teams of engineers and scientists to develop air quality rules and state implementation plans. Prior to that, she held various supervisory and deputy director roles in environmental consulting.

Jennifer Weiss, Senior Policy Associate, Nicholas Institute for Environmental Policy Solutions, Duke University



Jennifer Weiss is a senior policy associate at Duke University's Nicholas Institute for Environmental Policy Solutions where she focuses on the intersection of energy and environmental policy, especially in the electricity sector.

Jennifer joined the Nicholas Institute in 2017 and works closely with state environmental regulators and utility commissioners on the intersection of energy and environmental planning. She provides information and research on a variety of intersecting renewable energy investment and conservation practices, including the exploration of innovative financing mechanisms and the analysis of the impact of new energy policies, mandates and programs on new and existing energy programs.

In addition to her energy work, Jennifer has over 13 years of consumer and small business banking experience and holds a master of environmental management degree from Duke's Nicholas School of the Environment, a master of business administration from the University of Michigan and a bachelor's degree from the University of California at San Diego.



Looking forward to a cleaner future.

We're committed to achieving net zero carbon and methane emissions across our nationwide operations by 2050. To reach this goal, we're using lower carbon sources like wind, solar, natural gas and nuclear.

Because cleaner air is good for all of us.



Actions Speak Louder



North Carolina's 26 electric cooperatives are leading the way to a brighter future for our 2.5 million members and local communities.



Sustainable, Affordable Energy

Pursuing a goal of net-zero carbon emissions by 2050 using new and existing resources to ensure electricity continues to be delivered at the lowest possible cost.



Reliability & Innovation

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Local Community Support

Enriching the lives of our local members through continued education initiatives, economic development and community-focused activities.



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ANTITRUST LAWS STATEMENT

In compliance with the Sherman Antitrust Act, the Clayton Act, the Federal Trade Commission Act, and the Robinson-Pamn Act, while participating at any event held by North Carolina State University there shall be no discussions among participants regarding agreements or concerted actions that may restrain competition. This prohibition includes the exchange of information concerning individual prices, rates, clients, market practices, vendor relations, or any other competitive aspect of an individual company's operation. Each participant is obligated to speak up immediately for the purpose of preventing any discussion falling outside these bounds.

Agenda — Monday, April 19

On-Demand Sessions Available

Utilities & Infrastructure

How North Carolina Utilities and Solar Developers Found Common Ground
Evolving Southeast Utility Regulation

Renewable Energy

Developing the Future of North Carolina's Clean Energy Industry and Workforce
Sharing North Carolina's Renewable Energy Success Story

Governmental & Institutional Buildings

Strategies for Funding and Procurement: 2021 and Beyond - Smart Infrastructure and Deferred Maintenance
Cybersecurity for Smart Buildings: A Changing Landscape of Benefits and Challenges

Commercial & Industrial Buildings

Energy Analytics in Commercial and Industrial Buildings
Cybersecurity for Operational Technology and Smart Buildings

Residential Homes

Buying Solar and Finding the Best Solar Companies in a Growing Market
Pathways to Decarbonization and Zero Energy Residential Homes

Grid Edge

Energy Resiliency: Leveraging Technology to Create a Stronger Grid
Grid Edge Technology Innovation: Key to Transforming Our Electric Grid

Hot Topic Sessions Available On-Demand

Data Analytics for Utility Applications

Microgrid Research at NC State

Open Source Modeling to Inform Resilient, Low Carbon Electricity for North Carolina

Solar-Plus for Electric Cooperatives: Tools and Best Practices for Electric Utilities Seeking to Deploy Energy Storage

Workforce Development and DEI in Offshore Wind

NC STATE UNIVERSITY

SPRING 2021 WORKSHOPS

May 3 - 7

REPVA: Advanced Photovoltaic Design and Installation (virtual)

June 7 - 9

Solar Storage

June 24 - 25

Operations and Maintenance of Photovoltaic Systems



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Agenda — Tuesday, April 20

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| 9:00 – 9:15a.m. | Welcome and Introductions: Stephen Kalland , Executive Director, NC Clean Energy Technology Center | | |
| | Governor Roy Cooper Remarks (pre-recorded) | | |
| 9:20 – 10:00a.m. | Keynote: Sharon Allan , Chief Strategy Officer, Smart Electric Power Alliance (SEPA) | | |
| 10:00 – 10:30a.m. | Keynote: Karen Wayland , CEO, The GridWise Alliance, Inc. | | |
| 10:30 – 11:00a.m. | Exhibit Hall Virtual Networking | | |
| 11:00a.m. – 12:30p.m. | Utilities & Infrastructure De-risking Energy Infrastructure Projects | Renewable Energy North Carolina Leading the Way on Low-impact Utility—Scale Solar Siting and Design | Governmental & Institutional Buildings New “Zero Energy” Building and Existing Building Tune-up Strategies |
| 12:30 – 1:30p.m. | Break and Virtual Exhibit Hall | | |
| 1:30 – 3:00p.m. | Commercial & Industrial Buildings Energy Policy in the Commercial and Industrial Buildings Sector | Residential Homes North Carolina Building Codes and Opportunities for the Next Generation of Energy Technology | Grid Edge Cleantech, Carbon and Policy: How Technology Is Helping North Carolina Meet Climate Goals |
| 3:00 – 4:00p.m. | Exhibit Hall Virtual Networking and Hot Topic Groups Drop in to these shorter sessions to learn more! 3:00 - 3:30p.m. — PV Recycling: Thinking Ahead to a New Market Opportunity 3:30 - 4:00p.m. — The Anatomy of Finding an Undetected Water Leak | | |

