



Paula Charles

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ENERGY AND ENVIRONMENTAL ECONOMICS, INC.
Consultant

San Francisco, CA

Paula Charles supports E3's Asset Valuation practice area, focusing on storage analysis and valuation, with an emphasis on battery valuation but also including long duration and pumped hydropower. She works across markets, including California, Texas, and New York. Paula is a modeling lead for RESTORE, E3's price-taker optimization model, both employing the tool to evaluate distributed energy resources and updating the model itself. She has also worked on renewable energy siting and permitting and is a key contributor to E3's investment-grade market forecasts and data center load growth analysis.

Paula joined E3 after earning a Master of Science in Civil and Environmental Engineering at Stanford University. As a Shultz fellow at the Hawaii Public Utilities Commission, she worked on promoting the utilization of distributed energy resources for grid services. Prior to earning her master's degree, Paula also worked for sustainability consulting firms in Paris and New York City on various topics including microgrid optimization and clean fuels. In addition to her master's degree, Paula holds a B.S. in Mechanical Engineering from Ecole Polytechnique.

Notable E3 projects include:

California Public Utility Commission (CPUC), Avoided Cost Calculator (ACC), 2024. Supported model development of a new tool E3 developed for the ACC to compute avoided costs of distributed energy resources, including energy, capacity, and greenhouse gas savings and transmission distribution. Contributed to the market equilibrium model to compute storage revenues.

Clean Air Task Force (CATF), Natural Resources Defense Council (NRDC), The Nature Conservancy (TNC), Assessment of Renewable Energy Siting and Permitting Policies, 2023-2024. Developed recommendations for renewable siting and permitting processes that can support deployment of renewable energy projects at scale while ensuring positive social and environmental impacts. Performed quantitative analysis of siting and permitting policy and renewable development in eight states – California, Illinois, Indiana, Maine, New York, Ohio, Virginia, and Washington – including assessments of all proposed projects and their size, impact, process, and timeline.

Confidential Clients, Various Energy Investors and Developers, 2023-2024. Customized E3's market forecasts, primarily in ERCOT and CAISO, to create nodal price forecasts for investors and developers looking to assess the value of their projects. Used RESTORE to compute storage revenues and their forecasted outcomes for the next 25 years.

Confidential Community Solar Developer, 2023. Analyst for a project researching the potential impact of a community solar project in several eastern states, examining policies, historical success, and market size across these states. Project also included a community solar retail rate forecast.

Confidential Storage Developer, 2023. As part of a valuation project, computed forced outage rates of large-scale batteries across CAISO and ERCOT to obtain a more accurate view of revenue forecasts. This was used by the developer for decision-making around their market entry points.

HAWAII PUBLIC UTILITIES COMMISSION

Shultz Energy Fellow

Honolulu, HI

June 2022 – September 2022

- Built a new performance incentive mechanism to promote the utilization of Distributed Energy Resources for grid services. Work became part of an ongoing proceeding and was used for building new public policies.

ALTANOVA

Sustainable Engineering Associate

New York, NY

February 2021 – August 2021

- Developed a new service to offer microgrids for buildings in New York City as a comprehensive service.
- Built financial and technical criteria and located the most promising clients using data analysis.
- Modeled the carbon and economic impact of the microgrid and optimized its size on the different buildings.

BLUNOMY

Energy Analyst

Paris, France

August 2020 – January 2021

- Conducted analyses with a focus on key issues related to the energy transition: carbon neutrality ambitions, hydrogen, carbon capture, biofuels, electrical grid.
- Drafted recommendations on the strategy of our clients on these markets (leading industry players, banks).

LABORATOIRE DE METEOROLOGIE DYNAMIQUE

Climate Research Intern

Palaiseau, France

March 2020 – July 2020

- Reviewed the tuning of the climate model, particularly of the coupled atmosphere-continental surface components.
- Corrected biases of the model during heatwaves by adjusting the parameters involved in the water and energy balances.

ALTANOVA

Sustainability Analyst

New York, NY

June 2019 – September 2019

- Worked on a project to enable a Caribbean Island to be fully renewable: modeled the consumption, looked for new renewable generation means and improved the final energy mix.

Education

Stanford University

Stanford, CA

M.S., Civil and Environmental Engineering

2023

Ecole Polytechnique

Palaiseau, France

M.Eng., Clean Energies and Tech. Innovation

2020

Ecole Polytechnique

Palaiseau, France

B.S., Mechanical Engineering

2019