

BUSINESS AND TECHNOLOGY STRATEGIES (BTS)

SUBJECT MATTER EXPERTS

*Jim Spiers, Russell Tucker, Craig Miller, Paul McCurley, Venkat Banunarayanan, Paul Breakman, Keith Dennis and Joe Hagerman can address questions on all topic areas.

Analytics, Resiliency & Reliability

David Pinney, Alvin Razon

- Dynamic and Static Modeling
- Volt-VAR Optimization, Solar, DR, and Storage Planning Models and Innovative Co-op Deployments
- Cost and Engineering Analysis of Distributed Energy Resources
- Software Development and Database Design

Madelyn Roche

- Co-op Distribution Data
- G&T Co-op Data
- G&T Equity and Capex Survey

Michael Leitman

- Demographic Analysis
- Co-op Economies & Development
- Policy & Regulatory Analysis

Broadband Infrastructure Development

Paul Breakman, Russell Tucker

- Business models and solutions
- Technology plans, roadmaps
- Broadband Due Diligence
- Resources and tools
- Advanced communications infrastructure solutions
- Economic analysis

Cybersecurity

Cynthia Hsu

- Cybersecurity Self Assessments
- Cybersecurity Training

Tony Thomas, Alvin Razon

- Cybersecurity for Industrial Control Systems
- Cybersecurity and MultiSpeak Standard

Patti Metro

- Cybersecurity and Reliability Standards

Distributed Energy Resources

*Brian Sloboda, Michael Leitman,
Jan Ahlen, Keith Dennis*

- Beneficial Electrification
- Measurement and Verification
- Pre-Pay Programs
- Electric Vehicles
- DSM Business Models (direct load, behavioral, time of use rates)
- Utility Connected Home
- Role of DER in meeting Environmental Objectives

Michael Leitman, Jan Ahlen

- Solar PV Technical and Economic Assessment
- Energy Storage Systems, Current State and Future
- Renewable Generation and Integration
- Developing Solar Strategies
- The Consumer-Centric Utility
- Co-op Renewable Resources

Robert Harris, Alvin Razon

- DER Interconnection and Operation Standards

Generation, Environment & Carbon

Dan Walsh

- Asset Management
- Carbon capture & utilization
- Multi-pollutant control technologies for power plants
- Impact of cycling on power plants
- Integrated Test Center– Carbon (ITC-C)
- 111-D and Future of Power Plants
- EPA MATS Mercury Air Toxics Standards
- EPA RHR Regional Haze Rule
- EPA CCR Coal Combustion Residuals
- EPA ELG Water Effluent Limitation Guidelines
- EPA 316(b) Cooling Water Intake Structures
- Fast and flexible generation options
- Utility scale energy storage
- Natural gas-fired combined cycle gas turbines
- Utility scale wind energy
- Utility scale solar energy

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Generation, Environment & Carbon cont.

Lauren Khair, Michael Leitman

- EIA-860: Annual Generator Report Data
- EIA-861: Annual Electric Power Industry Report Data
- EIA-923: Power Plant Operations Report Data
- Co-op Generation Resources

Katherine Loving

- Geographic Information Systems (GIS)
- Spatial Data Analysis

Joseph Goodenbery

- Economic Modeling
- Policy Impacts
- Levelized Cost of Energy

Human Capital

Delaine Orendorff, Ginny Beauchemin, Leigh Taylor, Beth Wray

- Executive Coaching
- Vision/Mission/Values Development
- Strategic Planning/Operational Action Planning
- Culture Alignment
- Organizational Development
- Leadership Development
- Change Management
- Developing High Performing Teams
- Training & Development Programs
- Succession Planning
- Career Paths

Executive Search

Leigh Taylor, Beth Wray, Ginny Beauchemin, Delaine Orendorff

- Executive and Senior Staff Searches
- Leadership Competency Model
- Interviewing
- Goal Setting and Appraisals
- New CEO Transitions
- Executive Coaching
- Orientation and Onboarding Analysis
- Leadership and Talent Assessments
- Resume/Interview Coaching

Leadership and Organizational Development

Leigh Taylor, Ginny Beauchemin, Delaine Orendorff

- Succession Planning
- Performance Management

Governance

Leigh Taylor, Ginny Beauchemin

- Board Self Appraisals
- Director Compensation Analysis

Resource Adequacy & Markets

Paul McCurley, Patti Metro

- Resource Adequacy
- Power System Planning and Operations
- Electricity Markets
- RTOs/ISOs
- Reliability

Lauren Khair

- Economic Modeling
- Department of Defense Initiatives
- EIA: Short Term Energy Outlook Forecasts
- EIA: Annual Energy Outlook Projections
- Energy Imbalance Market (EIM)

Joseph Goodenbery, Michael Leitman

- Economic Modeling and Forecasting
- Market Fundamentals
- Economic Drivers of Co-op Performance
- Policy & Regulatory Analysis

Sourcing Strategies

Paul Breakman, Lauren Khair

- Sourcing and procurement solutions
- Approaches and methods
- Technology considerations
- Lessons learned, case studies

Safety Performance

Bud Branham, Henry Cano

- Transformational cultural change
- Culture assessment
- Safety improvement planning
- Targeted safety improvement initiatives

Market Research

Mike Sassman, Ginny Beauchemin, Beth Wray

- Consumer and Employee Surveys
- Business to Business Surveys
- Actionable Data Analytics

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Transmission & Distribution

Alvin Razon

- Energy Storage Systems Technology
- Impacts of High-Penetration Solar
- Smart Grid Demonstration Project
- Substation of the Future
- Technology Developments – T&D Systems
- DER Economics and DSO Considerations
- Unmanned Aerial Vehicles
- Conservation Voltage Reduction
- Distribution Optimization