Individuals requiring a certificate for continuing education credits

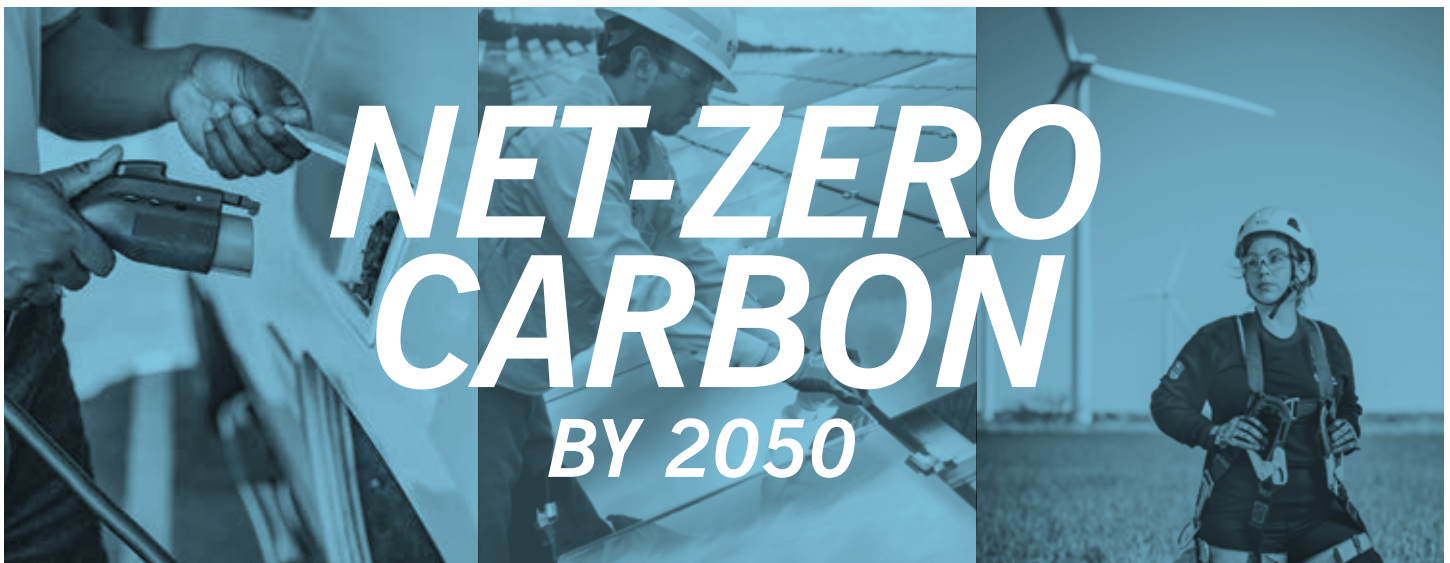
Professionals eligible for continuing education credits include, but are not limited to: Professional Engineers, Certified Public Accountants, AIA members, LEED professionals, BPI professionals, NC BAR members, and NABCEP certified professionals. Please note that not all sessions offer AIA LUs, AIA HSWs, CLEs, LEED General CE, and BPI CEUs.

Additional information about requesting continuing education credits is available on the virtual conference platform.

Certificates will be sent electronically 6-8 weeks after the conference.

Agenda — Wednesday, April 21

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| 9:00 – 9:10a.m. | Welcome and Introductions: Isaac Panzarella , Assistant Director, Technical Services, NC Clean Energy Technology Center, Representative Larry C. Strickland remarks (pre-recorded) | | |
| 9:10 – 10:30a.m. | Keynote Plenary: <i>Offshore Wind Opportunity for the Mid-Atlantic</i> Katharine Kollins , President of the Southeastern Wind Coalition (moderator) Andy Geissbuehler , Advisory Director (Renewable Resources Int'l), BVG Associates Brian Krevor , Lead Environmental Protection Specialist, Office of Renewable Energy Programs, Environment Branch for Renewable Energy, Bureau of Ocean Energy Management John Larson , Director of Public Policy & Economic Development, Dominion Energy Jenifer Mundt , Senior Policy Advisor, N.C. Department of Environmental Quality (DEQ) Eric A. Thumma , Senior Director for New Business Offshore Wind, Avangrid Renewables | | |
| 10:30 – 11:00p.m. | Exhibit Hall Virtual Networking | | |
| 11:00a.m. – 12:30p.m. | Utilities & Infrastructure Natural Gas: Transition Fuel or Here to Stay? | Renewable Energy Cleaning the Peak | Governmental & Institutional Buildings Mining Energy Data and How to Create an Energy Dashboard |
| 12:30 – 1:30p.m. | Break and Virtual Exhibit Hall | | |
| 1:30 – 3:00p.m. | Commercial & Industrial Buildings Decarbonization: Reducing a Facility's Carbon Footprint | Residential Homes High Performance & Healthy Homes: Co-Benefits and Improved Efficiency Outcomes | Grid Edge EVs in North Carolina: The Technologies Driving Deployment |
| 3:00 – 4:00p.m. | Exhibit Hall Virtual Networking and Hot Topic Groups Drop in to this shorter session to learn more! 3:00 - 3:30p.m. — Energy Resilience & Conservation Practices at Military Bases | | |



Duke Energy is delivering a cleaner energy future.

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Agenda — Thursday, April 22

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| 8:50 – 9:00a.m. | Welcome and Introductions: Diane Cherry , Founder, Diane Cherry Consulting. | | |
| 9:00 – 9:45a.m. | Opening Plenary: <i>What's going on at the Legislature?</i> Betsy McCorkle , Partner, Kairos Government Affairs, (moderator) Christina Cress , Regulatory Counsel, CIGFUR, Of Counsel Bailey & Dixon, LLP Trafton Dinwiddie , Policy Advisor, Office of the Speaker of the House, NC General Assembly Kevin McLaughlin , Vice President of Government Affairs & External Relations, Duke Energy Alexander C. Miller , Founder and Principal of Alex Miller Government Affairs | | |
| 9:45 – 10:30a.m. | Keynote Plenary: <i>North Carolina's Clean Energy Future</i> Jeremy Tarr , Senior Advisor for Climate Change Policy, Office of Governor Roy Cooper (moderator) Heather Hildebrant , Statewide Initiatives Supervisor at NC Department of Transportation Sushma Masemore , Acting Assistant Secretary for Environment, NC Department of Environmental Quality Jennifer Weiss , Senior Policy Associate, Nicholas Institute for Environmental Policy Solutions, Duke University | | |
| 10:30 – 11:00p.m. | Exhibit Hall Virtual Networking | | |
| 11:00a.m. – 12:30p.m. | Utilities & Infrastructure The Role of Nuclear Power in a Decarbonized Future | Renewable Energy Powering North Carolina's Blue Economy | Governmental & Institutional Buildings NC DEQ Updated Comprehensive Program: Everything USI and a Little BRIC Too |
| 12:30 – 1:30p.m. | Break and Virtual Exhibit Hall | | |
| 1:30 – 3:00p.m. | Commercial & Industrial Buildings Designing and Operating Energy Efficient and Healthy Buildings in a COVID World | Residential Homes Shaping Residential Electricity Demand | Grid Edge Energy Storage: Global Trends and Impact on North Carolina |
| 3:00 – 4:00p.m. | Squeaky Clean Energy Podcast — Live! | | |

2022 State Energy Conference of North Carolina

SAVE THE DATE!

