

Pedro de Vasconcellos Oporto

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ENERGY AND ENVIRONMENTAL ECONOMICS, INC.
Managing Consultant

Cambridge, MA

Pedro de Vasconcellos Oporto contributes capacity expansion and resource adequacy modeling to E3's electric sector planning projects across North America. He has supported state agencies, utilities, and independent power producers in New York, New England, Atlantic Canada, the Pacific Northwest, Virginia, and Colorado. Mr. Oporto joined E3 after earning a Master's in Technology and Policy from MIT, where his research focused on the role of investors in economy-wide decarbonization and the energy transition. Beyond his M.S. from MIT, he holds a B.S. in Computer Science and Mechanical Engineering from Worcester Polytechnic Institute.

Select E3 projects include:

- **Massachusetts Office of Energy Transformation, Technical and Policy Support (2025–Ongoing).** Mr. Oporto is a technical advisor for E3's ongoing support of OET's Peak Energy Demand Reduction working group and previously served as project manager for E3's support of OET's Decarbonizing the Peak working group. E3 applied its reliability modeling toolkit and regional expertise to assess regional resource adequacy needs and opportunities to decarbonize the grid using new demand-side and supply-side measures while maintaining reliability and affordability. E3 has also performed a detailed assessment of key policy, technology, and economic factors that impact the operations of generation facilities across Massachusetts. This work is done in collaboration with power plant owners and stakeholders across the Massachusetts energy landscape, including utilities, developers, legislators, and environmental justice representatives.
- **Resource Adequacy and the Energy Transition in the Pacific Northwest (2025–2026).** Mr. Oporto was the technical lead for this study which E3 performed on behalf of 23 electric utilities and a group of independent power producers. The two-phase study covered the Greater Northwest Region — Washington, Oregon, Idaho, and parts of Montana, Wyoming, and Utah — evaluating near-term needs for 2025–2030 and longer-term portfolios for meeting resource adequacy and regional clean energy goals through 2045. The study established a region-wide analytical foundation for near-term reliability action and long-term investment, underscoring the need for expanded transmission to I-5 corridor load centers, coordinated regional planning, and clear market accreditation signals.
- **New York State, State Energy Plan (2024–2026).** Mr. Oporto was the technical lead for E3's electric sector analysis of New York's State Energy Plan, supporting the New York State Energy Planning Board through NYSERDA. The work used E3's loss-of-load probability (RECAP) and capacity expansion (RESOLVE) models to examine least-cost resource portfolios meeting the state's decarbonization objectives while maintaining reliability. E3's work more broadly spanned three areas: a Pathways Analysis, an Energy Affordability Analysis, and a Transmission and Distribution Reliability Analysis. The plan approved by the State Energy Planning Board in 2026 and will guide New York's decision-making on decarbonization, reliability, affordability, and economic development.

