

Philip Eash-Gates, Principal Associate

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Principal Associate*, May 2022 – Present, *Senior Associate*, September 2019 – May 2022

Provides consulting and researching, conducts modeling and analysis, and prepares expert reports on issues including carbon and energy policy, strategic electrification, energy efficiency, energy supply technologies, building performance standards, energy justice, state and municipal energy planning, energy program design and delivery, and health and environmental impact assessment.

Massachusetts Institute of Technology, Trancik Lab, Cambridge, MA. *Research Assistant*, 2017 – 2019

Developed quantitative models and engineering cost tools to accelerate the performance evolution of clean energy technologies. Proposed innovations to improve technoeconomic analysis of nuclear and solar power systems. Collaborated with researchers across national laboratories, academia, and industry.

CVAL Innovations, Dallas, TX. *Director of Efficiency Projects*, 2014 – 2017

- Recruited and directed an interdisciplinary team of engineers, contractors, and energy analysts to develop and implement customized deep energy retrofits and strategic building electrification, achieving an average reduction in energy consumption of 45%.
- Expanded engineering and consulting services to include strategic resource and sustainability planning, building portfolio analysis, and energy systems commissioning.

City of San Antonio, Office of Sustainability San Antonio, TX. *Energy Manager*, 2013 – 2015, *Special Projects Manager*, 2012 – 2013, *Senior Management Analyst*, 2009 – 2012

- Developed and managed City of San Antonio's first low-income weatherization program, *Casa Verde*. Oversaw comprehensive retrofits for energy conservation, health, and safety in 3,200 households. Coordinated co-delivery of related programs, including energy bill assistance, water conservation, and housing repair.
- Created and administered the City of San Antonio's first Energy Management Division.
- Established a revolving Energy Efficiency Fund to capture municipal energy savings and reinvest in projects.
- Secured and managed \$25M in U.S. DOE grants to deploy energy efficiency, conservation, and renewable energy projects and programs throughout the community.
- Monitored performance of 3,200 utility accounts and 650 City facilities to develop a comprehensive energy conservation strategy.
- Maintained 5-year budget and project pro-forma to fund a comprehensive retrofit program for municipal buildings. Developed and implemented performance-driven retrofits to reduce energy and water consumption.

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- Managed stakeholder review of building energy codes to recommend improvements toward achieving net-zero energy by 2030. Guided the City to adopt the most advanced building energy codes in Texas.
 - Sample community programs managed: low-income residential weatherization program, one-stop sustainability and green jobs training campus, community shade tree program for energy savings.
 - Sample performance metrics: 3,320 residences weatherized; 5,700 shade trees planted for energy conservation; 178 municipal facilities upgraded – advanced lighting technology and controls, retro-commissioning, efficient heating and cooling systems, thermal envelope improvements, water conservation upgrades.

City of San Antonio, Office of Mayor Phil Hardberger San Antonio, TX. *Sustainable Energy Analyst*, 2008 – 2009

- Advised the Mayor on the economic, societal, and environmental viability of various energy generation portfolios for the City’s municipal power utility. Developed energy efficiency, demand response, and renewable resource portfolio to successfully avert construction of new coal generation.
- Assisted with the creation of the City’s first sustainability plan, Mission Verde. Developed key initiatives focused on green jobs training and deployment of clean energy technologies.

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA
Master of Science in Technology and Policy, 2019

Trinity University, San Antonio, TX
Bachelor of Science in Engineering Science; Minors in Environmental Studies and Mathematics, 2008

CERTIFICATIONS

- Professional Engineer, Texas Board of Professional Engineers
- Certified Energy Manager, Association of Energy Engineers, ANSI accredited
- Certified Measurement and Verification Professional, Association of Energy Engineers

TRAINING AND PROFESSIONAL ACTIVITIES

- **Modeling tools and software:** R, MATLAB, Excel, ENERGY STAR Portfolio Manager, EnergyPlus, OpenStudio, eQUEST, ComStock, ResStock, Scout, Building Decarbonization Calculator (BDC), Energy Model for Building Emissions Reduction (EMBER), National Energy Modeling System (NEMS), System Advisor Model, Distributed Energy Resources Customer Adoption Model (DER-CAM), EnCompass, AVoided Emissions and geneRation Tool (AVERT), Environmental Justice Screening and Mapping Tool (EJScreen), CO-Benefits Risk Assessment

Health Impacts Screening and Mapping Tool (COBRA), ProEngineer, Engineering Equation Solver, Salesforce, LaTeX, SAP, Microsoft Office Suite