April 26 – 27, 2022

McKimmon Conference and Training Center, NC State University, Raleigh, NC

Utilities & Infrastructure

How North Carolina Utilities and Solar Developers Found Common Ground

In 2007 and the years immediately following, North Carolina utilities, solar developers, policy makers and regulators collaborated to create a combination of State and federal policies and incentives which would propel North Carolina to be the second leading solar generation state. By 2016, this success had “unintended consequences” with a waiting list for utility connection to the grid of more than 500 solar projects. In the fall of 2020 utilities, solar developers and regulators again collaborated to set North Carolina’s solar industry on a winning track. Join us to learn how they found common ground and the potential for solar generation in North Carolina.

Moderator: Larry Ostema, Partner & Co-Chair, Energy Industry Group, Nelson Mullins
Rebecca Chilton, Corporate Counsel, Leyline Renewable Capital
Jack Jirak, Associate General Counsel, Duke Energy
Steve Levitas, Senior Vice President, Pine Gate Renewables
Brian Duncan, Vice President, Substation and Transmission Services, Pike Engineering

Evolving Southeast Utility Regulation

Is the regulated utility business model—with ever-increasing utility capital investment as its foundation—still viable? With increasing third-party generation investment, reluctance by utility commissions and stakeholders to embark on significant grid investments, “behind the meter” encroachment on load and little or no load growth, how will regulated utilities fare in the coming years? Will there be monopoly roles in the future and, if so, what will these be and how will a regulated utility be rewarded? Will the return on equity model continue to dominate or will utilities be rewarded more generously for service provided and risks taken? Will performance-based ratemaking and multi-year ratemaking be employed? How will generation, transmission, distribution and customer service innovation by utilities and others be promoted and rewarded? What’s the likelihood of change near term, and what may we expect in the southeast United States?

Moderator: George Baldwin, Principal, Baldwin Consulting Group
Richard C. (Rip) Sullivan Jr., Delegate (D-48), Virginia General Assembly
Chris Ayers, Executive Director, North Carolina Utilities Commission Public Staff
Belton Zeigler, Partner, Womble Bond Dickinson
Tim Echols, Commissioner, Georgia Public Service Commission

Renewable Energy

Sharing North Carolina’s Renewable Energy Success Story

As the third ranked state in installed solar capacity, North Carolina is a renewable energy leader not just in the southeast, but nationally. Success stories are perhaps the single most important factor in our transition to a stronger and more accessible renewable energy economy—success stories inspire, educate, celebrate, and expand future opportunities. They bring the good news of renewable energy to more people. This session will discuss the many ways that North Carolina’s renewable energy success story is told and shared more widely. It will examine different methods of storytelling and marketing that effectively educate, engage and inspire audiences in the southeast.

Moderator: Janelle Martin, Marketing Communications Specialist, NC Sustainable Energy Association
Cassandra Barba, Sales & Marketing Manager, Cape Fear Solar Systems
Susan Munroe, Director of Economic Development, Chambers for Innovation in Clean Energy
Jaime Simmons, Manager of Operations, Southeastern Wind Coalition

Developing the Future of North Carolina's Clean Energy Industry and Workforce

For North Carolina's clean energy industry to grow and thrive we need to tap into all the talent in our state—including people from groups that are underrepresented in the clean energy workforce now, such as women and people of color. This panel will describe efforts now underway from perspectives in the private sector, finance and policy practitioners.

Moderator: Melissa Malkin-Weber, Sustainability Director, Self-Help Credit Union
Allison Carr, Training Specialist, NC Clean Energy Technology Center
Robyn Hamilton, Supplier Diversity Manager, Self-Help Credit Union
Emily Violette, Global Account Executive, Schneider Electric

Governmental & Institutional Buildings

Strategies for Funding and Procurement: 2021 and Beyond - Smart Infrastructure and Deferred Maintenance

Learn about creative financing and procurement strategies, for energy projects, trending nationally and locally in NC to help plan and execute facility and campus energy improvements. Adaptive financing approaches make energy projects feasible and can reframe strategic planning and budgeting long-term to combat significant deferred maintenance backlogs that strain equipment and staff, impair building comfort and energy performance and prevent facility and campus modernization.

Tim Gasper, P.E., Energy Solutions Team Leader, Siemens
Todd Thurlow, Director, Distributed Energy Systems, Siemens

Cybersecurity for Smart Buildings: A Changing Landscape of Benefits and Challenges

The benefits from digitalization are great, but cybersecurity must keep pace. It is a growing concern that hackers are increasingly targeting operational technology (OT). Attacks against OT have increased significantly in the last few years, a spike driven by aging assets, outdated security practices and increased connectivity. This session will focus on a high-level overview of the strategies, benefits and challenges of cybersecurity issues, Smart Buildings and digitalization. Discussion will also address the changing threat landscape in the Smart Buildings sector, and what the industry must do to prepare and why cybersecurity is essential.

Bill Coyle, Manager National Business Development, Siemens Industry
Timur Kupa, Director, Information technology Solutions & Strategy, Siemens Industry
Adam Chapman, Cybersecurity Officer, Siemens Industry

Commercial & Industrial Buildings

Energy Analytics in Commercial and Industrial Buildings

The rapid proliferation of analytics in all walks of life is creating as much confusion as benefit. Utility energy consumption and facility operations are particularly well suited to using big data and artificial intelligence. The past year has also made it crystal clear that indoor air quality management is critical. This session will explore the current state of the art of facility and energy analytics--what it means, how to get your money's worth, the role of human intelligence and success stories in C&I facilities.

Moderator: Jack Connell, Connell & Associates
Kevin Lynn, Comprehensive Solutions, Brady
Jean-Marie Bergeal, VP, Clairvoyance
Paul Levy, P.E., CCP, Consultant, MCS Engineering
Daniel Kauffman, President, Enpira

Cybersecurity for Operational Technology and Smart Buildings

The benefits of "smart" systems are great, but cybersecurity must keep pace. The growth of the IoT, IP edge devices, SaaS and more, is a growing opportunity for hackers targeting operational technology (OT) in all facilities. The good news is that the investment in innovation to counter this threat is also growing, playing a pivotal role in bringing cutting-edge technology into the market. For facility owners and managers, there are measures beyond software updates and robust passwords that all facilities should implement now, to stay ahead of the bad guys. This session will provide attendees with a detailed look at the cybersecurity world: what is being done, what should be done, and what you can do today.

