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ENERGY AND ENVIRONMENTAL ECONOMICS, INC.

New York City, NY

Senior Consultant

Mr. Fratto joined E3's bulk grid and planning group in 2019, where he helps clients prepare for a high renewables future. This includes evaluations of the current and future markets in a changing energy landscape. Mr. Fratto applies this market analysis to asset valuation projects that require revenue stream and benefits analysis, due diligence for sales and purchases, off-taker assessments, as well as market rules and bidding strategies. Clients consist of international investment firms, private equity, utility holding companies, developers, and global energy producers and utilities. Additionally, Mr. Fratto work on state and national government decarbonization strategies through resource planning optimization, low carbon customer adoption modeling, gas decarbonization, and the future of hydrogen.

Mr. Fratto joined E3 from the Massachusetts Institute of Technology Energy Initiative (MITei), focusing on the valuation of technology that will play a role in the decarbonization of electricity sector and the policy that will support such shifts. His collegiate career was spent between research labs, private industry, and fellowships with the Bureau of Land Management, the Utah Governor's Office of Energy Development, and Iberdrola's Global Regulation Department. Mr. Fratto holds an M.S. in Technology and Policy from MIT and a B.S. in Chemical Engineering and Political Science from the University of Utah.

Highlights of his work and public projects include:

- Market Forecasting:
 - Helped develop an e-commerce site for providing E3's market price forecast
 - Market manager for ERCOT and technical lead on ISO-NE, PJM, NYISO with knowledge and experience on CAISO, WECC + Canada regions, and the western EIM.
- Asset valuation of individual & portfolio assets including renewables, storage, gas, nuclear, and transmission lines across North America
- World Resources Institute Building Blocks for a Low-Carbon Economy (2020-2021). Provided technical analysis on identifying the policies and investments needed to meet President Biden's decarbonization targets
- Opportunities for Low-Carbon Hydrogen in Colorado: A Roadmap (2021). Examined the role hydrogen could play in the decarbonization of Colorado's economy for the Colorado Energy Office
- Philadelphia Gas Works Business Diversification Study (2021). Defined and evaluated technology
 pathways to reduce greenhouse gas emissions from PGW's natural gas business
- Mitsubishi Power Hydrogen Opportunities for a Low Carbon Future (2019-2020). Analyzed hydrogen for use in transportation as well as a high-level evaluation of the hydrogen supply chain in the western U.S. in a deeply decarbonized future.
- Colorado Greenhouse Gas Pollution Reduction Roadmap (2019-2020). Developing the electricity sector modeling of Colorado using E3's proprietary model RESOLVE.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Research Assistant, MIT Energy Initiative (MITei)

Cambridge, MA October 2017 – June 2019

o Analyzed the role and value of pumped hydro storage in the electricity dispatch market

 Developed dispatch algorithms for Spain's electricity market in order to evaluate the impact of nuclear power plants and their continued operation

IBERDROLAGlobal Regulation Graduate Fellow

Madrid, Spain

May 2018 - August 2018

Modeled and analyzed Spanish energy markets and nuclear policy under deep decarbonization

SUSTINEO *Consultant*

Dublin, Ireland

January 2017 - January 2018

Implemented international standards (ISO 14001 & 50001) for companies to reduce energy usage

Compiled local, national, and global climate action talking points for consulting presentations

UNIVERSITY OF UTAH

Research Assistant Teaching Assistant Salt Lake City, UT May 2011 – August 2017 August 2016 – December 2016

- TA for "Chemical Engineering Process Design" and Guest Lecturer for "Renewable Energy"
- Research Assistant, University of Utah: Institute for Clean and Secure Energy (2017) on the lab-scale operation, maintenance, and study of a chemical looping combustion system; Crus Center for Renewable Energy (2015-17) developing renewable policy education and analyzing solar and storage within Utah; Department of Chemical Engineering (2013) modeling of algae growth to optimize liquid output for biofuels; Henry Eyring Center for Theoretical Chemistry (2011-2012) developing molecular dynamic simulations to characterize the phases of interfacial water

UTAH GOVERNOR'S OFFICE OF ENERGY DEVELOPMENT

Energy Fellow

Salt Lake City, UT May 2016 – August 2016

- o Produced a report on the impact of the Utah renewable energy tax credit and residential solar PV
- Facilitated a statewide stakeholder process on the policy future for solar PV

U.S. DEPARTMENT OF THE INTERIOR

Petroleum Engineering Intern

Washington, DC May 2015 – August 2015

- o Identified trends, concerns, and best practices for Major Undesirable Events on BLM land
- o Participated in the internal review and implementation of the Hydraulic Fracturing Rule

Education

Massachusetts Institute of Technology

M.S., Technology and Policy (Energy and Power Systems Emphasis)

Cambridge, MA 2019

University of Utah Salt Lake City, UT B.S., with Honors, Chemical Engineering (Energy Emphasis) 2017 B.S., with Honors, Political Science (Public Policy Emphasis) 2017

Citizenship

United States