



Empowering Tomorrow’s Planner: Navigating Uncertainty, Emerging Technologies, and a Changing Industry

EPRI's 43rd Annual Seminar on Resource Planning for Electric Power Systems
 Tuesday-Wednesday, October 29-30, 2024
 EPRI, 1325 G St NW #530, Washington, DC 20005

AGENDA

This event will operate under Chatham House Rule*

** Participants are free to use the information received, but neither the identity nor the affiliation of the speakers, nor that of any other participant, may be revealed.*

DAY 1: TUESDAY, OCTOBER 29	
TIME (ET)	SPEAKERS & TOPICS
8:00am - 8:30am	Welcome Breakfast
8:30am - 8:45am	<ul style="list-style-type: none"> • Opening Remarks: <i>Nidhi Santen, Program/Area Manager, Resource Planning for Electric Power Systems, EPRI</i> • Welcome Note: <i>David Young, Director, Energy Systems & Climate Analysis Group, EPRI</i>
8:45am - 9:00am	Introductions
9:00am - 10:00am	Keynote Address: “Planning our Electricity Future without a Crystal Ball” <ul style="list-style-type: none"> • <i>Joseph DeCarolis, Administrator, U.S. Energy Information Administration</i>
10:00am - 10:15am	Break
10:15am - 12:30pm	Session 1: Accelerating Demands for Emerging Technologies <i>Chair: Anand Kumar, EPRI</i> This session will examine the practical potential of emerging energy technologies in meeting clean energy goals. Panelists will discuss the importance of demonstration projects in advancing market adoption and the role of readiness metrics—such as technology and adoption readiness levels—in assessing deployment feasibility. The discussion will address key challenges, risks, and uncertainties in commercializing capital-intensive technologies. Additionally, insights on integrating these technologies into long-term resource planning will also be shared.
10:15am - 11:00am	Session 1 Opening Presentation <ul style="list-style-type: none"> • “De-Risking Emerging Technologies: Strategic Planning and Total Cost of Ownership Insights,” <i>Ronald Schoff, Director, Renewable Energy and Fleet Enabling Technologies, EPRI</i>

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<p>11:00am - 11:45am</p>	<p>Session 1 Panel Presentations</p> <ul style="list-style-type: none"> • “Addressing Risk and Uncertainties in Commercializing Capital Intensive New Technologies,” <i>Andras Marton, Director of Integrated Energy Practice, Independent Project Analysis</i> • “The Role of Demonstration in Market Adoption of Clean Energy Technologies,” <i>Angelena Bohman, Commercialization Analyst, Office of Clean Energy Demonstrations, U.S. Department of Energy</i> • “Emerging Technologies in Long-Term Resource Planning,” <i>Eric Palmer, Manager of Utility Planning, Minnesota Power</i>
<p>11:45am - 12:30pm</p>	<p>Session 1 Q&A and Discussion</p>
<p>12:30pm - 2:00pm</p>	<p>Lunch and Learn Sessions: New Applications of AI in Long-Term Resource Planning <i>Chair: Ryan Fulleman, EPRI</i> Electric companies may benefit from using AI capabilities to improve their long-term planning. What are the targeted opportunities for planners to leverage these techniques? Lunch and Learn sessions will explore these topics. Track sessions run in parallel; participants to choose one session to attend. Room assignments to be determined day of.</p> <p>Track 1: “Demystified Data plus Directed AI: Applying Intelligence Technologies to Energy Systems Planning,” <i>Hudson Hollister, Co-Founder and CEO of HData</i> This track will focus on how artificial intelligence can be used for sourcing data from federal and state utility commissions; details about agents and retrieval-augmented generation built on top of multiple large language models (LLMs); and the ability to generate, edit, execute, and share AI-driven research for each query. Several electric companies use HData's SaaS-based AI platform to source and analyze IRPs and commission dockets.</p> <p>Track 2: “AI is Boring So You Don’t Have to Be: Integrated Resource Modeling with the Help of LLMs,” <i>Greg Brunkhorst, Resource Planner at Tacoma Power</i> In this track, an avid daily LLM user will share his observations using tools such as ChatGPT and Cursor to perform data science and power system modeling work. He will provide examples and a framework for thinking about LLMs in the office. Tacoma Power is a publicly owned utility serving 190,000 customers in Tacoma, Washington and surrounding areas.</p> <p>Track 3: “PNNL’s PolicyAI Research: Building and Applying AI LLMs to Improve Clean Energy Project Permitting and Environmental Review,” <i>Sameera Horawalavithana and Sai Munikoti, Data Scientists, Pacific Northwest National Laboratory</i> In this track, PNNL will describe their PolicyAI research. This work leverages LLMs along with data from National Environmental Policy Act reviews and other scientific studies to inform permitting and review for power plants, transmission lines, and other infrastructure. Several PolicyAI applications showcasing successful real-world use cases will be demonstrated and the potential of AI in scaling NEPA expertise for clean energy projects will be discussed.</p>

