

Avery Barnett

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Executive Summary

Energy policy specialist with 5+ years of experience in grid resilience, hazard-risk and power systems modeling (Julia, Python, GenX), and Caribbean energy transitions. Proven ability to translate technical research into actionable policy recommendations. Track record of building trusted relationships with 15+ energy sector organizations and leading cross-functional diverse teams. Currently serve on IRENA's Youth Council, bringing global perspective and an extensive network in the renewable energy sector.

Education

Princeton University, School of Public and International Affairs

Ph.D. in Public Affairs (Science, Technology, and Environmental Policy)

M.A. in Public Affairs

Princeton, New Jersey

May 2026

September 2023

- **Graduate Certificates:** Latin American Studies, McGraw Teaching Transcript

- **Affiliations:** NJEDA Wind Institute Fellow (2023-24), Macro-Energy Systems Fellow (2023-24), IRENA Youth Council (2024–26)

Grinnell College

B.A. in Physics (Honors), Technology Studies and Environmental Studies Concentration

Grinnell, Iowa

May 2021

Professional Experience

Founder & Director - Grid Guard Consulting Ltd. – Kingston, Jamaica

June 2026 – Present

- Founded Grid Guard Consulting Ltd. to commercialize the Power System Cyclone Impact Model, a peer-reviewed grid resilience tool developed at Princeton University
- Spearheading the deployment and scaling of region-specific electric grid resilience models across Caribbean island nations
- Accepted as 1 of 10 start-ups in Halcyon's inaugural Caribbean Climate Pre-Accelerator

Offshore Wind Fellow - New Jersey Economic Development Authority – Princeton, NJ

August 2023 – August 2024

- Chosen as 1 of 4 fellows to do cutting-edge offshore wind research to improve New Jersey's development efforts
- Developed grid resilience assessment framework using advanced modeling techniques to evaluate hurricane impacts on NY-NJ electricity infrastructure, providing actionable insights for policymakers and utility stakeholders, resulting in published peer-reviewed research (Environmental Research: Infrastructure and Sustainability, 2025)
- Applied statistical modelling and scenario analysis to inform regulatory decision-making and infrastructure planning

Energy Policy Researcher (remote) - Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)

Summer 2022

- Served as liaison among 15+ energy companies, government ministries, and CCREEE, facilitating data collection and stakeholder coordination for regional energy policy initiatives
- Produced comprehensive energy sector analysis for Jamaica, published in CCREEE's annual Energy Report Cards, reaching government officials and industry leaders across the Caribbean
- Collaborated with Jamaica's Ministry of Science, Energy, and Technology to validate data accuracy and ensure alignment with national renewable energy goals

Energy Markets Intern (remote) - Guzman Energy – Denver, CO

Summer 2021

- Conducted competitive market analysis across all U.S. electricity markets, synthesizing complex pricing and capacity data to support business development strategies
- Developed training materials for new hires on electricity market fundamentals, regulatory frameworks, and industry terminology—demonstrating ability to communicate technical concepts to non-technical audiences

Energy Policy Research Consultant (remote) – Clarke Energy Associates - St. Thomas, Barbados

Summer 2021

- Delivered client-ready technical reports and policy analysis on 15+ emerging energy topics including electric vehicles, green hydrogen, carbon removal, and renewable technologies under tight deadlines
- Supported bid development for Caribbean-based consulting projects via intensive technical, legal, and regulatory research

Climate Science Research Intern (remote) – NOAA – Princeton, NJ

Summer 2020, Spring 2021

- Validated hurricane wave modeling simulations using Python-based statistical analysis, contributing to improved extreme weather forecasting capabilities; received a poster award at the 2020 SACNAS conference

Student Researcher – The Green Program, Kathmandu University – Kathmandu, Nepal

January 2020

- Constructed an 18kW photovoltaic water pump to supply water to a village within rural Nepal through collaborating with 15 other students and the Give Power Foundation; improved the dissemination of educational materials about sustainability

