

ENERGY AND ENVIRONMENTAL ECONOMICS, INC.

Partner

Boston, MA
2015 – present

Ms. Clark leads E3's Climate Pathways and Electrification team and advises clients on cost-effective strategies for achieving state, regional, and national decarbonization goals. Areas of expertise include strategies to meet net zero GHG targets, building and transportation electrification strategy, future of natural gas distribution, and both policy and regulatory strategy. She has extensive experience with scenario-based models that provide decisionmakers in the U.S. and abroad with accessible, policy-relevant insights with a particular focus on the role of buildings, transportation, electricity generation, and emerging technologies. She has supported over 15 states with comprehensive decarbonization planning in addition to regional and national studies. Her past clients include the New York State Energy Research and Development Authority (NYSERDA), New Jersey Board of Public Utilities (NJBPU), Colorado Energy Office (CEO), California Air Resources Board (CARB), Massachusetts Clean Energy Center (MassCEC), Rhode Island Energy, Maryland Department of the Environment, Baltimore Gas and Electric, Oregon Department of Environmental Quality, Minnesota Department of Transportation, and Xcel Energy. Ms. Clark brings extensive research experience on economy-wide deep decarbonization and professional experience with energy modeling and stakeholder workshop facilitation. Ms. Clark earned an M.S. in Technology and Policy from the Massachusetts Institute of Technology (MIT) and a B.S. in Mechanical Engineering from Tufts University. Recent projects include:

- **New Jersey Energy Master Plan (2024-present).** Leading the team supporting the Board of Public Utilities (BPU) in updating their Energy Master Plan for 2024. E3's work includes comprehensive economy-wide scenario modeling, electricity capacity expansion and dispatch modeling, customer affordability analysis, stakeholder engagement, and support for EMP narrative and drafting.
- **EPA Climate Pollution Reduction Grant Support (2023-present).** Supporting 9+ states and municipalities in their development of EPA Climate Pollution Reduction Grant (CPRG) deliverables including Priority Climate Action Plans (PCAPs) due in 2024, Comprehensive Climate Action Plans (CCAPs) due in 2025, and Status Reports due in 2027. This work includes development of comprehensive GHG inventories, long-term decarbonization scenarios, specific near-term measure impacts, low-income and disadvantaged community impacts, broad stakeholder engagement, authority to implement assessments, and workforce impacts.
- **Massachusetts Residential Electric Rate Design (2024-present).** Leading the E3 team supporting the Massachusetts Clean Energy Center in exploring residential rate design for electrification, decarbonization, and affordability. E3 work includes near-term recommendations focused on changes that could be implemented today, and long-term recommendations focused on changes that could be implemented in the future after full role out of advanced metering infrastructure (AMI). E3 is also supporting broad stakeholder engagement and education on rate design topics and developing a user-friendly model to explore alternative rate designs for representative customers.

- **Rhode Island Future of Gas Proceeding (2023-2024).** Supported the Rhode Island Public Utilities Commission, Rhode Island Energy, and a PUC-established Stakeholder Committee in the development of a technical analysis report to investigate pathways for the gas system to reduce emissions in line with the Act on Climate. With support from the Stakeholder Committee and a Technical Working Group, E3 designed six economy-wide decarbonization scenarios that showcase implications of different paths to reaching decarbonization in the Rhode Island heating sector, within the context of statewide net zero goals.
- **Greenhouse Gas Emissions Scenarios through 2050, U.S. Climate Alliance (2021, 2023).** Led an E3 team that provided modeling and scenario analysis to support the U.S. Climate Alliance's 2021 and 2023 Annual Reports. The reports highlight the progress Alliance members have already made toward reducing greenhouse gas (GHG) emissions, and using E3's modeling, details multiple scenarios of Alliance-wide GHG emissions through 2050.
- **New York Scoping Plan Support, NYSERDA (2019-present).** Advising the ongoing effort to evaluate opportunities and scenarios to achieve statewide CLCPA emissions targets alongside deep decarbonization for the electricity, transportation, and building sectors. E3 is developing innovative analytical tools and scenarios and also supporting stakeholder engagement with the Climate Action Council and State Energy Planning Board.
- **North Carolina Decarbonization Pathways, NC Governor's Policy Office (2022-2023).** Led the E3 team developing decarbonization scenarios for the State of North Carolina to meet their net zero GHG goals by 2050. This project includes a focus on coordinating with state agencies and public stakeholders on ongoing policy and planning efforts and exploring opportunities for new mitigation actions that complement federal policy such as the Inflation Reduction Act.
- **Baltimore Gas & Electric Decarbonization Strategy, BGE (2022).** Led the team evaluating alternative decarbonization scenarios that test the value of an integrated gas and electric system in meeting state climate goals. Scenarios vary both the use of the company's gas and electric infrastructure and the mix of technology solutions that customers adopt across sectors and evaluate impacts on total costs, customer impacts, and technology risks.
- **Colorado GHG Pollution Reduction Roadmap, Colorado Energy Office (2019-2020).** Managed the E3 team supporting the Colorado Energy Office and other collaborating state agencies. E3 developed decarbonization scenarios within the PATHWAYS and RESOLVE models to explore key opportunities and challenges to reaching climate goals in the State. E3 also supported the state in conducting public stakeholder workshops with support from Center for New Energy Economy (CNEE).
- **Minnesota Decarbonization Pathways Analysis, Xcel Energy Northern States Power (2018-2019).** Managed the E3 team supporting Xcel Energy in the development of its Upper Midwest System Integrated Resource Plan for its IRP filing with the Minnesota Public Utilities Commission. E3 developed economy-wide scenarios for the State of Minnesota to highlight the role of the electricity sector in helping meet state decarbonization goals. E3 also analyzed the impact of deep decarbonization scenarios on Xcel Energy's Upper Midwest System over the 2020-2034 planning period and identified optimal resource investment portfolios that met resource adequacy needs in the context of state and corporate long-term greenhouse gas reduction targets.
- **Reducing Transportation Sector Emissions, Minnesota Dept. of Transportation (2019).** Managed the E3 team supporting the Minnesota Dept. of Transportation (MnDOT) in developing emissions scenarios to reach statewide emissions targets established by the Next Generation Energy Act (NGEA). Analysis addressed passenger vehicles, trucks, and buses and modeled four categories of measures: efficiency, electrification, non-energy sources, and low-carbon fuels.
- **Maryland Greenhouse Gas Reduction Act Scenarios, Maryland Dept. of the Environment (2017-2020).** Managed the team evaluating existing state and federal GHG reduction policies, in

