

## **ENERGY AND ENVIRONMENTAL ECONOMICS, INC.**

New York City, NY

*Senior Consultant*

Hugh Somerset supports E3's Integrated System Planning practice area on electric sector investment, policy, and planning topics. He works with a diverse group of clients including grid operators, state agencies, large energy users, utilities, and independent power producers to support decision making amid energy transition. His focus is on fundamentals analysis of markets and policy environments with high variability and uncertainty. To this end, Hugh often runs and works with capacity expansion, production cost, and loss-of-load probability models including RESOLVE, RECAP, SERVM, and PLEXOS, as well as building custom models and performing qualitative market research.

Hugh's recent E3 projects include:

**AESO, Assessment of Proposed Restructured Energy Market Design, 2024.** Technical lead on modeling future price outcomes under market design changes to the Alberta electricity system using PLEXOS LT and ST. Developed complex model features including strategic generator offers, trade under imperfect foresight, and novel ancillary service products. E3 analysis presented at market design stakeholder workshops.

**ERCOT, Performance Credit Mechanism (PCM) Design Support, 2023-2024.** Analyst modeling efficiency, cost, reliability, and volatility impacts of the Performance Credit mechanism under different mechanism designs to increase the reliability of the ERCOT system. Probabilistic resource-level revenues and system-wide outcomes modeled via Monte-Carlo production cost modeling in SERVM.

**Confidential Technology Company, Emissions Impact of Voluntary Clean Energy Procurement, 2023-2024.** Analyst evaluating impact of annual vs hourly approaches to voluntary clean energy procurement via a system-wide long-term capacity expansion modeling study and illustrative project development case studies. Key findings were the enduring role of Renewable Energy Credits in filling the missing money gap for clean energy projects and long-term offtake contracts for derisking merchant investments.

**Hawaiian Electric, Resource Adequacy and Reliability Support, 2023.** Analyst evaluating ELCC, HDC, and HEC resource accreditation frameworks for deep decarbonization resource planning. This project evaluated the quantitative and qualitative consequences of Hawaiian Electric adopting a new accreditation framework through a process of iterative capacity expansion and loss-of-load probability modeling, with RESOLVE and RECAP, and a technical stakeholder engagement process.

**Confidential Client, Dynamic Operating Reserves Study, 2023 – 2024.** Analyst characterizing the current and future need for imbalance operating reserves to cover Balancing Area's operational forecast errors from 15-minute to 24-hour ahead horizons. Project used E3's probabilistic neural-network regression model, RESERVE, to quantify time-varying operating reserve needs to cover system net load forecast error.

### **Omaha Public Power District (OPPD), Near-term Resource Planning and Procurement, 2022 – 2023.**

Analyst examining resource investment options for OPPD through 2030 using E3's capacity expansion model, RESOLVE. E3's analysis informed OPPD's multi-resource procurement and winterization decision to meet load growth and decarbonization targets amid limited near-term resource availability.

### **PACIFIC GAS & ELECTRIC COMPANY**

*Integrated Grid Planning Intern*

San Francisco, CA

May 2021 – August 2021

Analyzed forecasted distribution feeder overloads to identify suitable investments in non-wire alternatives. Summarized feeder-level investment needs and investment deferral savings for the Grid Needs Assessment (GNA) and Distribution Deferral Opportunities Report (DDOR) within PG&E's annual Distribution Resource Plan.

### **ASCEND ANALYTICS**

*Energy Analyst Intern*

Oakland, CA

June 2020 – July 2020

Analyzed revenue potential of grid-scale batteries in ERCOT and CAISO. Built a Python model to estimate future solar and wind ELCCs. Wrote scripts to post-process BatterySIMM model outputs.

## Education

University of California, Berkeley

*B.Sc., Energy Engineering*

Berkeley, CA

May 2022

## Select Publications

1. E3, "PCM Design Strawman White Paper" For the Electricity Reliability Council of Texas, Inc (2024). <https://interchange.puc.texas.gov/search/documents/?controlNumber=55000&itemNumber=41>
2. E3, "Consequential Impacts of Voluntary Clean Energy Procurement" Partially funded by Meta Platforms, Inc (2024). [https://www.ethree.com/wp-content/uploads/2024/07/E3\\_VoluntaryCorporateProcurement\\_HourlyEmissions\\_June-2024.pdf](https://www.ethree.com/wp-content/uploads/2024/07/E3_VoluntaryCorporateProcurement_HourlyEmissions_June-2024.pdf)
3. E3, "Assessment of Market Outcomes & Efficiency of the Proposed Restructured Energy Market Design" For the Alberta Independent System Operator (2024). [https://www.ethree.com/wp-content/uploads/2025/01/E3\\_REM\\_Report.pdf](https://www.ethree.com/wp-content/uploads/2025/01/E3_REM_Report.pdf)