Maria Roumpani, Ph.D

Founding Partner, mroumpani@currentenergy.group

Professional Summary

Maria is an expert in energy system planning with deep experience in quantitative modeling and economic analysis of grid planning and operations issues. She focuses on the economic and technical analysis of resource procurement, grid operations, and ratepayer impact questions, with experience in capacity expansion optimization, production cost simulation, and the development of customized analytical tools and frameworks. Maria has submitted expert testimony and comments on integrated resource planning, generation plant economics, unit commitment and dispatch practices, power cost analysis, and demand-side management plans. Her clients include consumer advocates, public interest organizations, energy project developers, government agencies, and large energy buyers.

Education

PhD, Management Science & Engineering
Stanford University – Stanford, CA (2018)

MSc, Electrical and Computer Engineering
National Technical University of Athens – Athens, Greece (2009)

Work Experience

Founding Partner, Current Energy Group (May 2024 – Present)

- Specializes in the economic and technical analysis of grid planning and operations issues, including capacity expansion, production cost, and energy storage dispatch modeling.

Founder, ELO Engineering Consulting (March 2024 – May 2024)

- Conducted analysis on energy policy and economic issues.

Technical Director, Strategen Consulting (2018 – March 2024)

- Led firmwide technical and economic modeling and analysis to support consulting engagements.
- Specialized in the use of modeling tools to inform grid planning and decarbonization issues.

Research Assistant, Precourt Institute for Energy, Stanford University (2011 – 2017)

- Conducted research in a wide range of topics, from game theoretical approaches in electricity markets to behavioral economics.

Researcher, Energy, Economics, & Environment Modeling Laboratory, National Technical University of Athens (2009 – 2010, 2015)

- Contributed to the development of long-term energy planning models.
- Developed a wholesale electricity market competition model.

Expert Testimony

Entergy Louisiana's Request for approval to construct Waterford 6 Power Station and Westlake Power Station, and for cost recovery. (DKT: U-37853)
Generation Resource Need
Testimony

2025 Biennial Consolidated Carbon Plan and Integrated Resource Plan of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (DKT: E-100, Sub 207) on Behalf of the Southern Alliance for Clean Energy, the Sierra Club, and Vote Solar
Integrated Resource Planning, Carbon Plan, Capacity Expansion Modeling
Testimony

Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Joint Application to Engage in a Business Combination (DKT: 2025-230-E) on Behalf of the Sierra Club
Business Combination, Ratepayer Impacts
Testimony

Virginia Electric and Power Company's Application for a Certificate of Public Convenience and Necessity to construct and operate the Chesterfield Energy Reliability Center (DKT: PUR-2025-00037) on Behalf of Advanced Energy United
Generation Resource Need, Alternatives Analysis
Testimony

Georgia Power Company's 2025 Integrated Resource Plan (DKT: 56002) on Behalf of Georgia Conservation Voters
Integrated Resource Planning, Load Forecasting
Testimony

Virginia Electric and Power Company's 2024 Integrated Resource Plan (DKT: PUR-2023-00066) on Behalf of Advanced Energy United
Integrated Resource Planning
Testimony

East Kentucky Power Cooperative, Inc. Application for Approval of Demand Side Management Tariffs (DKT: 2024-00370) on Behalf of Joint Intervenors Appalachian Citizens' Law Center, Kentuckians for The Commonwealth, and Mountain Association
Demand-Side Management
Testimony

NV Energy and Sierra Pacific Power Company 2025-2044 Integrated Resource Plan (DKT: 24-05041) on Behalf of Advanced Energy United
Integrated Resource Planning
Testimony

Duke Energy Carolinas and Duke Energy Progress 2023 Integrated Resource Plans (DKT: 2023-8-E & 2023-10-E) on Behalf of Sierra Club, South Carolina Coastal Conservation League, Southern Alliance for Clean Energy, Upstate Forever, and Vote Solar
Integrated Resource Planning
Testimony

