Selma Sharaf, Senior Associate

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Senior Associate*, Apr 2026–Present; *Associate*, Apr 2025–Apr 2026; *Research Associate II*, Apr–Aug 2023; *Research Associate I*, Jul 2022–Apr 2023

- Consults on energy-sector issues, including resource planning, wholesale markets, and storage.
- Conducts capacity expansion and production-cost power-sector modeling using EnCompass.
- Prepares testimony for utility regulatory proceedings on behalf of consumer and environmental advocates.

Stanford Energy Control Lab, Stanford, CA. *Graduate Research Assistant*, Aug 2024–Jan 2025

- Led interviews with ISOs/RTOs and utility-scale storage owners to draw insights into state-of-charge management.
- Translated multi-stakeholder research into reports and presentations, communicating key findings for enhancing storage operations to Bits & Watts industry members.

California Independent System Operator (CAISO), Folsom, CA. *Shultz Fellow in Market Analysis and Forecasting*, Jun–Aug 2024

- Developed a simplified offline market clearing model in R using a linear programming optimization framework to support policy and market design.
- Synthesized and analyzed data to initiate development of a predictive model for estimating utilization factors of ancillary service awards, aiming to improve storage state-of-energy calculation.

ADL Ventures, Cambridge, MA. *Clean Energy Intern*, Sept 2021–May 2022

- Consulted on decarbonization and clean energy infrastructure deployment projects for electricity industry stakeholders.
- Facilitated successful launch of Essence grid monitoring platform serving electric co-ops.

Sustainable Energy Advantage, LLC., Framingham, MA. *Research Associate Intern*, Jun–Aug 2021

- Performed data-driven modeling and research to assist with renewable energy market analysis in the U.S. Northeast.

Bennett College, Greensboro, NC. *Climate Action Plan Research Intern*, Jan–Jun 2021

- Created college's first-ever climate action plan through stakeholder engagement and data analysis.

Atmospheric Chemistry and Composition Modeling Group, MIT, Cambridge, MA. *Undergraduate Student Researcher*, Jan 2019–Jan 2021

- Performed statistical analysis on meteorology dataset to study geographic and temporal trends in U.S. heat waves.
- Modeled impacts of trends on surface ozone concentrations to provide process-level insight into these interactions.
- Presented poster at the 2020 AGU Fall Meeting titled, "A historical analysis of heat waves over the continental US and their impact on regional air quality (Selma Sharaf, Sidhant J. Pai, Colette L. Heald)."

Resilient Infrastructure Networks Lab, MIT, Cambridge, MA. *Undergraduate Student Researcher*, Jun–Aug 2020

- Analyzed Planet Labs imagery to assess COVID-19 lockdown impacts on key US supply-chain corridors.
- Built classification neural network to identify discriminative regions of satellite images before/after lockdowns.

City of Strasbourg/Eurometropolis, Strasbourg, France. *Summer Sustainability Intern*, Jun–Jul 2019

- Developed sustainability strategy for the City's role in the 2024 Paris Olympics.
- Delivered recommendations for improving sports facilities based on LEED standards.

EDUCATION

Stanford University, Stanford, CA
Master of Science in Atmosphere & Energy, 2025

Massachusetts Institute of Technology, Cambridge, MA
Bachelor of Science in Environmental Engineering, minor in Management, 2022

PUBLICATIONS

Knight, P., S. Sharaf, S. Chavin, E. Ashley, A. Zeng, E. McGarvey, S. Shenstone-Harris, R. Aidun. 2026. *Assessing Electricity Resource Adequacy in Pennsylvania and PJM*. Synapse Energy Economics, Mondre Energy, and Aspen Technologies for the Pennsylvania Public Utility Commission.

Sharaf, S., S. Kwok, R. Aidun, T. Comings. 2026. *Comments on IURC's Unit Retirement Commission Staff Report: NIPSCO's Michigan City Unit 12*. Synapse Energy Economics for Earthjustice and Citizens Action Coalition of Indiana.

Springer, C., T. Nguyen, I. Weiss, S. Sharaf, P. Eash-Gates, M. Whited. 2026. Rate Design to Unlock Industrial Electrification. Synapse for The Center for Applied Environmental Law and Policy.

Sharaf, S., C. Springer, C. Resor, I. Weiss, P. Knight, S. Shenstone-Harris. 2026. Mapping the Barriers to Electricity Generation Development in Pennsylvania. Synapse for Clean Tomorrow.

Sharaf, S., S. Chavin, E. Ashley, A. Star, P. Knight, C. Springer. 2026. Planning Ahead: How Integrated Resource Planning in Wisconsin Can Lower Energy Bills. Synapse for Advanced Energy United.

Knight, P., S. Kwok, E. Ashley, A. Glaser Schoff, S. Schadler, S. Sharaf, A. Zeng, A. Napoleon. "Making Energy More Affordable in New York." Presentation prepared for the Natural Resources Defense Council and the Evergreen Collaborative, March 2026.

Chavin, S., P. Knight, S. Sharaf, A. Zeng. 2026. "How Increased Clean Energy Deployment in Indiana Can Pave the Way for Lower Bills." Synapse Energy Economics for Advanced Energy United.

Resor, C., S. Chavin, P. Knight, S. Sharaf. 2026. *The Next Decade in PJM: A Path to Reliability and Affordability*. Synapse Energy Economics for Advanced Energy United.

Sharaf, S., P. Knight, D. Karabakal. 2025. *Powered Up: Evaluating the Year-Round Benefits of Solar and Storage in Massachusetts*. Synapse Energy Economics for Solar Energy Industries Association.

Sharaf, S., P. Knight, D. Karabakal. 2025. *Sunlight and Storage into Savings: Evaluating Energy Cost Savings from Distributed Solar and Storage Additions in New York*. Synapse Energy Economics for Coalition for Community Solar Access.

Frost, J., P. Knight, S. Sharaf, L. Metz, S. Kwok. 2023. *RGGI's Economic Benefits for Pennsylvania: Exploring the benefits of the Regional Greenhouse Gas Initiative.* Synapse Energy Economics for Evergreen Collaborative.

SKILLS

R, Python, Julia, MATLAB, Vensim, SimaPro, Microsoft Office Suite.

Resume updated October 2026