Moderator: Jack Connell, Connell & Associates
Kevin Smith, CTO, Tridium
Lisa Donnan, Partner, Option3Ventures

Residential

Buying Solar and Finding the Best Solar Companies in a Growing Market

North Carolina's solar market has historically been driven by larger, utility-scale deployment. But more recently, as installation costs have continued to decline and the rooftop solar industry has grown around the country, North Carolina has seen significant growth in homes using solar power. In 2020, around 5,500 Duke Energy customers installed solar. This brings the total number of Duke's customers with solar up to 18,000 — triple what it was in 2017. This statewide growth is occurring against a backdrop of new solar providers in our market, energy storage add-on options being offered, shifting federal tax credits, Duke Energy solar rebates, and other programs and fees that vary across utilities in the state like net metering policies. This complexity has made it more important than ever for consumers to understand what they are buying and who is the best company to buy from for their needs. This panel will explore important questions that consumers should ask when making a decision to go solar and selecting a contractor to work with. The panel will also examine online platforms, such as EnergySage, that help to vet reliable contractors and membership organizations like NCSEA that, through their member Code of Conduct, work to ensure the highest professional standards.

Steve Kalland, Executive Director, NC Clean Technology Center

Vikram Aggerwal, Founder & CEO, EnergySage

Ben Smith, Regulatory Counsel, NC Sustainable Energy Association

Pathways to Decarbonization and Zero Energy Residential Homes

Transformational technologies, consumer choices, and policy are leading a growing conversation about decarbonization in the U.S. economy in 2021. What will decarbonization look like in the residential building sector? Technologies and policies will likely contribute to decarbonization through energy efficiency in existing homes and the construction of new, zero energy homes. This session will cover case studies in clean energy development in individual homes and smart communities that are pointing the way to our clean energy future. Speakers will share tested ideas as zero energy ready homes are being built today.

Moderator: Jamie Hage, Southern Energy Management

Brian Adams, Ollo (Heron's Nest Environmental Village)

Jodi Bakst, Array Sustainable Living

Jay Epstein, Healthy Communities (Walnut Farm)

Cor Rademaker, Array Sustainable Living

Grid Edge

Energy Resiliency: Leveraging Technology to Create a Stronger Grid

Over the past two years, North Carolina has experienced numerous extreme weather events, which have impacted our electric grid and quality of life. What can be done to improve the resiliency of our existing grid, and what technologies are being developed to support localized, resilient power supply? This panel will discuss resiliency in North Carolina, the role of partnerships and the technologies paving the way for reliable power in the face of increasing grid stress, and how state policies and reports have influenced the move towards a more reliable, resilient grid.

Moderator: Dr. Robert Cox, Associate Director, Energy Production and Infrastructure Center, UNC Charlotte

Eric Dupoint, Executive Vice President and Chief Commercial Officer, PowerSecure, Inc.

Jay Oliver, General Manager, Grid Strategy and Asset Management Governance, Duke Energy

Jason Abiecunas, Vice President, Development, FlexGen

Grid Edge Technology Innovation: Key to Transforming Our Electric Grid

Technology innovation at the grid edge will be critical to achieving the decentralized, distributed, and decarbonized electric grid envisioned by utilities and consumers. What role will technology play as new generation sources and loads emerge? What can be done to accelerate the pace of deployment and achieve the "grid of the future"? This panel will feature leading Grid Edge startups who will discuss how their technology will transform the grid and their perspective about the future of electricity.

Moderator: Bob Irvin, Executive Director, Joules Accelerator

Amadou Fall, Chief Operating Officer, North Carolina's Electric Cooperatives

Jennifer Gallegos, Director of Programs & Communications, Yotta Energy

Tiffany Menhorn, Director of North American Sales, LineVision

Sunny Sanwar, Founder, Dynamhex

Bonus Track

Community Solar and Storage

Innovation is occurring in NC as community solar programs enlarge and develop new models to share benefits between utilities, customers, and land owners. This session explores how community solar programs in NC are including support for low-income subscriptions, integrating energy storage, and developing models to share benefits with low-wealth communities and landowners. Session viewers will gain insights about community solar project design, the financial benefits of energy storage, funding low-income subscriptions, and sharing community solar/energy storage value streams with low-wealth communities. Speakers will include representatives from EnerWealth Solutions, a company devoted to developing solar + storage solutions building community wealth; the NC Clean Energy Technology Center which is rolling out a low-income community solar subscription project; and other organizations engaged with community solar.

Moderator: Bob Leker, Environmental Program Consultant, NC Department of Environmental Quality

Ajulo E. Othow, Founder and CEO, EnerWealth Solutions

David Sarkisian, Senior Project Manager, NC Clean Energy Technology Center

Kathy Miller, Marketing Manager, Fayetteville Public Works Commission

Hot Topic Sessions: On-Demand Monday, April 19. Ready when you are.

Data Analytics for Utility Applications

Mike Mazzola, Tim Fairchild, Steve Whisenant

The theme of the Spring Meeting of the Center for Advanced Power Engineering Research (CAPER) is data analytics for utility applications. This hot topic will present key learnings abstracted from the presentations made by eleven different experts on the agenda of the meeting to be held on 25-26 March 2021. CAPER is an industry supported three-university consortium that includes Clemson University, NC State University, and University of North Carolina at Charlotte.

Microgrid Research at NC State

Ken Dulaney, Srdjan Lukic

Microgrids can be an important component of resiliency planning. There are already several successful microgrid deployments in North Carolina and hundreds more around the US. But what happens when we have hundreds of microgrids operating together? How can we optimize energy storage to minimize costs? Can we apply machine learning with building management systems to minimize demand on the microgrid? And can we lower the cost of microgrid deployment? These and other research questions are being answered at the FREEDM Center at NC State. This video will provide high level explanations of our current microgrid projects and review our lab facilities.

Open Source Modeling to Inform Resilient, Low Carbon Electricity for North Carolina

Joe DeCarolis, Jordan Kern

The fast pace of technology innovation combined with the need to address climate change—reducing emissions and ensuring reliability during extreme weather events—is leading to rapid transformation of the electricity sector. In North Carolina, as in many states, debates over the cost, resilience, and environmental sustainability of our future electricity system is conducted with opaque models by both utilities and stakeholders, leading to confusion and disagreement that can be difficult to resolve. Open source models and data currently under development can be used to produce more transparent and technically rigorous analysis that can be scrutinized and improved by a wide array of stakeholders in North Carolina.

Hot Topic Sessions: On-Demand Monday, April 19. (cont.)