- **Technical Advisory Committees:** Boston BERDO Technical Advisory Group, Newton BERDO Team, Build San Antonio Green, Texas Property Assessed Clean Energy, City of San Antonio Building-Related and Fire Codes Appeals and Advisory Board
- **Professional Coursework:** Leadership in Energy and Environmental Design (LEED), International Energy Conservation Code, energy management, International Performance Measurement & Verification Protocol (IPMVP), contract administration, grants management & compliance, supervisor training academy, diversity equity and inclusion
- **Organizational Affiliations:** Association of Energy Engineers, U.S. Green Building Council, National Council for Examiners for Engineering and Surveying (NCEES), Texas Board of Professional Engineers and Land Surveyors, Build San Antonio Green, South-central Partnership for Energy Efficiency as a Resource

RESEARCH AND PUBLICATIONS

Yuang, C., M. Whited, T. Nguyen, S. Schadler, R. Anderson, W. Dejeanlouis, C. Palmer, C. Mattioda, A. Glaser Schoff, S. Koester, J. Hittinger, **P. Eash-Gates**. 2024. *Utility Engagement Playbook for Industrial Customers: Addressing Power Sector Barriers to Electrification*. Synapse Energy Economics and World Wildlife Fund for Renewable Thermal Collaborative.

Eash-Gates, P., L. Metz, K. Schultz, S. Kwok, A. Hopkins. *Connecticut Comprehensive Energy Strategy: Buildings White Paper*. Prepared by Synapse Energy Economics for Connecticut Department of Energy and Environmental Protection. Forthcoming.

Synapse Energy Economics and Connecticut Department of Energy and Environmental Protection. "Buildings and Industry." In *Connecticut 2023 Comprehensive Energy Strategy*. Forthcoming.

Eash-Gates, P., L. Metz, S. Kwok, K. Schultz, K. Takahashi. *Pathways for Connecticut Building Decarbonization: Analysis of Thermal Decarbonization Scenarios Aligned to the Global Warming Solutions Act*. Prepared by Synapse Energy Economics for Connecticut Department of Energy and Environmental Protection. Forthcoming.

Eash-Gates, P., A. Hopkins, J. Smith. *Comprehensive Energy Strategy: Decarbonizing Thermal Loads in Connecticut's Industrial Sector*. Prepared by Synapse Energy Economics for Connecticut Department of Energy and Environmental Protection. Forthcoming.

Eash-Gates, P., J. Smith, K. Takahashi, S. Sharaf, A. Hopkins. *Connecticut Comprehensive Energy Strategy: Active Demand Response White Paper*. Prepared by Synapse Energy Economics for Connecticut Department of Energy and Environmental Protection. Forthcoming.

Eash-Gates, P., O. Griot, A. Hopkins, L. Metz, E. Sinclair, J. Smith. 2023. *Coming Clean on Industrial Emissions: Challenges, Inequities, and Opportunities in U.S. Steel, Aluminum, Cement, and Coke*. Prepared by Synapse Energy Economics for Sierra Club.

Carlson, E, **P. Eash-Gates**, B. Fagan, A. Hopkins. 2023. *Review of Northwest Natural Gas 2022 Integrated Resource Plan—Final Report: Assessing Compliance with the Oregon IRP Guidelines and the Greenhouse Gas Reduction Requirements from the Climate Protection Program*. Prepared by Synapse Energy Economics for Staff of Oregon Public Utilities Commission.

Eash-Gates, P., O. Griot, P. Knight, S. Kwok. 2023. *Building Performance Standards Implementation: Emissions Factors and Accounting for Cambridge’s Net-Zero Building Emissions Policy*. Prepared by Synapse Energy Economics for City of Cambridge.

Eash-Gates, P., K. Takahashi. 2022. “Boston’s Net-Zero Building Performance Standard: Making a Policy that’s Inclusive and Flexible.” *Proceedings of the 2022 ACEEE Summer Study of Energy Efficiency in Buildings*.

Eash-Gates, P., J. Frost, S. Kwok, J. Litynski, K. Takahashi, P. Eash-Gates, A. Hopkins, S. Kwok. 2022. “Decarbonization of Buildings.” In *San Diego Regional Decarbonization Framework*, edited by SDG Policy Initiative, School of Global Policy and Strategy, University of California San Diego (UC San Diego). Prepared by Synapse Energy Economics for County of San Diego.

Eash-Gates, P., A. Hopkins, S. Kwok, I. Addleton, J. Hall, S. Letendre. 2021. *New York City Community Choice Aggregation Feasibility Study*. Prepared by Synapse Energy Economics for New York City.

Eash-Gates, P., K. Takahashi, D. Goldberg, A. Hopkins, S. Kwok. 2021. *Boston Building Emissions Performance Standard*. Prepared by Synapse Energy Economics for City of Boston.

