Jun Zhang

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ENERGY AND ENVIRONMENTAL ECONOMICS, INC.   San Francisco, CA
Consultant II

Mr. Zhang joined E3 in 2018 after completing his Master of Environmental Management (M.E.M.) at Duke University. Highly technically skilled in Python, R, and other programming languages, his work focuses on enhancing E3's modeling capabilities and user interfaces, especially for RESTORE, E3's energy storage dispatch model. He also helped lead development of E3's new electric vehicle load shape tool, which he used in a confidential project for an electric vehicle supply equipment (EVSE) manufacturer to forecast EV loads with granular time and location data in order to calculate the benefits of vehicle-grid integration (VGI). He has also assisted several asset valuation clients by using E3's RESTORE model to estimate potential storage revenues in the California and New York markets.

Mr. Zhang brings with him extensive research and modeling experience in electricity system analysis, including residential demand, solar PV potential, and renewable integration. As an EDF Climate Corps fellow at Dartmouth College, he helped design and implement the Green Labs program on campus. In addition to his master's degree, Mr. Zhang holds bachelor's degrees in environmental science and economics from Xiamen University in China.

DARTMOUTH COLLEGE   Hanover, NH
EDF Climate Corps Fellow   Jun 2018 – Aug 2018
  o Assessed Dartmouth's Green Labs Program to date, identified gaps and opportunities
  o Designed a strategic scheme for Green Labs Program; assessed and described barriers to implementation
  o Developed financial analysis of Dartmouth's options for Green Labs investments and showed expected paybacks

CENTERS OF AMERICAN STATES   Shanghai, China
Market Research and Business Development Intern   Jun 2017 – Aug 2017
  o Supported Michigan State Governor's trade mission to China by representing one Michigan-based company to interact with 60 high-potential Chinese business partners and successfully invited 16 of them to 1-on-1 business meetings, which resulted in $3 million investment in the client's R&D
  o Performed market research to identify the list of high-potential partners and made 300+ cold calls to establish relationships with these firms

DUKE UNIVERSITY   Durham, NC
Graduate Teaching Assistant   Sept 2017 – Spring 2018
  o Held office hours and lab sessions; graded assignments and exams for Instructors Dr. Dalia Patino-Echeverri and Dr. Timothy Johnson on *Modeling for Energy Systems and Markets for Power Systems;* and for Instructor Dr. Elizabeth Albright on *Applied Data Analysis*

Project Experience

- o **Residential Microgrid System Design**   Sept 2017 – Dec 2017
  Explored optimal designs of residential community microgrids under various scenarios in San Diego, CA, by using HOMER (microgrid optimization model) and considered the regulatory framework, financial incentives, project economics, and case-specific constraints

- o **Power System Renewable Integration**   Jan 2017 – Apr 2017
  Applied optimization and simulation in simplified power system models to analyze the effect of different renewable energy strategies on the system's reliability, costs, and emissions

- o **Supply-Chain Sustainability Life-Cycle Assessment (LCA)**   Jan 2017 – May 2017
  Led a 3-member team to identify a 30% carbon-reduction opportunity for one REI's (top sports gear manufacturer & retailer) product by developing an LCA model to quantify the product's supply-chain sustainability under various scenarios (scope 1, 2, and 3 carbon emissions)

- o **Scenario Analysis for Duke Energy Integrated Resource Planning (IRP)**   Sept 2016 – Dec 2016
  Developed policy-change scenarios to bind the impacts of natural-gas-policy uncertainty with Duke Energy's capacity planning; using a simplified capacity planning spreadsheet model

- o **GIS-Based Multi-Criteria Wind Farm Site Selection**   Sept 2016 – Dec 2016
  Evaluated 10 nominated sites in North Carolina by the criteria of land feasibility, regulations, bird population, wind resource, and economics to filter out the optimal sites by using ArcGIS and spreadsheet modeling

Research Experience

- o **Increasing Solar PV Capacity at Duke University**   Apr 2017 – May 2018
  - Estimated available installation area, the technical potential (87.1 MWdc), and hourly power output of on-site PV capacity atop rooftop and parking lots by geospatial analysis, PVWatts, and HOMER (energy models)
  - Analyzed the grid impact of PV integration by modeling and simulating the power system operation in CPLEX (system optimization software) under various scenarios
  - Summarized the regulatory framework for large-scale solar projects, implementation barriers, and best practices from other universities
  - Performed financial analysis for various PV project configurations by spreadsheet modeling considering the availability of financial incentives (ITC), and then compared the GHG abatement cost of PV projects with other available carbon-abating strategies, informing a better pathway to achieve climate goal

- o **Bottom-Up Model of Residential Electricity Demand China by End-Uses**   Sept 2017 – May 2018
  - Analyzed detailed household energy-audit data to categorize residential customers by their energy consumption behaviors using statistical clustering methods in R
  - Approximated hourly load-profiles for different behaviors of each household appliance, and then interpolated the hourly generation at the city and province level by available demographic, socioeconomic, geographic, and appliance energy efficiency data, using spreadsheet modeling and R

o **End-Use Model of Residential Electricity Demand in Mexico**   Jan 2017 – May 2017
  - Assisted in developing the end-use model of residential electricity demand in Mexico by cleaning input data, updating model parameters, and visualizing results in Tableau

Education

Duke University   Durham, NC
Master of Environmental Management   May 2018

Xiamen University   Xiamen, China
B.S., Environmental Science, Bachelor of Economics   2016

Citizenship

China