Solar-Plus for Electric Cooperatives: Tools and Best Practices for Electric Utilities Seeking to Deploy Energy Storage

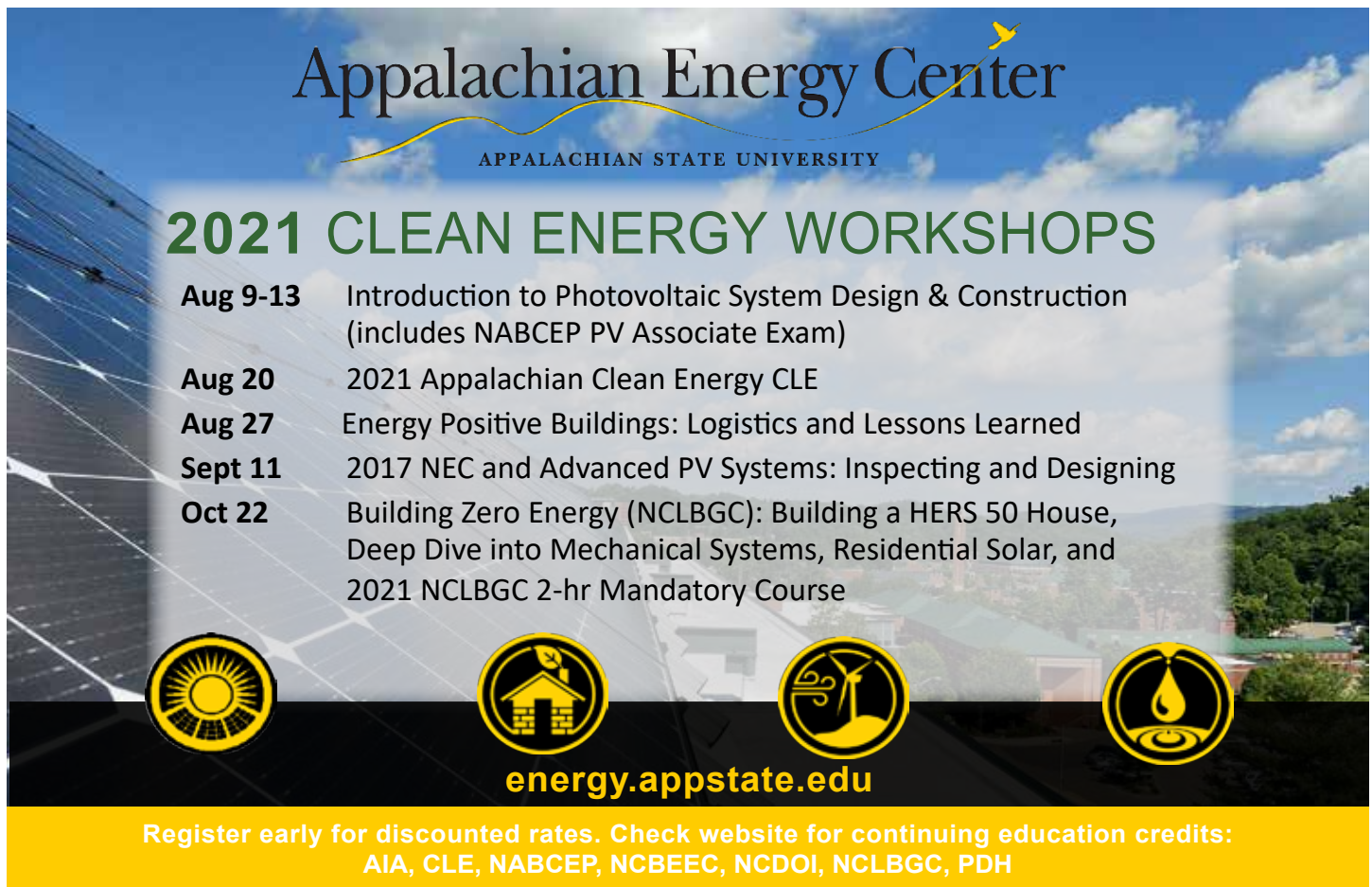
David Sarkisian, Simon Sandler, Jill Cliburn

The Solar-Plus for Electric Cooperatives (SPECs) Project, part of the National Renewable Energy Laboratory's (NREL) Solar Energy Innovation Network (SEIN), has been working with electric cooperatives across the country to figure out the ins and outs of energy storage. The SPECs team has developed guidelines for procurement of storage, an economic modeling tool for evaluation of use cases, and other resources to support use of these tools. Although the project focused on electric cooperatives, the lessons learned and resources produced should be useful for all sorts of utilities, including municipal and investor-owned utilities. Speakers will present the tools and resources developed by the project and explain their applicability.

Workforce Development and DEI in Offshore Wind

Diana Godlevskaya, Jennifer Palestrant, Julianna Schroeger





As the country moves forward to take advantage of the resource and economic development potential of offshore wind, engaging local workforce and underserved communities remains a priority. In this topic discussion, we'll discuss what programs already exist in states that are going full force on offshore wind and what insights can be gleaned for North Carolina.



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2021 CLEAN ENERGY WORKSHOPS

- Aug 9-13** Introduction to Photovoltaic System Design & Construction (includes NABCEP PV Associate Exam)
- Aug 20** 2021 Appalachian Clean Energy CLE
- Aug 27** Energy Positive Buildings: Logistics and Lessons Learned
- Sept 11** 2017 NEC and Advanced PV Systems: Inspecting and Designing
- Oct 22** Building Zero Energy (NCLBGC): Building a HERS 50 House, Deep Dive into Mechanical Systems, Residential Solar, and 2021 NCLBGC 2-hr Mandatory Course

energy.appstate.edu

Register early for discounted rates. Check website for continuing education credits: AIA, CLE, NABCEP, NCBECE, NCDI, NCLBGC, PDH

Hot Topic Live Sessions

April 20, 3:00 – 3:30 PV Recycling: Thinking Ahead to a New Market Opportunity

Simon Sandler, Sam Vanderhoof

PV recycling is a growing topic of discussion as solar provides a growing portion of electricity in the USA. This discussion will dive into the state of currently PV recycling technology, logistics, costs, barriers, and policies both in the US and abroad. Furthermore, we will unpack the results of the HB (2019) 329, the findings, and current implications for solar in NC, and what further policy might help achieve to reduce PV solar waste

April 20, 3:30 - 4:00 The Anatomy of Finding an Undetected Water Leak

Paul Bassett, Tim Gasper

This session will provide actual experience and case studies on the means and methods of what it takes to find an undetected water leak in a plumbing network. From water billing data analytics, to acoustical leak detection sensors, and boots on the ground, you will learn what it takes to find leaks, and what is the cost and savings to fix them. This presentation will help agencies develop programs that really work, spark the interest of key stakeholders, and provide tips and tools to use on your next energy savings performance contract/utility energy service contract projects.

