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Pietro Visaggio

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Ph.D. candidate specializing in Industrial Organization and Energy Economics with expertise in electricity markets, battery storage, and renewable technologies. My research investigate how Battery Energy Storage Systems (BESS) are integrated into electricity markets, and how their utilization affects outcomes such as market power, consumer surplus, and the integration of renewable resources.

Fields of Interest

Industrial Organization, Energy Economics

Education

Ph.D. in Economics, **Boston College** — May 2026 (Expected)

M.A. in Economics, **Boston College** — 2022

M.Sc. in Economics and Finance, **LUISS & EIEF** — 2020

B.A. in Economics and Finance, **Università di Tor Vergata** — 2018

Working Papers

"Pairing Batteries with Renewables: How Ownership Shapes Operational Incentives and Market Outcomes"

This paper examines how battery storage ownership structure affects wholesale electricity market outcomes by shaping operational incentives. Using a dynamic dispatch model calibrated to ERCOT data, I show how transmission congestion creates conditions in which batteries operated jointly with a renewable plant are used strategically to increase the value of renewable production. The strength of this incentive depends on supply elasticity and the timing of renewable production. Because of this strategic behavior, co-owned batteries reduce consumer surplus gains by approximately $16,000 per MWh of installed storage capacity over their lifetime relative to standalone batteries, but earn $36,000 per MWh higher profits. Market conditions do not generate enough profits for battery investment to be viable, regardless of ownership. Yet if subsidized, co-owned projects yield the highest net consumer surplus, because the additional revenues they generate reduce the required subsidy sufficiently to outweigh their smaller gross consumer gains. Co-owned projects deliver roughly $1.38 of net consumer surplus for every $1.00 of subsidy, compared with about $1.00 per $1.25 for standalone projects.

Work in Progress

"Estimating the Curtailment-Mitigating Role of Battery Energy Storage Systems"

The rapid expansion of variable renewable energy (VRE) in Texas—reaching 27 GW of solar and 43 GW of wind capacity by 2024—has been accompanied by rising curtailment. When available generation exceeds transmission capacity or contemporaneous demand, grid operators must curtail zero-marginal-cost renewable output. This paper quantifies how battery energy storage systems (BESS) mitigate curtailment by absorbing surplus generation. Using hourly ERCOT data from 2019-2024, I exploit the staggered deployment of new battery installations to estimate the causal effect of storage on market-level curtailment. The identification strategy relies on exogenous variation in battery deployment driven by declining capital costs. I find that each additional MWh of battery capacity reduces curtailment by approximately 0.1 MWh during nighttime and early morning hours (6 PM to 8 AM), when wind generation is abundant, but has negligible effects during midday solar peak hours (9 AM to 5 PM).

Conferences and Seminars

ISO New England Market Design Workshop (September 2025)

Berkeley/Sloan Summer School in Environmental and Energy Economics (August 2024)

Teaching

Teaching Fellow: Machine Learning — Fall 2025

	Teaching Fellow: Environmental Economics	Summer 2025
	Teaching Fellow: Environmental Economics	Summer 2024
	Teaching Assistant Coordinator: Stata Lab	Spring 2024
	Teaching Fellow: Statistics	Summer 2023
Research Experience	*Research Assistant:* Richard Sweeney, Boston College	Summer 2021
	Research Assistant: Luigi Paciello, EIEF	Summer 2019
Programming and Software	Julia, Python, R, Stata, LaTeX, ArcGIS, Microsoft Excel	
Languages	Italian (native), English (fluent)	
Other Interests	Politics, climbing, hiking, skiing, photography, and cooking	
References	Richard Sweeney, Associate Professor, Boston College, sweeneri@bc.edu Michael Grubb, Associate Professor, Boston College, michael.grubb@bc.edu Edson Severnini, Associate Professor, Boston College, edson.severnini@bc.edu	