Nathan Lee, Ph.D.

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ENERGY AND ENVIRONMENTAL ECONOMICS, INC. Denver, CO
Associate Director

Dr. Nathan Lee manages projects at E3 on integrated system planning topics including resource portfolios, capacity expansion modeling, and integrated resource planning. He has led the development and modeling of capacity expansion modeling using PLEXOS LT. His work has contributed to E3 projects in Nebraska, Arizona, California, and other states. Dr. Lee spent six years at the National Renewable Energy Laboratory (NREL) where he supported multiple power system planning and grid integration efforts around the globe. Additionally, he led NREL research on decision science for energy transitions. Nathan's doctoral research focused on decision support methodologies for national energy planning in emerging economies. He completed his Ph.D. and Masters in Sustainable Energy Systems with the MIT Portugal Program at the University of Porto. He also earned a B.S. in Engineering Physics from Miami University of Ohio.

Recent E3 projects include:

Omaha Public Power District (OPPD), Decarbonization and Capacity Expansion Analysis (2022-2023). Project manager for E3 analysis that expanded on past E3 work for OPPD, developing an assessment that identified near-term resource additions to meet load and reliability needs, ultimately resulting in $2B investment decision approved by the OPPD board. Dr. Lee managed the project's technical work, the and team and the budget, ensuring that E3 provided the modeling and analysis necessary for OPPD to make an informed investment decision.

Salt River Project (SRP), Integrated System Plan (2022-2023). Dr. Lee led E3's review SRP's clean energy modeling and also led the development and modeling of PLEXOS LT capacity expansion modeling. Explored over 15 cases and sensitivities in very condensed timeline for this first of its kind integrated system planning project.

Silicon Valley Power (SVP), Integrated Resource Plan (2023). Dr. Lee managed and led the integrated resource planning (IRP) process. IRP addressed SVP's rapidly growing load, which is seeing significant increase in large data center loads and is unique in California in needing to meet those loads in the near-term with clean energy resources. E3 applied a "marginal reliability need" approach, using marginal ELCC accreditation for all resource types, a novel approach to the IRP process that provided a more accurate long-term forecast.

NATIONAL RENEWABLE ENERGY LABORATORY Golden, CO
Energy Program Manager, Consultant, & Researcher June 2016 – October 2022

- Managed portfolio of international projects providing expert consulting and client-facing project management on decarbonization, renewables, energy sustainability, energy transitions, policies,

and green fuels. Responsibilities included: client relations, project management, analysis, research, strategy, business development, planning, budgets, and mentoring.

- Provided expert energy consulting to governments, energy ministries, and utilities in Asia, Africa, South America, Central America, and United States. Conducted extensive research and analysis to provide clients with strategy, roadmaps, and energy solutions to complex problems involving the production, delivery, conversion, and use of energy.
- Led research and application of decision science initiatives within energy system deployment group. Developed laboratory capabilities to support decision making under deep uncertainty within energy system planning and operations.
- Designed a first-of-its-kind power transmission development plan and roadmap for the Philippines Department of Energy. Led complex energy project with cross functional stakeholders that identified transmission options throughout the country and connected 25 geographical areas with high-quality renewables including wind, solar, hydro, and geothermal.
- Led a technical team of experts that developed comprehensive data and created a publicly available database platform on solar resources to enhance an organization's decision making for scaling renewable energy deployment across Southeast Asia.
- Managed a project and built an energy model for Southeast Asia government to supply power in a new capital covering energy transition, decarbonization, renewables, and decarbonization policy to achieve clean energy goals.
- Managed clean energy transition programs providing global experts to assist 60 developing countries with achieving their climate change goals and objectives.
- Built capabilities and best practices for clients in energy efficiency and renewable energy including creation of knowledge centers, websites, workshops, fact sheets, and journal articles—translating cutting-edge, technical topics to broad audiences.

INST. OF SCIENCE & INNOVATION IN MECHANICAL & INDUSTRIAL ENGINEERING Porto, PT
Consulting Energy Systems Engineer December 2015 – May 2016

FUNDAÇÃO GOMES TEIXEIRA Porto, PT
Consulting Energy Systems Engineer January 2011 – July 2011

- Conducted the analysis, built the system model, and generated key recommendations on the integration of heat pump-based solutions that could increase plant capacity of a Combined Cooling Heat and Power System operating in Portugal.

PEACE CORPS Republic of Cape Verde
Volunteer July 2007 – September 2010

NEXANT, INC. Boulder, CO
Energy Engineer May 2005 – June 2006

Education

University of Porto, MIT Portugal Program Porto, Portugal
Ph.D., Sustainable Energy Systems 2016

University of Porto, MIT Portugal Program — Porto, Portugal
Advanced Studies Diploma (Master's Equivalent), Sustainable Energy Systems — 2011

Miami University — Oxford, OH
B.S., Engineering Physics — 2005