partnership with Towson University's Regional Economic Studies Institute (RESI), for the Maryland Dept. of the Environment (MDE). This project involves interpreting and representing state and federal regulations in the PATHWAYS model, developing scenarios of additional mitigation measures for Maryland, and presenting results to the Maryland Mitigation Working Group.

- **Greenhouse Gas Pathways Analysis, New York State Energy Research and Development Authority (2016-2017).** Managed the E3 team supporting the New York State Energy Research and Development Authority (NYSERDA) in developing a detailed greenhouse gas (GHG) analysis to quantify infrastructure and policy changes necessary to meet state goals. E3's climate mitigation analysis evaluates the GHG and cost implications of different scenarios that are consistent with New York's goal of reducing statewide GHG emissions 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050.
- **2030 Target Scoping Plan Update Support, California Air Resources Board (2016-2017).** Worked with the California Air Resources Board (CARB) in developing an updated Scoping Plan in support of their requirements under Assembly Bill 32 (The Global Warming Solutions Act, 2006). E3's statewide greenhouse gas (GHG) mitigation analysis evaluated the GHG and cost implications of different 2030 scenarios that are consistent with the governor's goal of reducing statewide GHG emissions 40% below 1990 levels by 2030. The study results were presented as part of a high-profile stakeholder process, and included extensive public review and comment.
- **Economic Analysis of a Market-Based Carbon Reduction Program in Oregon, Oregon Dept. of Environmental Quality (2016-2017).** Managed work to evaluate economic impacts of adopting a carbon market in Oregon, per the directive of the State Legislature (SB 5701) for Department of Environmental Quality (DEQ). E3's approach involved the combination of a detailed literature review and a quantitative economic analysis.
- **Title 24 Building Codes, California Energy Commission (2016).** Led the E3 effort to update the cost-effectiveness methodology for the 2019 California building code standards that will go into effect in 2020 (Title 24). E3 produced the time-dependent valuation (TDV) metric used to measure the cost-effectiveness of energy efficiency measures for new buildings in California.

MIT ENERGY INITIATIVE

Research Assistant

Cambridge, MA

2013 – 2015

- Research focus on U.S. and international policy related to carbon capture and storage and emerging technologies.

STOCKHOLM ENVIRONMENT INSTITUTE

Staff Scientist

Somerville, MA

2008 – 2013

- Supported 4000+ active users of the LEAP (Long-range Energy Alternatives Planning) software system through online forums, training materials, and week-long software training workshops. Training workshops were conducted in 9 countries in English and Spanish to an audience of academics, government officials, and utilities.
- Managed consulting projects for clients interested in climate scenario modeling, including for the Mexican National Institute of Ecology and Massachusetts Department of Environmental Protection

Education

Massachusetts Institute of Technology
M.S., Technology and Policy

Cambridge, MA
June 2015

Tufts University
B.S., Mechanical Engineering

Medford, MA
June 2008

Authored Papers

1. "Preliminary Economic Outlook for California Residential ZNE" ACEEE Summer Study on Energy Efficiency in Buildings. 2016. Available online:
http://aceee.org/files/proceedings/2016/data/papers/10_1071.pdf
2. "Assessment of the US EPA's determination for the role of CO₂ capture and storage (CCS) in new fossil-fuel power plants" Environmental Science & Technology. 2014. Available online:
<http://pubs.acs.org/doi/abs/10.1021/es501748r>
3. "Can 'stranded' fossil fuel reserves drive CCS deployment?" Energy Procedia. 2014. Available online: <http://www.sciencedirect.com/science/article/pii/S1876610214025776>