April 21, 3:00 – 3:30 Energy Resilience & Conservation Practices at Military Bases

Jennifer Shaltanis, Michelle Wheeler

This spotlight session will feature energy resilience and conservation at Camp LeJeune and Fort Bragg, here in North Carolina. Participants on this session include Duke Energy and Ameresco, who are working to manage the Utility Energy Service Contract and its implementation on bases in the state. The financing plan of the partnership allows the bases to repay Duke Energy over time using the money it saves on its utility bills. Essentially, UESCs enable the military bases to do energy efficiency projects without the need for any additional funding, which makes these partnerships budget-neutral. This session will open the curtain behind these projects on military bases. The bases are the size of small cities making the list of items to do daunting and difficult in terms of priority setting.

Conference Sessions

Tuesday, April 20

Utilities & Infrastructure

11:00a.m. - 12:30p.m De-risking Energy Infrastructure Projects

The southeast United States has recently experienced the cancellation or delay of a variety of large energy infrastructure projects: nuclear, clean coal, natural gas pipeline, power transmission and others. Causes have included ill-conceived design, inability to timely execute construction, and unanticipated environmental and community issues. Can the region's energy infrastructure builders develop approaches that satisfactorily address these issues, allowing projects to be completed on time, at the quoted price and to the satisfaction of the asset owner, its stakeholders and the community?

Moderator: Charlie Bayless, Vice President, Senior Regulatory Counsel, North Carolina's Electric Cooperatives

Luis Martinez, Director of Energy, Southeast, Natural Resources Defense Council

Jeff Crisp, Energy Market Lead, Kleinfelder, Inc.

Steve Kiser, Vice President/Program Manager, Wood PLC

Nelson Peeler, Chief Transmission Officer, Duke Energy

Renewable Energy

11:00a.m. - 12:30p.m North Carolina Leading the Way on Low-impact Utility—Scale Solar Siting and Design

North Carolina is the second largest state in installed solar, after California, with nearly 50,000 acres either built or permitted. This is great progress in terms of reducing emissions and fighting climate change, but it is also a form of development, with an increasing trend of conversion of forestland. This technical session will examine ways to help facilitate low-impact solar growth in NC and provide guidance for siting and implementing solar in ways that help local economies and reduce impacts to wildlife and natural communities. This session will also provide case studies from demonstration solar farms in NC and other states.

Moderator: Daniel Brookshire, Regulatory and Policy Manager, NC Sustainable Energy Association

Liz Kalies, Director of Science, The Nature Conservancy, North Carolina Chapter

Kathryn Hill, Horticulturist, Strata Solar

Gabriela Garrison, Eastern Piedmont Habitat Conservation Coordinator, NC Wildlife Resources Commission

Governmental & Institutional Buildings

11:00a.m. - 12:30p.m New "Zero Energy" Building and Existing Building Tune-up Strategies

This session will cover both new and existing building energy systems design and operating strategies. New building strategies and case studies presented will include steps prescribed in the latest version of the ASHRAE Advanced Energy Design Guide (AEDG) to achieve "zero energy" buildings. Existing building strategies and case study presentations will include building tune-ups or re-tuning with minimal capital investments.

Thomas H. Phoenix, P.E., Fellow, ASHRAE, CPL Architects and Engineers, PC

David King, CEM, Energy Manager, Western Carolina University

Chris Martin Jr., P.E., BEI Regional Manager, McKim & Creed

Commercial & Industrial Buildings

1:30 - 3:00p.m. Energy Policy in the Commercial and Industrial Buildings Sector

The commercial and industrial (C&I) building sector faces performance expectations from executives, investors, customers and employees to lower operating expenses, reduce carbon footprint, manage climate risk, and provide a healthy indoor environment. This is putting added pressure on federal, state and local policymakers to quickly pass climate and energy policies that enable C&I businesses to fulfill their climate and energy goals. This session will review the current policy landscape for C&I buildings in NC, recent changes and recommendations, and the impact of regional and national trends. Attendees will learn of specific opportunities to leverage and/or influence policies that directly affect their business – whether as facility operators, consultants or contractors. Speakers will provide short presentations followed by full-panel responses to submitted questions.

Julie Robinson, Principal, Robinson Consulting Group

John Thigpen, Climate Advisor, National Resources Defense Council

Ivan Urlaub, Chief, Strategy & Innovation, NC Sustainable Energy Association

Residential Homes

1:30 - 3:00p.m. North Carolina Building Codes and Opportunities for the Next Generation of Energy Technology

While the next major code cycle update is scheduled to take place in 2025, the preparation starts much sooner than that, including work at the International Code Council, state level Building Code Council, and other organizations. The North Carolina Clean Energy Plan includes recommendations for action on energy code development. This session will cover a wide range of building code processes and ways that you can get involved and make your voice heard. You may not realize how much of an impact building codes have on your daily lives, human health, and economic opportunity. How do we make building codes that are effective for occupants and that also prepare them for the future that is rapidly coming upon us; where on-site renewable energy is installed, energy storage is available, electric vehicles are charging and supporting the grid? How does the initial cost of construction weigh against the life-cycle costs of operating and living in those buildings?

Moderator: Ward Lenz, Executive Director, NC Sustainable Energy Association

Ed Carley, Program Director for Buildings, National Association of State Energy Officials (NASEO)

Robert Privott, Director of Codes and Construction, NC Home Builders Association

Rob Zapple, Owner, Rob Zapple Design and Build Inc, New Hanover County Commissioner

Grid Edge

1:30 - 3:00p.m. Cleantech, Carbon and Policy: How Technology Is Helping North Carolina Meet Climate Goals

Many utilities and local governments are embracing aggressive carbon reduction goals, but it is unclear how they will reach their targets. This panel will highlight carbon goals from North Carolina utilities and communities, examine the policies enabling innovative partnerships and technology deployment, and explore how grid edge technologies such as renewables, energy storage and transportation systems will help reduce energy demand and greenhouse gas emissions

Moderator: Karen Kemerait, Partner, Fox Rothschild LLP

Zach Ambrose, Principal, Ambrose Strategy

Megan Anderson, Sustainability Manager, City of Raleigh

Catherine Kummer, Climate Advisor, City of Charlotte

John Ward, Town Manger, Town of Boone

Hot Topic Sessions

3:00 - 3:30p.m. **PV Recycling: Thinking Ahead to a New Market Opportunity** (see description page 17)

3:30 - 4:00p.m. **The Anatomy of Finding an Undetected Water Leak** (see description page 17)

Utilities & Infrastructure

11:00a.m. - 12:30p.m Natural Gas: Transition Fuel or Here to Stay?