Eash-Gates, P., S. Letendre. 2021. *Decarbonization of Connecticut Towns*. Prepared by Synapse Energy Economics for People's Action for Clean Energy.

Addleton, I, E. Camp, E. Sinclair, **P. Eash-Gates**, P. Knight. 2021. *Benefit-Cost Analysis of Anbaric’s Proposed Long Island Battery Energy Storage System*. Prepared by Synapse Energy Economics for Anbaric Development Partners.

Bhandari, D, M. Chang, **P. Eash-Gates**, J. Frost, S. Letendre, J. Litynski, C. Roberto, A. Takasugi, J. Taberner, R. Wilson. 2021. *Exelon Illinois Nuclear Fleet Audit*. Prepared by Synapse Energy Economics for Illinois Environmental Protection Agency.

Napoleon, A., J. Hall, J. Kallay, M. Chang, **P. Eash-Gates**, N. L. Seidman, C. James, D. Torre, D. Brutkoski, J. Migden-Ostrander, K. Colburn, K. Maddux, D. Harlow, M. Power. 2020. *Energy Infrastructure: Sources of Inequities and Policy Solutions for Improving Community Health and Wellbeing*. Synapse Energy Economics, Regulatory Assistance Project, and Community Action Partnership for the Robert Wood Johnson Foundation.

Eash-Gates, P., M.M. Klemun, G. Kavlak, J. McNerney, J. Buongiorno, J.E. Trancik. 2020. “Sources of Cost Overrun in Nuclear Power Plant Construction Call for a New Approach to Engineering Design.” *Joule*, 4(11), pp.2348-2373.

Eash-Gates, P., D. Glick, S. Kwok. R. Wilson. 2020. *Orlando’s Renewable Energy Future: The Path to 100 Percent Renewable Energy by 2050*. Synapse Energy Economics for the First 50 Coalition.

Eash-Gates, P., B. Fagan, D. Glick. 2020. *Alternatives to the Surry-Skiffes Creek 500 kV Transmission Line*. Synapse Energy Economics for the National Parks Conservation Association.

Bhandari, D., **P. Eash-Gates**, R. Fagan, A. Hopkins, S. Letendre, C. Odom, W. Gonzalez, J. Migden-Ostrander, J. Slinger. 2020. *Battery Energy Storage Study for a Renewable and Resilient Island Grid for the Commonwealth of Puerto Rico*. Prepared by Synapse Energy Economics and Regulatory Assistance Project for Puerto Rico Energy Bureau.

Eash-Gates, P., A. Hopkins, S. Letendre, C. Odom, S. Jayasuriya, M. Koenig, M. Zebovitz. 2020. *Mobile Energy Storage Study for Emergency Relief Operations*. Prepared by Synapse Energy Economics and DNV GL for the Massachusetts Department of Energy Resources.

Eash-Gates, P., J. Kallay, S. Letendre, A. Allison, P. Knight, B. Biewald. 2019. *Power Plant Useful Life: Definitions, Issues, and End-of-Life Approaches*. Prepared by Synapse Energy Economics for the U.S. Environmental Protection Agency.

Eash-Gates, P. 2019. *Modeling barriers to cost change in solar and nuclear energy technologies*. Masters Thesis. Massachusetts Institute of Technology.

Steve Easley & Associates, Pentair Aquatic Systems, AquaStar Pool Products, and City of San Antonio. 2015. *City of San Antonio public swimming pool energy efficiency retrofit*.

City of San Antonio. 2013. *Stakeholder Sustainable Building Committee energy code report*.

Keeping PACE in Texas. 2014. *PACE in a Box: a toolkit for Texas counties and municipalities to create uniform, user-friendly, scalable, and sustainable PACE programs throughout Texas*.

City of San Antonio, Office of Mayor Hardberger. 2009. *Mission Verde: Building a 21st Century Economy*.

SELECTED PRESENTATIONS

Eash-Gates, P. “Boston’s Net-Zero Building Performance Standard: Making a Policy that’s Inclusive and Flexible.” Presentation at the Proceedings of the 2022 ACEEE Summer Study of Energy Efficiency in Buildings, August 2022.

Eash-Gates, P. “City of Boston Building Emissions Reduction and Disclosure Ordinance: Technical Training.” Presentation at the City of Boston Air Pollution Control Commission, June 2022.

Eash-Gates, P. “How Do We Build When We Build Back: Boston Building Emissions Performance Standard.” Presentation at the BARI Conference 2021: Building Back Smarter, April 2021.

Eash-Gates, P. “Climate Policy and Local Initiatives.” Presentation at the MIT Joint Program on the Science and Policy of Global Change, January 2018.

Gates, P. “Managing energy in San Antonio public buildings.” Presentation at the Texas Energy Summit, December 2013.

Resume updated October 2023