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ENERGY AND ENVIRONMENTAL ECONOMICS, INC.

San Francisco, CA

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 primarily in WECC and ERCOT. Additionally, Mr. Fratto works on a variety of 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. Highlights of his work and public projects include:

- Market Forecasting:
 - Development of production simulation and market prices for various regions of the U.S. with expert level knowledge of AURORA XMP® model.
 - Technical lead for ERCOT with knowledge and experience on CAISO, WECC + Canada regions, and the western EIM.
- Asset valuation:
 - Individual or portfolio assets including renewables, storage, gas, nuclear, and transmission lines across North America
- <u>Mitsubishi Power Hydrogen Opportunities for a Low Carbon Future (2019-2020)</u>: 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.
- <u>Colorado Greenhouse Gas Pollution Reduction Roadmap (2019-2020)</u>: Developing the electricity sector modeling of Colorado using E3's proprietary model RESOLVE.

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.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Research Assistant, MIT Energy Initiative (MITei)

Cambridge, MA October 2017 – June 2019

- 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

IBERDROLA

Global Regulation Graduate Fellow

Madrid, Spain May 2018 – August 2018 Analyzed Spanish energy markets and nuclear policy through the construction of deep decarbonization scenarios

SUSTINEO

Consultant

Dublin, Ireland January 2017 – January 2018

- Implemented environmental (ISO 14001) & energy (ISO 50001) standards for Irish companies to reduce energy usage
- o 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 labscale 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

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

U.S. DEPARTMENT OF THE INTERIOR	Washington, DC
Petroleum Engineering Intern	May 2015 – August 2015

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

Education

Massachusetts Institute of Technology	Cambridge, MA
M.S., Technology and Policy (Energy and Power Systems Emphasis)	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

<u>Citizenship</u>

United States