

Clement Messeri

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ENERGY AND ENVIRONMENTAL ECONOMICS, INC. *Consultant*

New York, NY

Mr. Messeri supports E3's market price forecasting, battery dispatch, production cost analysis, and capacity expansion modeling. He also contributes to E3's PLEXOS modeling, maintaining postprocessing scripts to automatically process PLEXOS outputs into forecasts. His work also includes analysis of battery financing and battery investments. Prior to joining E3, Mr. Messeri was a Battery and Business Engineer at Tyfast Energy Corporation where he designed battery solutions for ultra-fast charging batteries and secured multiple high-profile customers for battery products. As a student researcher at Lawrence Berkeley National Lab, he focused on high-temperature energy storage research projects. He holds both a B.S. in Materials Science Engineering and Nuclear Engineering and an M.S. in Materials Science Engineering from the University of California, Berkeley College of Engineering.

Select E3 projects include:

Off-the-Shelf Market Price Forecasts (2023-ongoing). Contributing to E3's fundamentals-based market price forecasts for the WECC, ERCOT, and NYISO markets. Also provides specific sensitivities for bespoke analysis for E3 clients.

Day Ahead Market Cost Benefit Study (2023). Completed PLEXOS post-processing scripts and analyzed specific PLEXOS outputs for individual model scenarios as part of a broad E3 project analyzing new day-ahead markets within the Western Electricity Coordinating Council (WECC) footprint.

Confidential Developers, Battery and Storage Asset Valuations (2023 – 2024). Supported developers through the examinations of specific technologies and the policy developments relevant to that specific technology. Includes script development to support modeling in E3's RESTORE tool as well as nodal price forecasting. Technologies examined include lithium-ion, iron air, compressed air, thermal storage, and flow batteries. Includes elaboration of level 2 nodal forecasting methodology for battery energy storage systems in Texas and New England

AESO REM Market Design Options Testing (2024). Wrote software to forecast market power in Alberta at the unit-hour level dynamically with PLEXOS dispatch both for production cost modeling and capacity expansion modeling, leveraged and adapted PLEXOS post-processing scripts to correctly calculate prices and costs associated with each REM elements

TYFAST ENERGY CORPORATION *Battery and Business Engineer*

Berkeley, California
February 2022 – July 2023

- Designed battery solutions for customers to use Tyfast ultra-fast charging batteries
- Led hiring and onboarding process for new summer interns

- Led sales meetings with potential clients, working with engineers to implement Tyfast solutions into future devices
- Created and executed customer intake workflows leading to Tyfast's first list of paying customers
- Secured multiple high-profile customers for Tyfast battery products
- Implemented CRM software and lead NSF I-Corps team to maximize our customer outreach efficiency
- Collaborated with R&D team to make sure the most useful battery was being generated and analyzed

LAWRENCE BERKELEY NATIONAL LAB, ENERGY TECHNOLOGIES AREA

Berkeley, CA

Student Researcher

September 2021 – July 2023

- Worked with Lin Yang, Nate Weger, and Sean Lubner under Professor Ravi Prasher on the High Temperature Energy Storage project
- Prepared composite micro particle pellets, sintering and cycling these pellets up to 2000°C to control microstructure
- Produced multi-physics simulations of microstructure using Fusion360 and Comsol to rank each candidate material
- Resolved key research bottleneck around candidate materials failing through high temperature XRD analysis
- Participated in writing of a proposal for a multi-million dollar grid level energy storage project prototype of my research
- Master's thesis paper

STMICROELECTRONICS

Grenoble, France

Engineering Intern

May 2021 – August 2021

- Worked in ST's Innovation team under Dr. Urard on the project Artificial Intelligence for Quantum Simulations
- Successfully created and automated classical and quantum atomistic simulations
- Created an ML neural network that could predict potential energy of a localized system around an atom
- Led project team and found most effective way forward to improve simulation and neural network quality.

UNIVERSITY OF CALIFORNIA, BERKELEY COLLEGE OF ENGINEERING

Berkeley, CA

Student Research Assistant

January 2021 – September 2021

- Worked under Professor Daryl C. Chrzan, former chair of the Materials Science and Engineering (MSE) department, on the exfoliation of 2D materials
- Coded and ran Large-Scale Atomic/Molecular Massively Parallel Simulator (LAMMPS) simulations of the exfoliation of van der Waals-bonded 2D materials

Education

University of California, Berkeley
M.S., Materials Science Engineering

Berkeley, CA
2023

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B.S., Materials Science Engineering and Nuclear Engineering,

Berkeley, CA
2022