Summer Energy Intern – Emera Caribbean Inc. – St. Michael, Barbados

Summer 2019

- Researched viability of 100% renewable electricity across the country by 2030 alongside the Asset Management Department; presented findings at the National Society of Black Physicists Conference
- Performed geospatial capacity assessment using GIS analysis to quantify potential solar and wind capacity across available land areas, informing utility planning decisions

Publications & Thought Leadership

Publications

- **Barnett, A., et al. (2025).** *Powering Through the Storm: Estimating Electric Grid Resilience Using a Power System Cyclone Impact Model.* *Environ. Res.: Infrastruct. Sustain.* <https://doi.org/10.1088/2634-4505/ae17e8>

Select Conference Presentations

- **Multi-Island Power System Optimization: A Feasibility Study of the Eastern Caribbean Power Pool** – INFORMS Annual Conference (October 2025)
- **Power Plays: Stakeholder Perspectives and the Geopolitics of an Eastern Caribbean Power Pool** - Caribbean Studies Association Annual Conference (June 2025) & Sir Arthur Lewis Institute Conference (April 2025)
- **Powering Through the Storm: Estimating Electric Grid Resilience Using a Power System Cyclone Impact Model** - American Geophysical Union Annual Conference (December 2024) & INFORMS Annual Conference (October 2024)

Media and Public Engagements

- **Careers in Climate Panelist** – Grinnell College (April 2025): Discussed career pathways in climate tech and energy policy
- **Featured Expert** – [Bad News Good News](#) (Feb 2025) & [Brains, Black Holes, and Beyond Podcast](#) (Dec 2023): Communicated complex climate and offshore wind topics to general audiences

Leadership and Stakeholder Engagement

IRENA Youth Council Member – IRENA – Abu Dhabi, United Arab Emirates

September 2024 – August 2026

- Collaborate within 13-member council to plan and execute Youth Forum, engaging 100+ international youth delegates
- Design and lead strategic bilateral meetings with government officials, industry leaders, and international organizations
- Provide support to global youth energy networks and monitor partnerships to strengthen collaboration and amplify impact

University Administrative Fellow - Office of the Provost, Princeton University – Princeton, NJ

January – July 2024

- Collaborated with the Diversity, Equity, and Inclusion office to provide input and guidance on current training material and the development of future programming
- Spearheaded projects to improve student life on campus, highlight underrepresented voices, and promote safe and inclusive spaces

Jamaica Energy Policy Trip Leader – *Princeton School of Public & Int'l. Affairs* - Princeton, NJ

October 2023 – January 2024

- Led engagement for 10+ graduate affiliates, coordinating 10+ meetings with government officials, utility executives, and private sector leaders on renewable energy and environmental policy, grid modernization, and environmental justice
- Crafted daily program proposal and per diem budget (total ~\$30k) for approval by administration
- Designed educational programming that bridged technical energy policy with cultural and historical context

Macro-Energy Systems (MES) Workshop Organizer - *MES Organization* – Princeton, NJ

September 2023 – August 2024

- Oversaw program implementation of logistics for bi-annual Workshop, attracting 100+ multi-sectoral attendees
- Mobilized \$10,000+ in funding through securing contributions from 4+ university partners and private sector sponsors
- Coordinated with professors and fellows from 4+ universities to curate agenda featuring speakers, lightning talks, and posters
- Managed team of 7+ individuals, delegating responsibilities to optimize event execution and stakeholder engagement

Teaching and Communication Experience

Guest Lecturer - *Physics and Renewable Technology* – Grinnell College – Grinnell, IA

April 2025

- Delivered university lecture on energy modelling to 20+ students, translating complex technical concepts for diverse audiences

Teaching Assistant - *Princeton University - The Environmental Nexus (ENV210A/B)* - Princeton, NJ

Fall 2023, Fall 2024

Skills

Software: Google Earth Pro, Minitab, ArcGIS, QGIS, Microsoft Office Suite: Excel, Word, PowerPoint
Programming: Python, Julia, GenX, LaTeX, STATA, HTML, C, CSS, R, and MATLAB
Languages: English (Native), Spanish and French (Intermediate Proficiency)