Tony Thomas, Alvin Razon

- Product Quality and Reliability Benchmarking
- Utility Automation Systems
- Communication Networks
- MultiSpeak®
- Cyber Security for Industrial Control Systems

Patti Metro

- NERC Regulations and Standards
- FERC/NERC Grid Reliability Standards, Compliance and Enforcement
- Rural Utilities Services (RUS) and NRECA Transmission & Distribution Engineering Committee (TDEC)
- Avian Issues
- Geomagnetic Disturbance (GMD) and Electromagnetic Pulse (EMP)

Robert Harris, Alvin Razon

- IEEE 1547– DER Interconnection
- National Electrical Safety Code
- National Electrical Code
- System Planning
- Rural Utilities Services (RUS) and NRECA Transmission & Distribution Engineering Committee (TDEC)

James Carter, Nick Klein, John Mason

- Treated Wood Poles and Crossarms
- Wood Preservatives
- Pole and other utility wood product inspections
- RUS wood product specifications
- General wood treatment processes and related business

BUSINESS AND TECHNOLOGY STRATEGIES (BTS)

WORK GROUPS

BTS Work Group	Work Groups	Mobile Phone	Email
Analytics, Resiliency & Reliability (A/R/R)	David Pinney- Lead Venkat Banunarayanan Paul Breakman Robert Harris Adaora Ifebigh Lauren Khair Michael Leitman Katherine Loving Madelyn Roche Tony Thomas	607-339-3506 703-907-6129 703-907-5844 571-205-3189 703-907-5849 703-907-6845 703-907-5864 703-907-5833 703-907-6147 703-850-4718	david.pinney@nreca.coop venkat.banunarayanan@nreca.coop paul.breakman@nreca.coop robert.harris@nreca.coop adaora.ifebigh@nreca.coop lauren.khair@nreca.coop michael.leitman@nreca.coop katherine.loving@nreca.coop madelyn.roche@nreca.coop tony.thomas@nreca.coop
Cybersecurity (CS)	Cynthia Hsu- Lead Joe Hagerman Adaora Ifebigh Lauren Khair Stan McHann Patti Metro Craig Miller Moin Shaikh Tony Thomas Russell Tucker	703-907-6663 703-907-5646 703-907-5849 703-907-6845 703-907-5817 703-626-9683 703-907-5899 703-850-4718 703-907-5823	cynthia.hsu@nreca.coop joe.hagerman@nreca.coop adaora.ifebigh@nreca.coop lauren.khair@nreca.coop stanley.mchann@nreca.coop patti.metro@nreca.coop craig.miller@nreca.coop moin.shaikh@nreca.coop tony.thomas@nreca.coop russell.tucker@nreca.coop
Distributed Energy Resources (DER)	Brian Sloboda - Lead Jan Ahlen Venkat Banunarayanan Paul Breakman Keith Dennis Adaora Ifebigh Michael Leitman	703-946-2812 703-907-5859 703-907-6129 703-907-5844 571-289-5615 703-907-5849 703-907-5864	brian.sloboda@nreca.coop jan.ahlen@nreca.coop venkat.banunarayanan@nreca.coop paul.breakman@nreca.coop keith.dennis@nreca.coop adaora.ifebigh@nreca.coop michael.leitman@nreca.coop
Generation, Environment & Carbon (G/E/C)	Dan Walsh- Lead Lauren Khair – Second Venkat Banunarayanan Paul Breakman Katherine Loving Michael Leitman Madelyn Roche	571-205-7112 703-907-6845 703-907-6129 703-907-5844 703-907-5833 703-907-5864 703-907-6147	daniel.walsh@nreca.coop lauren.khair@nreca.coop venkat.banunarayanan@nreca.coop paul.breakman@nreca.coop katherine.loving@nreca.coop michael.leitman@nreca.coop madelyn.roche@nreca.coop
Transmission & Distribution (T&D)	Robert Harris- Lead Patti Metro Brian Sloboda Tony Thomas	571-205-3189 571-334-8890 703-946-2812 703-850-4718	robert.harris@nreca.coop patti.metro@nreca.coop brian.sloboda@nreca.coop tony.thomas@nreca.coop
Resource Adequacy & Markets (RA/M)	Michael Leitman – Lead Allison Hamilton – Second Jan Ahlen Venkat Banunarayanan Paul Breakman Keith Dennis Joseph Goodenbery Lauren Khair Patti Metro Madelyn Roche Dan Walsh	703-907-5864 703-907-5824 703-907-5859 703-907-6129 703-907-5844 571-289-5615 703-907-5893 703-907-6845 571-334-8890 703-907-6147 571-205-7112	michael.leitman@nreca.coop allison.hamilton@nreca.coop jan.ahlen@nreca.coop venkat.banunarayanan@nreca.coop paul.breakman@nreca.coop keith.dennis@nreca.coop joseph.goodenbery@nreca.coop lauren.khair@nreca.coop patti.metro@nreca.coop madelyn.roche@nreca.coop daniel.walsh@nreca.coop
Management Services	Ginny Beauchemin Bud Branham Henry Cano Delaine Orendorff Mike Sassman Leigh Taylor Beth Wray	703-907-5744 561-670-3502 602-621-3905 571- 289-9023 712-477-2617 571-326-9547 703-907-5668	ginny.beauchemin@nreca.coop bud.branham@nreca.coop henry.cano@nreca.coop delaine.orendorff@nreca.coop mike.sassman@nreca.coop leigh.taylor@nreca.coop beth.wray@nreca.coop

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