Natural gas, due to advances in production technologies during the past decade, is now produced in such volume that the United States has become a significant natural gas exporter as well as a net energy exporter. However, concern exists as to whether natural gas can become a “net no carbon” energy resource. To accomplish this, significant changes must occur in managing production methane emissions, combustion technologies employed in producing electricity, and eliminating distribution methane emissions, particularly from aging utility systems.

Moderator: Neil Leslie, Director Energy Delivery and Utilization, Gas Technology Institute
David McGowan, Southeast Region Director, American Petroleum Institute
Sasha Weintraub, Senior Vice President Natural Gas Business , Duke Energy Piedmont Natural Gas
Thomas Koeppe, Future Frames Engineering Manager, Siemens Energy
Rob Howard, Chief Operating Officer, Cogentrix

Renewable Energy

11:00a.m. - 12:30p.m Cleaning the Peak

As clean energy resources make up a rapidly increasing share of North Carolina’s total energy generation, regulators, utilities, and independent power producers are now exploring ways to increase the share of clean energy resources used to meet the state’s peak electricity demand. This session will explore policy and technology options and tools for “cleaning the peak,” including a discussion of energy storage technologies, Clean Peak Standards and the role of electric vehicles

Moderator: Ron DiFelice, Managing Partner, Energy Intelligence Partners
Chase Counts, CEM, Senior Director of Operations, Community Housing Partners | Energy Solutions
Stan Cross, Electric Transportation Policy Director, Southern Alliance for Clean Energy
Katharine Kollins, President, Southeastern Wind Coalition

Governmental & Institutional Buildings

11:00a.m. - 12:30p.m Mining Energy Data and How to Create an Energy Dashboard

Are your building energy data currently on spreadsheets or inside unfriendly and disparate databases? Are you spending hours every month copying and pasting rows and columns of energy data in order to create your building energy or air quality reports? Do you wish you had an energy dashboard? Learn what it takes to streamline and automate repetitive data and reporting processes and how to create effective, meaningful and colorful energy dashboards. This is an advanced technical session that will include a deeper dive into data collection and processes.

Paul Braese, Energy Manager, NC Department of Public Safety
Alex Gasper, President, Gasper Software Solutions

Commercial & Industrial Buildings

1:30 - 3:00p.m. Decarbonization: Reducing a Facility's Carbon Footprint

Decarbonization is an increasingly popular topic that impacts all industries, including commercial buildings. As such, understanding the potential for decarbonization through design and construction is critical. This session will start at the 30,000-foot level with the role of buildings and utility companies in reaching decarbonization targets, show how to quantify impact and then review practical insights of decarbonization at the building level through real-world project examples. Sierra Nevada will share their efforts in reducing the carbon footprint of their facility in Mills River, NC (Asheville).

Moderator: **Renee Hutcheson**, FAIA, Willdan
Sharad Bharadwaj, Consultant, Energy & Environmental Economics
Dana Kose, LEED Fellow, Wildan
John Nichols, PEM, LEED AP BD+C, Director of Energy Performance, Moseley Architects
Leah Cooper, Sustainability Program Manager, Sierra Nevada Brewing Co.

Residential Homes

1:30 - 3:00p.m. High Performance & Healthy Homes: Co-Benefits and Improved Efficiency Outcomes

Due to the COVID-19 pandemic many of us have spent a lot of time at home and increased attention on our health over the past year. Within our homes, energy efficiency and indoor air quality improvements may have interrelated impacts and benefits. High performance homes provide a combination of energy savings, comfort, healthy environments, and durability. Furthermore, existing weatherization and energy efficiency programs already improve home comfort and indoor air quality. Learn how efforts to combine health and energy outcomes have the potential to attract additional financial benefits or resources and improved building outcomes

Moderator: **Donna Coleman**, Senior Housing Rehabilitation Officer, NC Housing Finance Agency (NCHFA)
Sara Hayes, Director - Health and Environment, American Council for an Energy Efficient Economy (ACEEE)
Josh Burton, Supportive Housing Construction Analyst & Team Leader of Home Ownership Development, NC Housing Finance Agency (NCHFA)
Jamie Hager, Green Building Specialist, Southern Energy Management
Nikki Krueger Building Science & Business Development Manager, Santa Fe Dehumidifiers

Grid Edge

1:30 - 3:00p.m. EVs in North Carolina: The Technologies Driving Deployment

There are many challenges associated with the increasing prevalence of electric vehicles (EVs) across North Carolina, including effects on the electrical grid. This technical panel will overview how the increasing number of EVs will impact the grid, discuss how technologies can integrate EVs with grid infrastructure, and detail the cutting-edge technology minimizing EV's impact on the grid (AI, battery storage, etc.), including how regulatory and financial barriers impact the integration of these new technologies.

Moderator: **Ken Dulaney**, Director of Industry and Innovation, Future Renewable Electric Energy Delivery and Management Systems Center, NC State University
Gary Rackliffe, Vice President, Market Development and Innovation North America, Hitachi ABB Power Grids
Diane Huis, Senior Vice President, Innovation and Business Development, North Carolina's Electric Cooperatives
Joe Nyangon, Senior Industry Consultant, Power & Utilities Innovation, SAS

Hot Topic Session

3:00 - 3:30p.m. Energy Resilience & Conservation Practices at Military Bases (see description page 17)

Utilities & Infrastructure

11:00a.m. - 12:30p.m The Role of Nuclear Power in a Decarbonized Future

Today, the majority of the United States' "no carbon" energy is produced by nuclear power plants located across the U.S. Over the last two decades, U.S. nuclear power plants have operated at capacity factors over 90%, but are being increasingly challenged due their higher cost of maintenance and operations when compared to other generation. While the last U.S. nuclear accident was over 40 years ago, the challenges at Fukushima do cause a lingering safety concern among some stakeholders. Among the issues this panel will discuss is the status of the current fleet of reactors, efforts to operate them for 80 or more years, and both U.S. and international efforts on the long-term management of used nuclear fuel. Additionally, the panel will also discuss current efforts to deploy advanced nuclear technologies and how these efforts could reposition the safety and cost competitiveness of the U.S. nuclear industry – and may reinvigorate the export market for U.S. nuclear technologies.