- **Net Zero Atlantic, Atlantic Canada Offshore Wind Integration and Transmission Study (2024–Ongoing).** Mr. Oporto provides technical advice on the resource adequacy component of E3’s assessment of offshore wind integration into the Atlantic Provinces’ electric grid. The study examines the constraints, investments, and technical impacts of adding several GW of offshore wind into Atlantic Canada, particularly the transmission upgrades needed to support large-scale development in the region. It models a range of grid storage targets using both capacity expansion and production simulation modeling, the outputs of which will inform transmission power flow studies. Several scenarios contemplate robust trade with New England, providing context for project- and portfolio-specific market impacts of offshore wind integration.
- **Virginia Joint Legislative Audit and Review Commission (JLARC), Impacts of Data Center Load Growth in Virginia (2024).** Mr. Oporto was the technical lead for the electric sector analysis, which examined the impacts of data center load growth on electric system infrastructure requirements as well as potential cost allocation questions for new loads. The study leveraged E3’s reliability model, RECAP, and capacity expansion model, RESOLVE, to perform a detailed examination of the impacts of new loads in Virginia and across the PJM footprint. The resulting least-cost portfolio, which met all reliability and policy constraints, was evaluated against utility retail rates to identify potential inequities between ratepayer classes. The report delivered findings and recommendations on rate design and power procurement for policymakers and stakeholders weighing data center decisions in Virginia.
- **Public Service Company of Colorado (PSCo), Resource Adequacy Study (2024).** Mr. Oporto was the primary technical analyst for the loss-of-load probability analysis in RECAP supporting E3’s Planning Reserve Margin (PRM) study, which identified PSCo’s 2024–2031 capacity needs to meet reliability requirements and the Effective Load-Carrying Capability (ELCC) of existing and candidate resources. This study assisted PSCo in its Just Transition Solicitation, an electric resource plan (ERP) balancing customers’ future needs, the state’s clean energy and emissions goals, and reliable, affordable service.
- **National Grid, Clean Resilience Link Study (2022–2024).** Mr. Oporto was the primary technical analyst for the examination of the benefits of upgrading an existing 230 kV intertie between ISO-NE and NYISO to 345 kV, “right-sizing” an Asset Condition need in New England to account for load growth and renewable integration. The investment was shown to deliver significant economic benefits to both regions and brought together a coalition of all New England states and New York to seek federal funding for the interregional line. The study involved nodal production cost analysis across four model years (2030–2050) and focused investigations of the line’s resilience benefits.
- **New York State Energy Research and Development Authority (NYSERDA), Impacts of Climate Change on the New York Energy System (2022–2024).** Mr. Oporto was the primary electric sector analyst for a detailed analysis of New York State’s energy system under three possible climate futures and two distinct infrastructure and policy pathways, using E3’s full toolkit: economy-wide load projections, load shaping of electrified heating and cooling, resource adequacy, and capacity expansion modeling. The analysis captured warming impacts on heating and cooling demand, transmission ampacity, and thermal and solar output. E3 then evaluated their effects on system reliability need, resource ELCCs, portfolios, and costs.

- **Massachusetts Clean Energy Center, Energy Storage Market Update and Long-Duration Storage Analysis (2023).** Mr. Oporto was the primary technical analyst for E3's support of Massachusetts in evaluating the near- and long-term outlook for short- and long-duration storage. The study assessed the reliability contributions of a range of storage resources, using E3's RECAP loss-of-load probability model to estimate effective capacity under multiple futures. It also included significant stakeholder engagement, asset valuation analysis, and storage technology road mapping.
- **New York State, Scoping Plan (2022–2023).** Mr. Oporto was the primary technical analyst for E3's support of NYSERDA in its electric sector analysis to inform the Climate Action Council's Scoping Plan. E3 developed scenarios showing how New York could achieve carbon neutrality under the Climate Leadership and Community Protection Act (the Climate Act). This work included a detailed analysis of buildings, transportation, industry, electricity generation, non-combustion, and negative emissions using E3's suite of modeling tools (PATHWAYS, RESOLVE, and RECAP).
- **Confidential Canadian Client, Atlantic Loop Analysis (2022–2023).** Mr. Oporto was the primary technical analyst leading RESOLVE modeling for an E3 project examining how the Atlantic Loop would be used and how its development would affect Canada's eastern provinces. The analysis quantified the displaced capacity and emissions savings associated with the transmission project to support investment due diligence.

MIT SLOAN SUSTAINABILITY INITIATIVE

Research Assistant

Cambridge, MA

August 2020 – June 2022

- Investigated representative cases of investors taking action to mitigate climate change.
- Conducted semi-structured interviews with portfolio and investment managers in the US, Europe, and Asia.
- Examined evolution of net-zero commitments, financial disclosures, and sustainability reports.
- Evaluated the impact of investor actions toward net-zero portfolios on industry and building energy efficiency using system dynamics modeling.
- Led climate solutions workshops with retail and institutional investors using En-ROADS.

VOLORIDGE INVESTMENT MANAGEMENT

Research Analyst Intern, Climate Strategies

Jupiter, FL

June 2021 – August 2021

- Mapped scope 3 emissions for manufacturers of passenger and commercial vehicles by country based on sales, retirement rates, estimated driving behavior, and fuel consumption.
- Led data integration from government reports, investment banking, industry roadmaps, and retail sales analysis so that a similar process could be implemented for other industries.

Education

Massachusetts Institute of Technology

M.S., Technology and Policy

Cambridge, MA

May 2022

Worcester Polytechnic Institute

B.S., Computer Science and Mechanical Engineering

Worcester, MA

May 2020