

# Brenda Nkatha Kithinji

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## EDUCATION

**Glasgow Caledonian University – African Leadership Campus**

**Pamplemousses, MU**

*MEng Electrical Power Systems Engineering, BE Electrical Power Systems, and Certificate in Entrepreneurial Studies & Project Management* May 2025

- **Relevant Coursework:** Engineering Mathematics, Systems Design, Control Engineering, Safety and Protection, Energy Audit, Professional Practice.
- **Honors and Awards:** First Class Honors, Best Honors Project, Mastercard Foundation Scholarship, Environmental Champion '24.

## WORK EXPERIENCE

**Energy Terminal**

**Durham, NC**

*Research Analyst Intern*

*May 2024 – October 2024*

- Collaborated with a global team of 14 researchers to analyze energy sector trends and simulate energy policy scenarios using the En-ROADS simulator, achieving a proposed energy mix projected to limit global warming to 2°C while addressing socioeconomic factors like urbanization and deforestation.
- Conducted over 15 expert interviews and literature reviews to assess renewable energy integration strategies, delivering a comprehensive report on sustainable energy practices that informed stakeholders about viable pathways to reduce carbon emissions by 20% by 2030.

**Paragon One, National Geographic Society & The Nature Conservancy**

**Arlington, VA**

*Freshwater and Community Conservation Extern*

*February 2024 - April 2024*

- Led community surveys and interviews with over 100 residents around Lake Victoria to assess the socioeconomic impact of water hyacinth proliferation, delivering insights that informed policies to mitigate a 30% decline in fishing yields and improve waterway accessibility.
- Collaborated with local authorities and community groups to implement sustainable uses for water hyacinth, such as biogas production and basket crafting, empowering 50+ households with alternative livelihoods while preserving the lake's ecosystem and biodiversity.

**Kariki Bondet Farm**

**Laikipia, KE**

*Solar PV System Design Project Intern*

*January 2023 - December 2023*

- Designed engineering drawings and layouts using AutoCAD for a 100 kW solar PV system, optimizing panel placement to achieve a 15% increase in energy efficiency while meeting site-specific safety standards.
- Analyzed energy consumption data for over 30 operational units using Excel, identifying patterns that reduced energy waste by 20% and informed the sizing of solar inverters and battery storage.
- Collaborated with a multidisciplinary team during **site visits** to inspect installations and ensure compliance with safety codes, contributing to the successful commissioning of a solar system projected to save \$8,000 annually in energy costs.

**Kenya Power & Lighting Company**

**Laikipia, KE**

*Operation & Maintenance Intern*

*May 2022 - August 2022*

- Inspected and maintained high-tension (HT) and low-voltage (LV) lines, improving network reliability by 15% through early issue detection, using troubleshooting and diagnostic skills.
- Replaced damaged utility poles and realigned leaning ones, enhancing structural stability and reducing outages by 10%, leveraging knowledge of electrical infrastructure and safety standards.
- Performed transformer inspections and fault-finding on the HT and LV network, reducing downtime by 20% and minimizing transformer failure rates, utilizing preventive maintenance and repair expertise.

## LEADERSHIP EXPERIENCE

**The Charge Circle**

**Laikipia, KE**

*Co-Director of Programs*

*March 2022 - Present*

- Led strategic initiatives for a women-led platform fostering inclusivity in the energy sector, engaging over 500+ members.
- Designed and led mentorship cohorts, attracting 200+ applicants and hosting biweekly sessions featuring 12 guest speakers, career workshops, and expert-led discussions.

**Institution of Engineering Technology Campus Club**

**Pamplemousses, MU**

*Co-Director of Projects*

*May 2021 - Present*

- Managed 5- 7 projects including team formulation, weekly check-ins with leads, facilitate partner meetings, and ensure teams remain on the timeline.
- Coordinate project sourcing with 4-5 external club partners to design semester long projects for collaboration between industry and students.

## PROJECTS

**Glasgow Caledonian University: Honors Project**

**Pamplemousses, MU**

*Design and Optimization of a Hybrid Renewable Energy System for Sustainable Agriculture Development in Kenya*

*January 2023- August 2023*

- Designed and simulated a hybrid solar and battery energy system to support sustainable agriculture in rural Kenya, achieving a 40% reduction in reliance on conventional power sources while ensuring cost-effective energy delivery.
- Recognized as the Best Project in the Department for its innovative and impactful approach.
- Developed technical schematics and performed economic and sensitivity analyses using industry-standard tools, ensuring compliance with electrical codes and standards, and delivering a solution projected to increase agricultural productivity by 25%.

**Trees For Pads**

**Laikipia, KE**

*Personal dual-purpose project*

*August 2022 - Present*

- Raised funds through the sale of 1,000+ seedlings to provide sanitary towels for 100+ underprivileged girls, addressing menstrual health needs while promoting environmental conservation.
- Organized community tree-planting drives involving 200+ participants, contributing to the planting of 5,000+ trees. Secured \$2,000 grant.

## SKILLS & INTERESTS

**Skills:** AutoCAD, Python, Microsoft Office, Data Analysis, Excellent communication & teamwork, MATLAB, Project Coordination, Sustainable Design

**Interests:** Agribusiness, Augmented Reality, Podcasts (Catalyst, Energy Gang, Currents), Renewable Energy, Growth Investing, Environmental Conservation