Moderator: Jeff Merrifield, Partner, Pillsbury Law

Ryan Fitzpatrick, Director for the Climate and Energy Program, Third Way

Rita Baranwal, Chief Nuclear Officer, Electric Power Research Institute

Gary Mignogna, Chief Executive Officer, Framatome

Tanya Hamilton, Senior Vice President Nuclear Corporate, Duke Energy

Renewable Energy

11:00a.m. - 12:30p.m Powering North Carolina's Blue Economy

This session will include a discussion of on-going research and testing to advance responsible marine energy solutions to power North Carolina's Blue Economy. Marine hydrokinetic resources are available in North Carolina's waters. On-going resources assessments, modeling, research, and testing are demonstrating the potential for marine energy solutions in North Carolina and beyond. Learn about the challenges and opportunities with responsibly harvesting marine hydrokinetic resources.

Moderator: George Bonner, PE, Director, NC Renewable Ocean Energy Program

Michael Atkinson, Ph.D., Assistant Professor of Mechanical Engineering, NC A&T University

Joseph DeCarolis, Ph.D., Professor, Civil, Construction & Environmental Engineering, NC State University

Madhav Manjrekar, Ph.D., Associate Professor, Electrical and Computer Engineering, UNC-Charlotte

Chris Vermillion, Ph.D., Associate Professor, Mechanical and Aerospace Engineering, NC State University

Governmental & Institutional Buildings

11:00a.m. - 12:30p.m NC DEQ Updated Comprehensive Program: Everything USI and a Little BRIC Too

Learn about NC Department of Environmental Quality (DEQ) Comprehensive Program update and utility data report, including collection, review and reporting of annual utility (including energy and water) consumption and cost data, as well as university and agency utility management plans including best practices for energy efficiency, cost estimation and financing options. Other topics will include DEQ's services, which include communication and training, assistance, strategic energy plan implementation, preliminary energy audits and oversight of Guaranteed Energy Savings Contracts (GESG). Also learn about the Federal Emergency Management Agency's Building Resilient Infrastructure and Communities (BRIC) grant program. The BRIC program supersedes the federal Pre-Disaster Mitigation program and is focused on nationwide hazard mitigation projects. Conference participants will obtain background information on the BRIC program and learn about potential opportunities that may assist with enhancing the energy-efficiency and resiliency of infrastructure.

Reid Conway, Senior Energy Specialist, NC Department of Environmental Quality, State Energy Office

Matthew Davis, Energy Specialist, NC Department of Environmental Quality, State Energy Office

Thursday, April 22 (cont.)

Commercial & Industrial Buildings

1:30 - 3:00p.m. **Designing and Operating Energy Efficient and Healthy Buildings in a COVID World**

COVID-19 has drastically changed the way we live, work and play. In this session, we will look at how building owners, property managers and designers have tackled the issues of creating environments that are safer and feel safer to occupants and how COVID-19 is affecting changes in the commercial marketplace. Ways in which designers are incorporating new contaminant control criteria into design to help mitigate transmission will be explored. We will review specific technologies being used to reduce contamination of the indoor environment. Presentations will focus on occupant needs and building operations, systems, and energy use in both existing buildings and new construction. Discussion will include how designers, building owners and operators balance the need to provide safe workplaces while also minimizing the increased energy impacts.

Moderator: Renee Hutcheson, FAIA, Willdan
Allen McCollum, Senior Development Manager, Kane Realty
Keith Pehl, P.E., President, Optima Engineering
Michael LaMontagne, AIA, Principal Architect, C&S Companies

Residential Homes

1:30 - 3:00p.m. **Shaping Residential Electricity Demand**

This session will examine the recent growth in the North Carolina residential solar market and talk about the process some leading players use to acquire potential customers in a way that reduces overall costs.

Moderator: Isaac Panzarella, Assistant Director, NC Clean Energy Technology Center
Don Bowman, Vice-President of Engineering & Operations, Wake Electric Membership Corporation
Jon Jacob, Energy Solutions Manager, Blue Ridge Energy
Todd Olinsky-Paul, Senior Project Director, Clean Energy Group
David Williamson, NC Utilities Commission Public Staff

Grid Edge

1:30 - 3:00p.m. **Energy Storage: Global Trends and Impact on North Carolina**

Effective rates and programs are indispensable tools for utilities to stimulate efficiency and demand reduction in the residential market and ultimately shape the electric load. This session will explore rate design, also referred to as green tariffs, as well as incentive programs that promote technologies such as rooftop solar, energy storage and plug-in vehicles.

Moderator: Diane Cherry, Founder, Diane Cherry Consulting
David Sarkisian, Senior Policy Project Manager, NC Clean Energy Technology Center
Joe DeCarolis, Professor, NC State University
Jamease Leonard, Manager, ScottMadden
Zak Kuznar, Managing Director, Energy Storage, Microgrid and CHP Development, Duke Energy

Squeaky Clean Energy Podcast — Live!

3:00 - 4:00p.m.

This year, we'll conclude the conference with a happy hour where you'll have the chance to tune in to a live recording of the Squeaky Clean Energy Podcast - a fresh take on North Carolina's evolving clean energy policy landscape. For this live recording, we'll recap the highlights of this year's conference by interviewing different speakers from the event. So bring your favorite beverage and tune in for a chance to be a part of the Squeaky Clean Energy Podcast!

We'd like to thank the many talented professionals who provided invaluable service to our conference this year:

Programming Committee

Track Managers:

Jack Connell, Connell Associates
David Doctor, E4 Carolinas
Tim Gasper, Siemens Industry, Inc.
Shannon Helm, NC Clean Energy Technology Center
Renee Hutchinson, Willdan
Jordan Jones, NC Sustainable Energy Association
Emmit Owens, Research Triangle Cleantech Cluster

Thank you also to all the volunteers who served as session coordinators, moderators and in many other key roles. Your many contributions help to bring a broad and diverse agenda to North Carolina's energy industry professionals.

Continuing Education Coordinator:

Allison Carr, NC Clean Energy Technology Center

A special thank you to the team of volunteers who provided the added staff needed to keep the conference running smoothly.

Conference coordination services provided by the NC Clean Energy Technology Center and the NC State University Office of Professional Development.

Individuals requiring a certificate for continuing education credits

Professionals eligible for continuing education credits include, but are not limited to: Professional Engineers, Certified Public Accountants, AIA members, LEED professionals, BPI professionals, NC BAR members, and NABCEP certified professionals. Please note that not all sessions offer AIA LUs, AIA HSWs, CLEs, LEED General CEs, and BPI CEUs.

Additional information about requesting continuing education credits is available on the virtual conference platform.

Certificates will be sent electronically 6-8 weeks after the conference.

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