Biennial Consolidated Carbon Plan and Integrated Resource Plans of Duke Energy Carolinas and Duke Energy Progress (DKT: E-100, Sub 190) on Behalf of the Southern Alliance for Clean Energy, Sierra Club, Natural Resources Defense Council, and North Carolina Sustainable Energy Association
Integrated Resource Planning, Carbon Plan
Testimony

Annual Review of Base Rates for Fuel Costs of Dominion Energy South Carolina, Inc. (DKT: 2023-2-E) on Behalf of the South Carolina Office of Regulatory Staff
Fuel Cost Recovery, Unit Commitment and Dispatch
Testimony

Annual Review of Base Rates for Fuel Costs of Duke Energy Progress, LLC (DKT: 2023-1-E) on Behalf of the South Carolina Office of Regulatory Staff
Fuel Cost Recovery, Unit Commitment and Dispatch
Testimony

Virginia Electric and Power Company 2023 Integrated Resource Plan (DKT: PUR-2023-00066) on Behalf of Advanced Energy United
Integrated Resource Planning
Testimony

PacifiCorp's Transition Adjustment Mechanism (DKT: UE 420) on Behalf of Sierra Club
Power Cost Recovery
Testimony

DTE 2022 Integrated Resource Plan (DKT: U-21193) on Behalf of the Michigan Energy Innovation Business Council
Integrated Resource Planning
Testimony

Duke Energy Carolinas and Duke Energy Progress 2022 Carbon Plan (DKT: E-100, Sub 179) on Behalf of the Tech Customers
Carbon Plan, Capacity Expansion Modeling
Testimony

Public Service Company of Colorado (DKT: 21A-0141E) on Behalf of Sierra Club
Electric Resource Plan
Testimony

Selection of Relevant Experience

Assessment of Clean Energy Alternatives to New Natural Gas Resources: Duke Energy Indiana Combined Cycle Project
Advanced Energy United (2023)
Gas Plant Alternatives, Capacity Expansion Modeling

- Compared the cost-effectiveness of Duke Energy Indiana's proposed 1,221 MW gas-fired combined cycle plant against an equivalent clean energy portfolio of solar, wind, and storage, finding the portfolio would save customers $68.5 million in 2027.
- Report

Assessment of Clean Energy Alternatives to New Natural Gas Resources: Part 2
Advanced Energy United (2023)
Gas Plant Alternatives, Energy Storage Economics

- Extended the analysis to proposed gas resources at three Indiana utilities, evaluating whether battery storage and other clean energy alternatives could meet the same need at lower cost.
- Report

Alternative Resource Plan for Salt River Project's Integrated System Plan
Sierra Club (2022)
Integrated Resource Planning, Capacity Expansion Modeling

- Used capacity expansion modeling to test the need for Salt River Project's proposed Coolidge gas expansion, finding it was not selected in the optimal portfolio and that clean energy alternatives would save customers $390 million to $740 million.
- Report

Energy Storage Alternatives for a Proposed Peaking Power Plant
Clean Energy Group (2021, 2022)
Energy Storage Alternatives, Capacity Market Economics

- Assessed energy storage and market capacity purchases as alternatives to Project 2015A, a proposed peaking plant in Peabody, Massachusetts, finding the participating municipal light plants could meet their capacity obligations at lower cost.
- Report | Additional Analysis

Summary of Alternative Resource Plan Analysis for Tucson Electric Power
Southwest Energy Efficiency Project (2020)
Integrated Resource Planning, Alternative Portfolio Analysis

- Conducted grid modeling and technical analysis to identify portfolios that meet the utility's stated clean energy commitments and maintain affordable and reliable service for customers, and explore whether additional environmental and economic savings could be achieved
- Report

Long Duration Energy Storage for California's Clean Reliable Grid
California Energy Storage Alliance (2020)
Long-Duration Energy Storage, Grid Reliability

- Modeled California's grid through 2045 at enhanced temporal resolution to quantify the long-duration energy storage needed to meet the state's decarbonization goals.
- Report