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<p>2:00pm - 4:30pm</p>	<p>Session 2: Methods to Manage Uncertainty in Resource Planning <i>Chair: N. Srujana Goteti, EPRI</i> This session will address techniques for developing planning scenarios and robust resource portfolios for increasingly complex futures. How can planners develop good scenarios when the world becomes increasingly complex? What emerging scenario generation and intelligent scenario selection techniques may be useful for integrated resource planning? How are current IRPs approaching uncertainty? How can existing modeling tools be used to assess the impact of future uncertainties?</p>
<p>2:00pm - 2:45pm</p>	<p>Session 2 Opening Presentation</p> <ul style="list-style-type: none"> • “Managing Uncertainty with Intelligent Scenarios: Intelligent Scenarios for What?” <i>Mort Webster, Professor of Energy Engineering, Penn State University</i>
<p>2:45pm - 3:00pm</p>	<p>Break</p>
<p>3:00pm - 3:45pm</p>	<p>Session 2 Panel Presentations</p> <ul style="list-style-type: none"> • “Power Planning Under Uncertainty: A Regional Perspective,” <i>John Ollis, Manager of Planning & Analysis, Northwest Power and Conservation Council</i> • “Trends in Stochastic Modeling for Integrated Resource Planning,” <i>Rachel Moglen, Research Scientist, EPRI</i> • “Scenario Analysis in Resource Planning,” <i>Norm Richardson, President of Anchor Power Solutions, Division of Yes Energy</i>
<p>3:45pm - 4:30pm</p>	<p>Session 2 Q&A and Discussion</p>
<p>4:30pm - 5:00pm</p>	<p>Day 1 Wrap Up</p>
<p>5:00pm</p>	<p>Adjourn Day 1</p>
<p>6:00pm - 9:30pm</p>	<p>EPRI Program 178 Member & Speakers Reception and Dinner (by Invitation Only) Zaytinya by José Andrés at 701 9th St NW, Washington, DC 20001</p>

DAY 2: WEDNESDAY, OCTOBER 30

TIME (ET)	SPEAKERS & TOPICS
<p>8:00am - 8:45am</p>	<p>Breakfast</p>
<p>8:45am - 9:00am</p>	<p>Day 1 Recap and Day 2 Outlook</p>
<p>9:00am - 11:45am</p>	<p>Session 3: Evolving Energy Storage Modeling Practices <i>Chair: Silas Swanson, EPRI</i> Energy storage does not fit neatly into current long-term planning models due to the wide array of storage technologies and their operational features. Furthermore, proposed modeling solutions must balance the need to maintain model tractability. What are the methods to co-optimize multiple storage technologies in the same model, and what features are most important to model? How can models fairly assess energy storage options?</p>
<p>9:00am - 10:00am</p>	<p>Session 3 Opening Presentation</p> <ul style="list-style-type: none"> • “Evolving Energy Storage Modeling Practices,” <i>Patricia Hidalgo-Gonzalez, Assistant Professor, Mechanical and Aerospace Engineering, University of California San Diego</i>



10:00am - 10:15am	Break
10:15am - 11:00am	Session 3 Panel Presentations <ul style="list-style-type: none"> • “Storage in Planning Models,” <i>Karen Tapia-Ahumada, Senior Technical Leader, EPRI</i> • “Multi-day Storage: Modeling Inputs and Modeled Outcomes,” <i>Rachel Wilson, Manager of Strategy & Market Development, Form Energy</i> • “Evolving Energy Storage Opportunities,” <i>Ronald Franz, Director of Resource and Energy Planning, Dairyland Power Cooperative</i>
11:00am - 11:45am	Session 3 Q&A and Discussion
11:45am - 1:00pm	Networking Lunch
1:00pm - 3:45pm	Session 4: The Changing Cost Structure of the Electric Power Industry <i>Chair: Steve Dahlke, EPRI</i> This session will assess the changes in electric company revenue and spending in response to the increased deployment of technologies with zero variable cost. The system that emerges from electric sector decarbonization has low operational costs, which may not align with the volumetric rates used today. This raises the question of what the product of an electric company is, how they should charge for it, and how to plan for potential changes in cost structure. How could changes in revenue sources and rate structures alter the decisions made in system planning?
1:00pm - 2:00pm	Session 4 Opening Presentation <ul style="list-style-type: none"> • “Evolving Cost Structures, Investments, and Rate Design for a Decarbonized Grid,” <i>Paul Joskow, Elizabeth and James Killian Professor of Economics Emeritus, MIT</i>
2:00pm - 2:15pm	Break
2:15pm - 3:00pm	Session 4 Panel Presentations <ul style="list-style-type: none"> • “Opportunity on the Margin: Electricity Prices under Deep Decarbonization,” <i>Geoffrey Blanford, Principal Technical Executive, EPRI</i> • “Optimized Rate Designs for an Efficient and Clean Grid: Principles and Case Studies,” <i>Amparo Nieto, Sr. Principal, Energy Rates and Regulation, Charles River Associates</i>
3:00pm - 3:45pm	Session 4 Q&A and Discussion
3:45pm - 4:00pm	Day 2 Wrap-Up
4:00pm	Adjourn Day 2

For More Information about EPRI’s Program 178 on Resource Planning for Electric Power Systems, including membership and recent research results, please contact Nidhi Santen, P178 Program Manager at nsanten@epri.com or 650-630-9130.